Permit Amendment TCEQ Permit No. MSW- 1693B
City of Laredo Landfill

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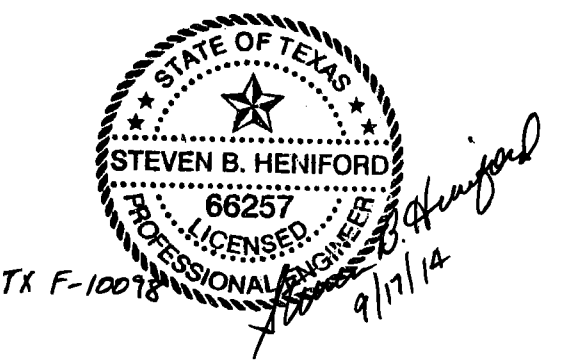

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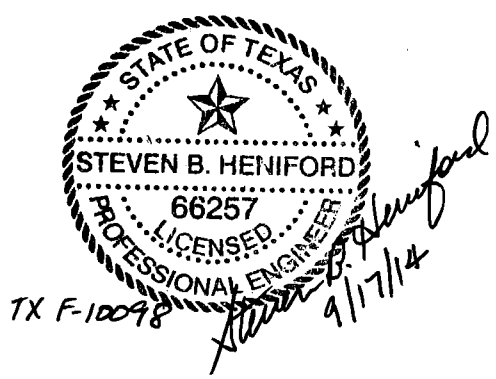

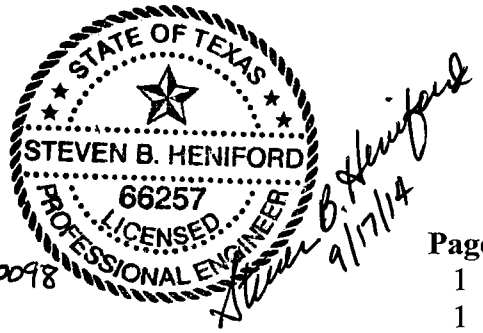

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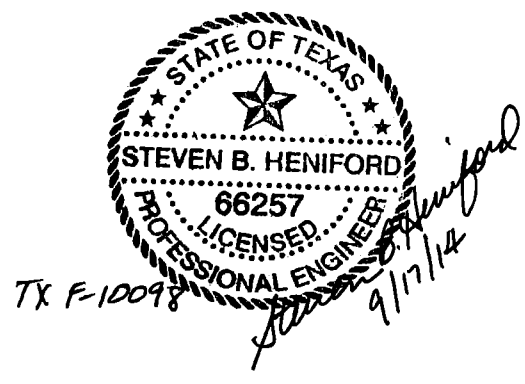

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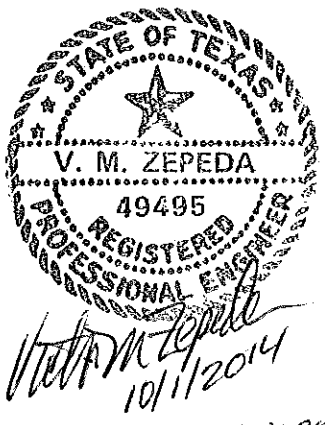

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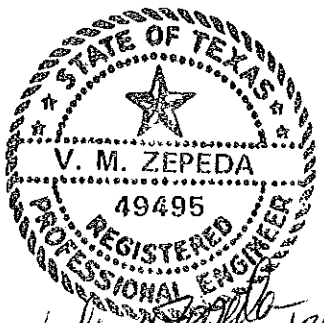

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City of Laredo Landfill Permit Amendment 1693B
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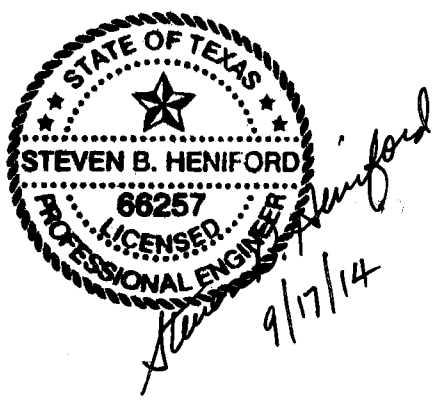
August 2014

PART III
Attachment 4
Geology & Geotechnical Report



LAREDO LANDFILL
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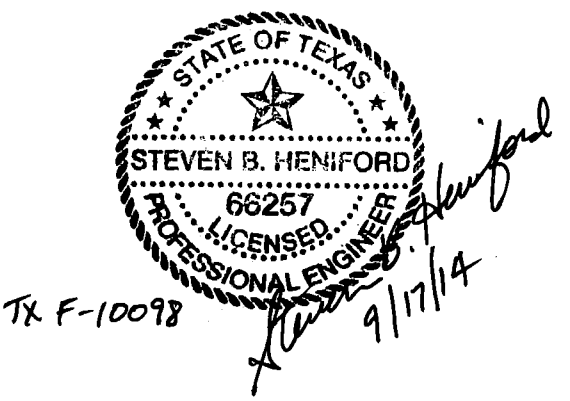

1.0 Introduction & Summary

The City of Laredo filed a permit amendment in 1999 to increase the height of the Landfill. The 1999 permit amendment did not include any additional land. The 1999 amendment was reviewed by the TCEQ and approved on September 23, 1999.

The 1999 permit amendment did include a complete evaluation of geologic and groundwater conditions at the Landfill in accordance with TCEQ guidelines. The guidelines for evaluating geologic and geotechnical issues have not changed significantly since the 1999 amendment was approved. The City is now amending its permit to increase the height of the Landfill and to fill in areas that were previously used for a natural gas pipeline. The natural gas pipeline has been abandoned. The City's permit amendment does include the addition of 3.12 acres of land that is located to the south of Phase 3. This land will be used for locating the leachate storage tank, the tire chipping and storage area and the white goods storage area. No waste cells will be constructed in the 3.12 acres.

In 2013, the City submitted to TCEQ a boring plan as required under Title 30 TAC 330.63(e). The plan recommended that based on the geologic information collected and evaluated as part of the 1999 Permit Amendment, no additional borings would be required for the 2013 amendment. A copy of the 1999 Permit Amendment geology and groundwater reports were submitted to TCEQ at this time. A copy of the boring plan and TCEQ correspondence are included in this Appendix 4A. Also included with this Amendment is the Geology Report completed for the 1999 Amendment (Appendix 4B). Note that the page numbers presented in the 1999 Geology Report are shown as they were submitted in the 1999 Permit Amendment, starting with page number 516, located in the upper left hand corner of the page.

In order to properly design the Landfill expansion under this current amendment, a geotechnical report was undertaken by Terracon Consultants, Inc. (Terracon) Engineering. The Terracon Geotechnical report evaluates slope stability for the development of the Phase IV area conversion to a Type 1 Landfill. A copy of this report is provided in Appendix 4C. Another geotechnical report completed by Terracon was undertaken to evaluate slope stability for the construction of the final landfill grades and excavation. This analysis evaluated both the Subtitle D final cover and the alternative final cover as presented in Attachment 12 – Final Cover Plan. A copy of this report is provided in Appendix 4D.

Appendix 4A
Boring Plan & TCEQ Approval

PS Phillips Environmental

510 Benjamin St.
Sulphur Springs, TX 75482
903-243-8076

November 7, 2012

Mr. Jeff Holderread. PE, MC 124
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 778711-3087

Re: City of Laredo Landfill, MSW-1693A

Dear Mr. Holderread:

PS Phillips Environmental (PSPE) is representing the City of Laredo in its upcoming Permit Amendment to increase the vertical height of its landfill and to connect Phases 1 and 4 and Phases 2 and 3 of the landfill. The amendment does not include a lateral expansion of the landfill.

I am a Texas licensed geoscientist (Lic. No. 249) and have been a practicing geologist since 1974. I have assisted on geological and groundwater portions of landfill permits for the cities of Duncanville, Graham, Garland, Irving, Dallas, Commerce, and Lubbock, Texas, private landfills near Paris, Ennis, Harlingen, and Abilene, Texas, and a 1,500 acre site the for North Texas Municipal Water District near Melissa, Texas. I am familiar with the geology and groundwater requirements of Title 30 Texas Administrative Code (TAC) Chapter 330 Subchapters B and J

I have reviewed the Vertical Expansion Permit Amendment Application No. MSW-1693A, Laredo Sanitary Landfill, Webb County, Texas prepared by RUST Environment and Infrastructure dated June 14, 1999 including the various geological and hydrogeological reports included as attachments to the permit amendment. This permit amendment, which included the geology and groundwater characterization, was approved by TCEQ and the Permit issued on September 23, 1999. The geology, boring logs, and associated data from the Permit Amendment are enclosed with this letter.

Based on my review of the geology, groundwater, boring locations, and boring logs for the various soil, monitoring well, and piezometers, a sufficient number of borings, to a sufficient depth, have been conducted, and the site and groundwater, as approved by TCEQ as noted above, have been adequately characterized and should continue to meet the requirements of Title 30 TAC 330.63(e).

Since, as noted previously, that the upcoming Permit Amendment does not include any lateral expansion, the **City of Laredo is requesting TCEQ approval that no additional borings should be needed to characterize the geology and groundwater for the vertical expansion amendment.**

Should you have any questions, please call me at (903) 243-8076 or (903) 335-8027.

Sincerely,
PS PHILLIPS ENVIRONMENTAL

Stephen D. Phillips, P.G.
Principal Geologist

Cc: Steve Geiss, City of Laredo
Mike Carleton, Project Manager, AZ&B

Enclosures: Volume II of IV, Vertical Expansion, Permit Amendment Application No. MSW-1693A, Part III Site Development Plan, Attachment 4, Geology Report:

- Section A, 3
- Section B, 2 and 3
- Attachment 4-3
- Attachment 4-4
- Attachments 4-6 through 4-13

Appendices A, B, C, D, and E

Attachment 5, Groundwater Characterization Report

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 2, 2013

Mr. Stephen Geiss
City of Laredo Solid Waste Department
P. O. Box 1965
Laredo, Texas 78044

Re: City of Laredo Landfill – Webb County
Municipal Solid Waste (MSW) - Permit No. 1693A
Subsurface Characterization Report
Tracking No. 16565579; RN102327582/CN600131908

Dear Mr. Geiss:

On November 27, 2012, the Texas Commission on Environmental Quality (TCEQ) received a letter, submitted on behalf of the City of Laredo by PS Phillips Environmental. Mr. Stephen D. Phillips, P.G. signed the report on November 1, 2012. The letter stated that a permit amendment application will be submitted for a proposed vertical expansion of the above referenced landfill and requested a determination, from the TCEQ, on whether additional geologic and/or hydrogeologic data would be required in the proposed amendment application.

The letter further stated that Mr. Phillips performed a review of the geologic and hydrogeologic information that was previously prepared for this site. Mr. Phillips made a positive determination that the existing information is sufficient and complete, in accordance with Title 30 Texas Administrative Code (30 TAC) Section §330.63(e), and that no further subsurface geologic investigations, relative to the proposed vertical expansion, would be required for submittal with the proposed amendment application.

We agree the necessary geologic and hydrogeologic data that had been collected and developed for this facility was sufficient for characterizing the site for issuance of MSW Permit No 1693. Continuing groundwater monitoring data has also been collected and submitted to the TCEQ and been deemed to be in accordance with the approved Groundwater Sampling and Analysis plan.

We do agree that an additional subsurface investigation is not required for vertical expansion of the facility. Existing data would suffice provided that lateral expansion is not proposed and that no changes are proposed for the currently approved excavation elevations.

If you have questions regarding this letter, please feel free to contact me at (512) 239-1270. When addressing written correspondence, please use mail code MC 124.

Sincerely,

Frederick Meyers, P.G.
MSW Permits Section
Waste Permits Division

cc: Mr. Stephen D. Phillips, P.G.

Appendix 4B
1999 Geology Report

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VERTICAL EXPANSION PERMIT AMENDMENT
APPLICATION NO. MSW-1693A
LAREDO SANITARY LANDFILL
WEBB COUNTY, TEXAS

GEOLOGY REPORT

PART III, ATTACHMENT 4

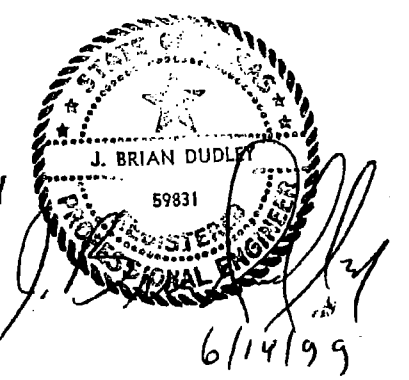
Prepared for:

City of Laredo
Department of Public Works
4312 Daugherty Avenue
Laredo, Texas 78040
(956) 795-2500

Prepared by:

RUST Environment & Infrastructure
2929 Briarpark Dr., Suite 600
Houston, Texas 77042
(713) 785-9800

FOR PERMIT PURPOSES ONLY



June 1998
Technically Complete - June 14, 1999

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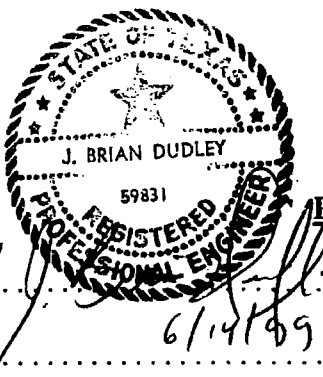

FOR PERMIT PURPOSES ONLY

PART III, ATTACHMENT 4, GEOLOGY REPORT

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STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED
PROFESSIONAL ENGINEER
6/14/99

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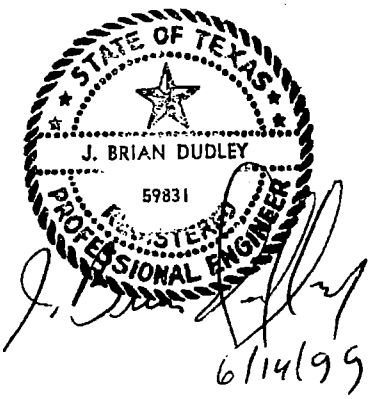

Attachment

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Appendix

SECTION A GEOLOGY SUMMARY

1.0 INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) Municipal Solid Waste Management Regulations (MSWMR) require that the owner or operator of a municipal solid waste facility that stores, processes, or disposes of municipal waste in landfills submit a Geology Report, Part III, Attachment 4 as part of a Permit Amendment Application submittal package. The report was prepared by Mr. Emmett Hudson, CPG, as project manager, with assistance from Mr. David Smith, Geologist with sixteen years of experience. TNRCC comments on the initial June 1988 report are addressed in this revision, and the geology report is signed by David Smith, a qualified groundwater scientist, except for those reports required to be signed and sealed by a licensed engineer, as required by the Texas Engineering Practice Act. A summary of the requirements to include supplements of previously prepared documents as sources of references are provided and discussed in the following sections as required by 30 TAC §330.56 (d).

A comprehensive Phase II Hydrogeologic Report was prepared by Huntingdon Engineering & Environmental (Huntingdon) in 1994 and is included in Appendix A. The following information is included to summarize and supplement that report.

2.0 PHYSIOGRAPHY AND TOPOGRAPHY

2.1 REGIONAL PHYSIOGRAPHY AND TOPOGRAPHY

The Laredo facility is located 2 miles east of the intersection of State Highway 359 and Loop 20. A general location map showing the site location is included as Attachment 4-1.

Laredo lies within the Rio Grande embayment of the Gulf Coastal Plain. The Gulf Coastal Plain is characterized by a relatively flat, low-lying surface which slopes gradually to the Gulf of Mexico. The Gulf Coastal Plain sediments and alluvial sediments are composed of complex interbedded sediments of gravel, sand, silt, and clays formed in a fluvial deltaic environment.

2.2 REGIONAL SURFACE WATER AND DRAINAGE FEATURES

The Laredo facility is located within the Rio Grande River Basin. The closest prominent regional surface water feature in the vicinity of the site is Casa Blanca Lake, which is approximately 2.9 miles from the northwestern corner of the site.

2.3 SITE TOPOGRAPHY

The highest elevation is approximately 540 feet above mean sea level (MSL) in the southwest corner, and the lowest elevation of approximately 470 MSL is near the northeast corner. The maximum elevation change across the site is approximately 70 feet, as shown on Part III, Attachment 4-2.

2.4 SITE SURFACE WATER AND DRAINAGE FEATURES

There are three main natural drainage swales located on the site. One swale crosses the northwestern most corner of the site. The second swale is located along the eastern boundary of the site. The third swale intersects the southern boundary in the center of the site and crosses diagonally to a stock tank. All three swales are addressed both in the wetlands investigation and the drainage design.

3.0 REGIONAL GEOLOGY

Depositional sediments of the Tertiary system are present at the surface as outcrops throughout the general area surrounding the facility as shown on Attachments 4-3 and 4-4. The Tertiary is divided into the Eocene Series with one major group division within the region, the Claiborne Group. The Carrizo Sand is the lowermost formation of the Claiborne Group. The Carrizo is composed of very permeable, massive, cross-bedded, medium-grained sand which ranges in thickness from 150 feet to 1,200 feet. Above the Carrizo Sand, the Bigford, El Pico Clay, Laredo, and Yegua Formations occur in areas west and southwest of the Frio River which is located approximately 75 miles northwest of Laredo. These differ lithologically and by fossil content from their equivalent counterparts northeast of the Frio River known as the Reklaw, Queen City Sand, Weches, and Sparta

Sand. The predominantly sandy units, the Bigford Formation, the Queen City Sand, the Laredo formation and the Sparta Sand interfinger in the vicinity of the Frio River. The Bigford Formation consists of sand, silt, and thin beds of shale, with shale making up about 25 percent of the formation in the outcrop. The Queen City Sand is a thick unit of sand, clay, and sandy clay. The Queen City Bigford unit ranges in thickness from approximately 200 feet in Zavala County to 1,400 feet in Frio County. The Sparta Sand ranges from 40 feet to 200 feet in thickness and consists of sand with minor amounts of clay. The El Pico Clay outcrops in the northwestern corner of Webb County interfingering with the Queen City Sand to the east near the Frio River. The El Pico Clay consists mostly of clay with sandstone, and coal. The clay is in part gypsiferous, medium gray to brown. The sandstone in this unit is mostly fine-grained with some medium to coarse-grained material, argillaceous, silty, in part glauconitic with thin to massive bedding. The sandstone is friable to indurated and attains a thickness of 900 feet to 1,150 feet. The Laredo Formation consists of sand at its base grading upward to sandy clay and clay at the top. The Laredo Formation has a maximum thickness of 600 feet to 700 feet. The uppermost formation of the Claiborne Group is the Yeuga which consists of mostly a sandy, silty, lignitic, chocolate to reddish brown clay with sandstone. The sandstone is a quartz, fine-grained, indurated to friable, massive, calcareous, glaconitic sand which weathers to a loose ferruginous yellow-orange and reddish-brown soil. The clay produces a dark-gray soil. Table 1 contains detailed information concerning the regional stratigraphic units for the Claiborne Group for the Webb County Area. Information concerning the regional geology in the general area is documented in the Huntingdon Report in Appendix A.

3.1 SITE GEOLOGY

The facility is located on an outcrop of the Laredo Formation. The Laredo Formation, as discussed in Section 3.0, Regional Geology, is a geologic unit occurring in the Claiborne Group of the Eocene Series within the Tertiary System. The Geologic Atlas of Texas, Laredo Sheet, 1976, characterizes the Laredo Formation as sandstone and clay with thick sandstone members in the upper and lower part. The formation is described as very fine to fine-grained, in part glauconitic, micaceous, ferruginous, cross-bedded, dominantly red and brown with clay in the middle. It weathers to an orange-yellow color with dark gray limestone layers and concretions are common; some of which

are fossiliferous with abundant marine megafossils. The average thickness beneath the site facility is about 620 feet. The site geology has been previously described in various site investigation reports, Huntingdon, 1994, F.G. Bryant, 1983, and Rust E&I (REI), 1997. These reports are included in Appendices A, B, and C, respectively.

The upper Laredo Formation beneath the facility was further informally subdivided into four hydrogeologic units known as Layers I-IV during the 1997 subsurface investigation conducted by REI (See Table 2).

4.0 GEOLOGIC PROCESSES

This section summarizes and describes any geologic processes active in the vicinity of the facility. This description includes information on any faults or subsidence, erosional effects and potential for erosion due to surface water processes such as overland flow, channeling, gullying, and fluvial effects at the facility. Also, all wetlands were located and identified within the facility boundary.

4.1 FAULT AREA

Compliance with 30 TAC §330.303 related to the location restriction criterion of fault areas begins with a determination of whether or not the disposal facility is located within 200 feet of a fault that has experienced displacement during Holocene time. In the event that the waste boundary is located within 200 feet of a Holocene fault, it must be demonstrated that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the disposal units. The Holocene Epoch, extending from the end of the Pleistocene Epoch to the present, represents the most recent 10,000 years of the Quaternary Period.

As part of the EPA Subtitle D requirements, 40 CFR §258.13, a demonstration of compliance with the fault location restrictions was performed in April and May 1994 by SWL Environmental Services for the existing site and approved by the TNRCC on April 18, 1994. A copy of the approved fault location restriction demonstration is included in Part I/II, Appendix B.

4.2 UNSTABLE AREAS

The location restriction criterion in 30 TAC §330.305 states that disposal units located in an unstable area shall demonstrate that engineering measures have been incorporated into the disposal unit's design to ensure that the integrity of the structural components of the disposal unit will not be disrupted. Unstable areas, by definition, are areas susceptible to natural or human-induced events or forces that are capable of impairing the integrity of some or all structural components (i.e., liners, leachate collection systems, final covers, etc.) of a disposal unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movement, and karst terrains.

As part of the EPA Subtitle D requirements, 40 CFR §258.15, a demonstration of compliance with the unstable areas location restrictions was performed in April and May 1994 by SWL Environmental Services for the existing site and approved by the TNRCC on April 18, 1994. A copy of the approved unstable areas location restriction demonstration is included in Part I/II, Appendix B.

4.2.1 Karst Terrain

The Laredo facility is not located in a Karst Terrain area. Development of karst topography requires the subsurface dissolution of some soluble rock, usually limestone or dolomite. Also, karst regions usually occur in areas of abundant to moderate rainfall; the Laredo semi-arid climate is not favorable to this type of terrain development. No outcrops of limestone have been observed on or near the site, nor are any mapped on the Geologic Atlas of Texas, Laredo Sheet, B.E.G.,1976. No indications of collapse features such as sink holes and associated surface depressions were observed on aerial photographs of the site and surrounding area.

Therefore, surface manifestation of karst topography, such as sink holes, closed depressions, and other features were not observed, indicating that karst features have not developed. None of the available information indicates that carbonate and/or calcareous dissolution zones exist (in the subsurface) that would cause instability at the surface. Therefore, instability will not

result because of near surface karst development. Karst terrain as defined in accordance with 40 CFR §258.15 does not exist at, beneath, or adjacent to the Laredo facility.

4.2.2 Areas Susceptible to Mass Movement

A review of the geological/hydrogeological investigations performed by F.G. Bryant, Huntingdon, and REI was conducted to determine if the site is located in and area susceptible to mass movement. Based on a review of these reports, the Laredo facility is not located in an area susceptible to mass movement. As defined by 40 CFR §258.15, mass movement is a function of the slope of the terrain, soil mass, soil moisture and soil composition.

The Laredo facility is located in a well drained area just south and upgradient of a surface drainage feature with runoff flowing northward toward this feature. The southern portion of the site has a ground surface elevation ranging from approximately 540 feet in the southwest corner to 470 feet in the northeast corner. Slopes average about 10 percent on the hillsides found in the southwestern and south central portions of the site to approximately 1 percent or less near the eastern boundary of the site. Water levels are generally encountered near the base of a sandstone unit known also as Layer II, at a depth of approximately 38 feet to 100 feet.

In conclusion, the calcareous shale and clay interbedded with well cemented sandstone beneath the facility are generally hard, dense, and massive, thereby providing an area of minimal gravitational movement.

Based on review of existing geological and geotechnical data, it can be concluded that neither karst terrain, poor foundation conditions nor areas susceptible to mass movement exist at, or adjacent to the Laredo facility.

4.3 EROSIONAL EFFECTS AT THE FACILITY

Both temporary and permanent erosion control measures are proposed for the Laredo facility to reduce the potential erosion generated from the site. Add on berms are installed on the final cover. Erosion control mats are used where the flow exceeds 5 fps. Other erosion control measures such as rip-rap, silt fences, and hay bales may be utilized as part of the site's best management practices.

Drainage terraces are proposed on the final cover of the disposal facility to intercept the flow of storm water down the slope of the final cover before it attains enough velocity to erode the final cover. The drainage terraces are designed to orderly convey runoff from the top of the cover to rundown channels and the perimeter ditches. These berms are typically sloped at 3% to maintain flow velocities from scouring the final cover soil and to assure flow in the event of differential settling of the facility. The berms are spaced at an average vertical height of 40 ft. They are sized to convey the anticipated 25-yr storm with a minimum of 0.5 ft of freeboard.

4.4 FACILITY WETLANDS

A wetlands field investigation of the Laredo Sanitary Landfill site, as proposed in this Permit Amendment Application, was conducted on March 11, 1997.

Results of this wetlands field investigation were forwarded to the United States Army Corps of Engineers (USACE) in correspondence dated September 4, 1997 for the purpose of obtaining a jurisdictional determination for this site. The report entitled "Draft Preliminary Determination of Waters of the United States, Including Wetlands," which detailed the field investigation, was forwarded to the USACE with this correspondence.

On October 23, 1997 the USACE requested additional information regarding the wetlands located on the landfill property. A second site visit was conducted on November 11, 1997, and the requested supplemental information was forwarded to the USACE in correspondence dated April 17, 1998. Information forwarded with this correspondence included additional wetland data points, additional

site photographs, additional vegetation data, and average rainfall data for the city of Laredo.

In a telephone conversation on May 18, 1998, the USACE requested additional information regarding the total acreage of wetlands which exist on the landfill property. The requested information was provided to the USACE in correspondence dated June 2, 1998.

Once a jurisdictional determination and delineation verification is received from the USACE for the 2.96 acres of waters of the United States, including wetlands, which exist on this site, a permit application will be submitted to the USACE to impact and/or fill waters of the United States, including wetlands, for the purpose of the landfill expansion. Preliminary conversations with the USACE indicate that proposed impacts may be authorized under Nationwide Permit 26. A mitigation proposal will be included with the wetlands permit application.

Correspondence relating to the wetlands investigation of this property is included in Part I/II, Appendix B.

5.0 REGIONAL HYDROGEOLOGY

This section summarizes a description of the regional aquifers in the vicinity of the City of Laredo based upon published and compiled information from previous reports performed by other consultants at the facility.

5.1 REGIONAL AQUIFERS

The major aquifers in the region are contained in the Wilcox and Claiborne Groups, primarily within the sand layers of the Bigford and Carrizo Formations of the Claiborne Group. The strata of these units consist of clay, cross-bedded river sand, beach sand, silt and lignite. The Carrizo Sand is the principal aquifer in the area yielding moderate to large quantities of fresh to slightly saline water to wells in the region. According to geophysical logs, the top of the Carrizo sand is found beneath the Bigford between 2,200 feet and 3,200 feet below the surface in the Laredo area. In Webb County,

most wells drilled into the Carrizo yield low quantities of poor quality ground water and none are known to produce water suitable for domestic or irrigation purposes. The City of Laredo's reverse osmosis (RO) well is screened in the Carrizo Sand. The water yield of this well is low and of such poor quality that it requires treatment prior to distribution. The calculated transmissivity at this location is 340 gal/day-ft. The Wilcox Group is found beneath the Carrizo Sand and is often considered as an undifferentiated geologic unit. Its upper section contains some massive sand beds which are continental in origin. The Wilcox yields small to moderate quantities of fresh to slightly saline water to wells in the northern and western parts of the region. The water quality of the Carrizo-Wilcox in the southern portion of Webb County is poor and not an important source of drinking water. The best potential drinking water in the Carrizo-Wilcox is in the upper northwest corner of Webb County, approximately 25 miles from Laredo, Texas.

Based on geophysical logs, the top of the Bigford occurs at depths between 1,250 feet and 2,222 feet in the Laredo area and is 500 feet to 900 feet thick. The Bigford is not known to produce water suitable for domestic or irrigation purposes and there are no known wells screened in the Bigford Formation in the Laredo area.

Minor aquifers in the region consist of the predominantly sandy portions of the Queen City Sand, Bigford Formation, Sparta Sand, and Laredo Formation which interfinger in the vicinity of the Frio River, about 75 miles northwest of Laredo to form two aquifers, the Queen City-Bigford and the Sparta-Laredo aquifers. These aquifers yield small to moderate quantities of fresh to moderately saline water to wells in this area. Wells screened in the upper portions of the Laredo Formation yield water quality characterized as a sodium-bicarbonate type. Salty zones appear in the upper members with a mean total dissolved solids (TDS) concentration in these zones of 2103 mg/L.

Other minor aquifers in the region consist of the El Pico Clay yielding small to moderate quantities of fresh to slightly saline water to wells and the Yegua Formation which yields small quantities of slightly to moderately saline water to wells in the region.

According to published information (CH2M Hill, 1996, reference 4) used to obtain regional information for the Laredo area, a data gap exists regarding the continuity of the sands and sandstones of the Laredo formation and the relative hydraulic relationships between these layers and lower permeability silts and clays. Regional groundwater maps were not available. The United States Geological Survey (USGS) is currently preparing an update of the hydrogeology of the Webb County Area. In addition, the City of Laredo is currently working with CH2M Hill on region water supply and groundwater issues, (not, however, related to the Landfill). Neither entity has any published reports at this point in time. In conversations with a representative of the consulting firm working with the City, it appears the uppermost regional Aquifer, the Laredo Formation, exhibits confining conditions. The geologic map indicates the landfill is located on the Laredo Formation. There is, therefore, the potential that a recharge zone exists within the bounds of the facility. Based on hydrogeologic conditions at the site, including low permeability layers that appear continuous across the site, it is unlikely however, that there is a recharge zone within the bounds of the landfill. As discussed in subsections 3.2 and 3.3 Section B of this document, and subsection 3.0 of Section C of this document, an underlying shale unit, known as layer III, is interpreted to be an aquiclude and a barrier to vertical fluid migration across the facility. According to the Consultant, the primary recharge zones are generally confined to within three miles of the Rio Grande River.

5.2 REGIONAL WELL AND WATER- LEVEL DATA

A literature search at the TNRCC was conducted by Banks Information Solutions, Inc., Austin, Texas in 1996 to locate water wells in the general area of the Laredo facility. Detailed information concerning the water well search of all known wells located within a 2-mile radius of the facility is located in Table 3. The location of the wells are depicted on Part III, Attachment 4-5.

Most of the wells appear to be completed in the lower Laredo Formation at a depth of about 620 feet beneath the facility. Water production from this zone is at a rate of approximately 20 gpm and quality is generally poor in the upper beds but improves in the lower beds. Productive zones in the Laredo have been encountered north, south, and east of the City of Laredo at depths of between 400

feet and 600 feet and 700 feet to 825 feet. Pumping rates have been recorded in excess of 200 gpm at this interval depth, but the median pumping rate is 50 gpm.

Three wells are completed beneath the Laredo Formation in what is believed to be the El Pico Clay. In the Laredo area, the top of the Pico Clay most likely occurs between 600 feet and 900 feet with a maximum thickness of approximately 900 feet to 1,150 feet. Two wells within the 2-mile radius of the facility are completed in the Bigford Formation. The Bigford is not known to yield water suitable for domestic or irrigation purposes in the Laredo area, but yields small to moderate quantities of fresh to slightly saline water (<50 gpm to 500 gpm) in areas to the north and west. Based on geophysical logs the top of the Bigford occurs between 1,200 feet and 2,222 feet; reaching thicknesses of 500 feet to 900 feet.

The Carrizo Sand occurs beneath the Bigford at a depth of between 2,200 feet and 3,200 feet and is an important groundwater resource for counties north and east of Webb County. In Webb County, most wells completed in the Carrizo Sand yield low quantities of poor quality ground water and none are known to produce water suitable for domestic or irrigation use.

The City of Laredo currently obtains its water supply from the Rio Grande River.

SECTION B SUBSURFACE INVESTIGATION REPORT

1.0 INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) Municipal Solid Waste Management Regulations (MSWMR) require that the owner or operator of a municipal solid waste facility that stores, processes, or disposes of municipal waste in landfills submit a Subsurface Investigation Report as part of the Geology Report, Part III, Attachment 4, as part of a Permit Amendment Application submittal package. The Subsurface Investigation Report was prepared and signed by a licensed engineer, as required by the Texas Engineering Practice Act.

2.0 SUBSURFACE BORINGS

A total of 52 soil and rock borings have been performed at this site since 1983 for the purpose of defining subsurface stratigraphy. A brief description of the various borings programs is detailed below.

- Frank Bryant & Associates, Inc. (Bryant), 1983 - Completed 22 borings as part of a geotechnical investigation.
- Huntingdon Engineering & Environmental (Huntingdon), 1994 - Completed 12 borings as part of a groundwater characterization study.
- City of Laredo, Engineering Department, 1996 - Completed 10 borings as part of the installation of 10 groundwater monitoring wells.
- Rust Environment & Infrastructure (REI), 1997 - Completed 4 soil borings as part of a limited hydrogeological investigation to provide additional subsurface information.
- City of Laredo, Engineering Department, 1997 - Completed 4 borings as part of the installation of 4 additional groundwater monitoring wells.

The location of the borings is shown on Attachment 4-6. The depths and elevations of the layers encountered in the borings, piezometers, and monitoring wells are found in Table 4. Each of the borings logs are included in Appendix D.

The boring logs detail the materials encountered, provide a columnar section, list the classification of soil materials according to the Unified Soil Classification System (USCS), and list the color. All boring logs contain the elevation, allowing determination of the contact elevation between the soil and rock layers. The degree of compaction and moisture content are included, as observed by the field technician logging the borehole. A key explaining the symbols used on the boring logs and classification terminology for soil type, consistency, and structure is included with the boring logs.

3.0 SOIL BORING PROGRAM

3.1 PROGRAM APPROVAL

A total of five soil boring programs have been completed at the Laredo facility.

The first boring program was performed by Frank G. Bryant & Associates, Inc. in September 1983. The borings were conducted as part of a geotechnical investigation in which 22 core borings ranging in depth from 49.5 feet to 51.0 feet and 4 auger borings, each drilled to 40.0 feet were performed. The Bryant Geotechnical report is found in Appendix B.

The second boring program was carried out as part of a primary groundwater characterization study performed by Huntingdon in October 1994. The scope of work for the study was defined in a work plan prepared by Huntingdon and approved by the TNRCC in October 1993 and consisted of 12 borings ranging in depth from 30 feet to 197 feet. The borings were completed as piezometers to obtain water-level measurements and perform aquifer testing.

A third series of borings were completed at the site by the City of Laredo Engineering Department as part of the installation of 10 ground water monitoring wells.

The fourth boring program was conducted by REI which had been contracted to perform engineering and hydrogeologic services for the Laredo facility in support of an amendment to municipal solid waste Permit MSW-1693. Prior to initiation of this permit amendment, previous soil/rock borings

performed at the facility were tabulated and compared to the TNRCC requirements for number and depth of borings and required information for a facility of this size. In developing this boring plan, the lithologic and potentiometric data from the previous studies were compiled into a single data set from which stratigraphic cross sections were constructed and discussed with TNRCC staff.

As a result, four additional soil/rock borings were proposed for completion, for the purpose of further defining soil/rock stratigraphy and to obtain additional geotechnical test samples. The boring program was also conducted to penetrate the uppermost aquifer, Layer II, to determine the existence of an aquiclude at its lower boundary and underlying hydraulically interconnected aquifers.

This proposed soil boring plan was reviewed and approved by the TNRCC on March 18, 1997. The TNRCC boring plan approval letter is located in Appendix E. Four borings, P-13, P-14, P-15, and B-23 were completed from April 23, 1997 through May 1, 1997.

A fifth soil boring program was carried out as part of the installation of 4 ground water monitoring wells in accordance with the final revisions to the ground water monitoring system.

3.2 NEW SOIL BORING PROGRAM

The following section describes the field activities performed for a limited hydrogeological investigation at the Laredo facility April 22, 1997 through May 2, 1997. A summary of the drilling method, logging/sampling technique, and abandonment is detailed below.

Prior to this investigation, only two borings (B-12 and MW-2) had been drilled into the Layer IV lower sandstone unit, and information was inconclusive as to whether Layer II and IV sandstone units were hydraulically interconnected or if the Layer III shale unit was acting as an aquiclude between the upper and lower sandstone units. As wet rotary wash drilling methods were used previously, it was also uncertain if the lower unit was water bearing.

An REI hydrogeologist and the drilling team of Jones Environmental Drilling, Inc. (JEDI), Corpus Christi, Texas, began in April 22, 1997 to conduct the hydrogeological investigation at the Laredo facility. Air rotary drilling methods were utilized with a Failing 35 drill rig with continuous sampling using a diamond rock coring bit and 10-foot core barrel to complete the following :

- Boring P-13 was located along the western boundary of the northwestern portion of the facility near monitoring well MW-2. At this location, Layer III appeared to be the thinnest in the boring logs and cross sections. Boring P-13 penetrated Layers I, II, and III and was advanced into the top of Layer IV. The purpose of P-13 was to penetrate the Layer II water-bearing sandstone and Layer III advancing into the Layer IV lower sandstone to determine if Layer IV was water-bearing, and if so, to determine if it is hydraulically interconnected to the Layer II upper sandstone.
- Boring P-14 was located southeast of P-13, across the facility next to MW-5 at the southern boundary near the southeastern corner of the property. The previous boring logs indicated the beds dipped and thickened to the southeast. The purpose of this boring was to determine if Layers II, III, and IV were continuous across the property and if Layers II and IV were hydraulically separated by the Layer III aquiclude. The lithologic descriptions of the material are similar to those found in previous borings including boring P-13 with the exception that the beds are thicker and deeper. Layer I was encountered from the surface to 53 feet. Layer II was encountered from 53 feet to 113 feet deep. The Layer III Aquiclude Layer was encountered from 113 feet to 143.8 feet and found to be dry and hard. The Layer IV lower sandstone was encountered from 143.8 feet to 157 feet at which point the boring was terminated. The Layer IV Sandstone was again found to be very hard and dry. Permission was again obtained from the TNRCC to not install a piezometer nor to perform communication testing since no water was found in the lower sandstone unit.
- Boring P-15 was drilled for the purpose of obtaining geotechnical samples for information to aid in engineering and construction of future cells. P-15, located near MW-7 was drilled to a depth of 55 feet with Layer II being encountered at 32.3 feet to 53.1 feet. Layer III was encountered from 53.1 feet to the termination depth of 55 feet.

- Boring B-23 was drilled near the center of the facility. The purpose of this boring was to obtain additional geotechnical samples and stratigraphic information relative to material located 30 feet below the proposed base grades. Layer II was encountered in the B-23 boring from 33 feet to 108.2 feet. The top of Layer III was encountered at 108.2 feet to termination depth of 110 feet.

3.3 INTERPRETATION OF SUBSURFACE STRATIGRAPHY

Results of the boring program demonstrate that the stratigraphy at the facility is consistent with published geologic information, as referenced in Section E, and with previous studies performed at the facility. For convenience, the stratigraphy at the site has been divided into four layers. Table 2 describes the nomenclature used to describe each major layer encountered in borings at the site. Layer I is the surficial unit consisting of a tan to brown, silty to sandy clay occasionally covered by silty sand and gravel alluvium. The Layer I Clay was missing in boring P-1. The silty sand was encountered in 5 of the borings ranging from 3 feet to 23 feet in thickness. Layer II is the upper shaly sandstone encountered in all the borings. This Layer II Sandstone is greenish-gray, micaceous, glaconitic, with scattered fossils, and contains occasional highly cemented calcareous layers. A water-bearing zone has been identified in this unit. Layer III consist of a shale present beneath the Layer II Sandstone and is believed to act as an aquiclude between Layer II and IV. The Layer III Shale is greenish-gray to light gray in color and contains scattered fossils. The Layer III Shale has been encountered in P-1, P-12, P-13, P-14, B-23, MW-2, MW-3, MW-4, MW-5, and MW- 9. Layer IV, the lower sandstone unit, has been encountered in borings P-12, MW-2, P-13, P-14, P-15, and B-23. P-13 demonstrates that the Layer III material is acting as an aquiclude at the base of the upper water bearing sandstone Layer II, forming a hydraulic barrier between Layer II and Layer IV at this location. Layer III was found to be a very dense claystone moist near the top and dry at its base.

Boring P-14 demonstrates that the beds are continuous, dipping, and thickening to the southeast across the facility with similar hydrogeologic characteristics. Layer III appears to be functioning as an aquiclude across the facility as Layer IV is dry and non-water bearing in this portion of facility.

The boring logs do not indicate significant differences in thickness of Layer I across the facility. Layer II is 40 feet in thickness and Layer III is 7 feet in thickness at the P-13 location near the northwestern corner of the facility. The borehole log for P-14, located across the site from MW-2 and near the southeastern corner, indicates that Layer II is approximately 63 feet thick and Layer III is 30.8 feet in thickness. The thickness of Layer II and Layer III is 77 feet and 30 feet respectively for P-12 located near the center of the eastern portion of the facility. The borehole logs indicate that Layer II and Layer III dip and thicken to the southeast as do most beds in the southwest and the lower Gulf Coast of Texas.

Seven new cross sections (A-A' through G-G') were developed for the facility (Part III, Attachments 4-7 through 4-13) to supplement the cross-sections prepared in 1994 by Huntingdon. The new cross-sections include recently installed monitoring wells and the 4 additional borings completed in April 1997.

The cross sections coincide with previous work and show the geologic units to be continuous across the facility. The cross sections show Layers II through IV are encountered at varying depths across the facility.

SECTION C GEOTECHNICAL REPORT

1.0 INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) Municipal Solid Waste Management Regulations (MSWMR) require that the owner or operator of a municipal solid waste facility that stores, processes, or disposes of municipal waste in landfills submit a Geotechnical Investigation Report as part of the Geology Report, Part III, Attachment 4 as part of a Permit Amendment Application submittal package. The Geotechnical Investigation Report was prepared and signed by a licensed engineer, as required by the Texas Engineering Practice Act.

2.0 SOIL BORING PROGRAM

Subsurface conditions at the Laredo facility have been defined by a total of 52 soil and rock borings as part of geotechnical and a hydrogeological investigations and monitoring well installation completed at various times since 1983. The results of the borings show that the dominant material at the facility is sandstone and clay of the upper Laredo formation.

3.0 ENGINEERING TESTING PROGRAM

A geotechnical investigation was performed by Frank G. Bryant & Associates and initiated on September 6, 1983. The report is included in Appendix B. Twenty-two core borings and 4 auger borings were completed for the purpose of providing geotechnical information on the facility to determine the suitability of the facility for a sanitary landfill operation. The core borings ranged in depth from 49.5 feet to 51.0 feet. Four auger borings were completed also, each to 40 feet. The 1983 Boring Program was conducted to:

- Determine subsurface strata at the facility
- Obtain samples and cores of subsurface materials for laboratory analysis
- Investigate existing conditions of subsurface materials by pocket penetrometer tests and field penetration tests

- Investigate groundwater conditions at the facility
- Investigate the permeability of subsurface materials by field permeability tests

The 1983 samples and cores of subsurface materials were analyzed in the laboratory by:

- Visual examination and classification
- Atterberg Limits Tests
- Unit Dry Weight and Moisture Content
- Falling Head Permeability Tests
- Unconfined Compression Tests
- Minus 200 mesh Sieve Analysis

Results of the laboratory tests are found in Table 5 of this report. Pocket penetrometer tests were performed on all undisturbed samples as well as standard penetration tests. Results of these tests are found on the right-hand side of the boring logs with core recoveries and rock quality designations (rqd). Constant head field permeability tests were conducted within boreholes B-1, B-4, B-6, B-8, B-10, B-12, B-13, B-15, B-16, B-19, B-20, and B-21. Results of these tests are included in Table 5 and the Bryant report in Appendix B.

During the most recent subsurface investigation by REI (1997), additional geotechnical samples were taken for geotechnical laboratory analysis from 4 additional borings. These samples were taken primarily to obtain additional geotechnical information such as hydraulic conductivity and material strength at depth. Table 6 presents a Summary of Engineering Test Results performed on undisturbed samples of soil and rock from the 1997 investigation. The following types of tests were performed:

1. Each sidewall layer (Layer I & II)

- Atterberg Limits-ASTM D4318 in sidewall
- Moisture Content-ASTM D2216

- Unconfined Compression-ASTM D2166
- Sieve Analysis-ASTM D422

2. Each Floor Layer (Layer II)

- Vertical Permeability-ASTM D5084
- Consolidation-ASTM D2435

3. Aquiclude (Layer III)

- Atterberg Limits-ASTM D4318 in sidewall
- Moisture Content-ASTM D2216
- Vertical Permeability-ASTM D5084

4. Layer IV

- Atterberg Limits-ASTM D4318 in sidewall
- Moisture Content-ASTM D2216
- Unconfined Compression-ASTM D2166
- Sieve Analysis-ASTM D422

Each of the tests were performed in accordance with industry practice and recognized procedures.

4.0 SUITABILITY OF SITE SOILS AND STRATA

The results of the subsurface investigation and engineering test results demonstrate that the soil and rock strata at this facility are suitable for the intended purpose as a disposal facility. Results of the strength testing show that more than adequate foundation strength is available to support the ultimate loading on the underlying sands/sandstones, shales, and limestone concretions. Settlement of the foundation soils will be negligible when compared to the settlement of the waste, due to the high

bearing capacity of the foundation. The natural soil and rock materials that will be at grade when cell excavation is complete will provide excellent subgrade support for the constructed liner system.

SECTION D GROUNDWATER INVESTIGATION REPORT

1.0 INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) Municipal Solid Waste Management Regulations (MSWMR) require that the owner or operator of a municipal solid waste facility that stores, processes, or disposes of municipal waste in landfills submit a Ground water Investigation Report, Part III, Attachment 4, as part of a Permit Amendment Application submittal package.

2.0 SITE HYDROGEOLOGY

Ground water conditions at the Laredo facility have been described in a total of four reports prepared as part of three subsurface investigations and one ground water monitoring well installation effort. The ground water conditions were first studied by Frank G. Bryant and Associates, Inc. in September 1983. Twenty-two core borings were each drilled to 40.0 feet below existing ground surface and were advanced from 4.6 feet to 15.6 feet prior to using drilling fluid. The samples and holes were observed during and after completion of drilling operations to investigate ground water conditions at the facility. Four auger borings (A, B, C, and D) were drilled to further investigate ground water conditions at the facility. Observations of these borings indicated ground water was not present above the 40.0 feet level. Observations of several other borings, B-5, B-9, B-11, B-12, B-16, B-17, B-18, and B-22 indicated ground water was not present above depths ranging from 40.5 feet to 48.8 feet. Constant head field permeability tests were conducted within the open hole on subsurface materials for 12 of the borings.

The primary ground water investigation was conducted by Huntingdon Engineering & Environmental, from November 11 through December 3, 1993. The ground water conditions are described in the report of the investigation entitled *Final Report Groundwater Characterization Study,* October 1994. This report was approved by the TNRCC Municipal Solid Waste Division in a letter dated July 11, 1995. The descriptions are based upon the literature, quality analysis, observation of geologic features, and surface hydrologic features.

The installation of 10 ground water monitoring wells by the City of Laredo in August and September 1996 provided additional ground water level data points to further characterize ground water conditions at the facility.

An additional limited hydrogeological investigation was conducted by REI in April 1997 to determine the possible existence of a second water bearing unit and the effectiveness of a shale unit in acting as an aquiclude between the lower sandstone and the uppermost water bearing unit. The Huntingdon study had concluded that a water-bearing zone exists within an upper shaley sandstone unit. Beneath this unit is a shale unit which was concluded in the REI Subsurface Investigation Report, as included in Appendix C, to act as an aquiclude between the upper water-bearing sandstone and a lower shaley sandstone. The lower shaley sandstone unit was determined by this study to be a non-water bearing unit with very high unconfined compressive strength. Since these strata are composed almost entirely of hard compacted sandstone and shale with very low primary porosity and permeability, the probability of developing secondary porosity and permeability features is low.

The geologic framework discussed previously indicates that the surficial Layer I and a zone within the Layer II, upper shaley sandstone unit represent the only units characterized by porous media flow. The Layer III shale and Layer IV lower shaley sandstone units are lithified, very fined grained rocks that have very low primary porosity and permeability, and no development of secondary features such as fractures, joints, or solution cavities.

The uppermost water-bearing unit beneath the facility is the Layer II, shaley sandstone of the Laredo Formation. All 12 of the monitoring wells are monitoring this formation. Ground water elevations in the Layer II approved monitoring zone, as measured in January 1999 range from 423.15 feet MSL in Monitoring Well MW-6, near the southeastern corner of the facility, to 475.60 feet MSL in MW-4R1, near the southwestern corner of the facility. Table 7 in Part III, Attachment 4 summarizes initial and static ground water elevation data for all the monitoring wells, piezometers and soil borings as available. Table 2 in Part III, Attachment 5 summarizes quarterly ground water elevation data for all the monitoring wells completed at the facility, from the fourth quarter, 1996 through the first quarter, 1999.

2.1 HYDROSTRATIGRAPHIC UNITS

The final TNRCC approved Huntingdon ground water characterization study concluded that the Layer II unit within the Laredo Formation represents the uppermost water-bearing unit beneath the facility. Based on depths to the water bearing zones in piezometers and subsequent equilibrated water levels, unconfined to semiconfined flow conditions exist in Layer II. The ground water occurs near the base of the Layer II sandstone unit on top of the Layer III shale, which is believed to be acting as an aquiclude to downward movement of the ground water. The upper part of Layer II, which is typically a shaly sandstone, was unsaturated at all of the piezometer and boring locations. The water bearing portion of Layer II is found near its base and consists of fine to medium grained quartz sandstone. Please refer to Appendix A for all detailed information stated in this section. Layer III, described as a hard, dry shale is found to be acting as an aquiclude to vertical migration of the ground water perched above it in Layer II.

In order to characterize the facility, Huntingdon installed 12 piezometers P-1 through P-12 to develop data in the various Layers as shown on Part III, Attachment 4-6. Ground water was not consistently encountered in the surficial sands and clays of Layer I. Four deep piezometers were completed in the Layer II unit by Huntingdon, and the water-bearing zone was found to be under unconfined to semiconfined conditions. The 1997 REI subsurface investigation obtained core samples of Layer III. Laboratory analysis results of the samples for Layer III moisture content ranged from 13.3 to 22.6 percent with a vertical permeability of 5.7×10^{-9} cm/sec. Based on these results, observation of the Layer III cores, and the substantial thickness of the unsaturated Layer III unit, REI concluded the Layer III unit is preventing downward migration of groundwater and is acting as an aquiclude between Layers II and IV. It is concluded that Layer III would likely absorb water yet not yield significant quantities of ground water to wells or springs.

In the unlikely event that the liner system is breached, the most likely pathway for contaminant migration would be in the water-bearing portion of the Layer II sandstone to the east and southeast as described in items 6 and 9 of the hydrogeologic model described below.

3.0 CONCEPTUAL HYDROGEOLOGIC MODEL

A conceptual hydrogeologic model was developed for the facility on the basis of facility and regional geologic and hydrologic data. The following model was developed during the 1994 Huntingdon and 1997 REI study:

1. A sequence of interbedded sandstone and clay (Laredo Formation) dipping and thickening to the southeast underlies the facility. The formation is known to be from 600 feet to 700 feet thick in the region.
2. A surficial unit of clay and silty sand designated as Layer I is found to not contain ground water and is present above Layer II in thickness ranging from 0 feet to 36 feet. This material is believed to be alluvium on portions of the facility and contains some silt, sand, and gravel.
3. The upper-most water-bearing unit at the facility, referred to as the Upper Shaly Sandstone (Huntingdon 1994) and designated as Layer II, is a well cemented quartz sandstone with occasional highly cemented calcareous layers. The thickness of this unit ranged from 52 feet to 77 feet with the water-bearing zone occurring near its base. This water-bearing zone is the approved ground water monitoring zone for the facility and was determined to be under unconfined to semiconfined conditions.
4. Underlying Layer II is a shale unit known as a Shale (Huntingdon 1994) designated as Layer III, which was found to be very dry and extremely hard, with a very low permeability. This unit was concluded to be a barrier to vertical fluid migration and functioning as an aquiclude. The unit ranges in thickness from 7 feet in the northwestern portion of the facility to over 30 feet in the southeastern part of the facility.
5. Layer IV, known as the Lower Shaly Sandstone (Huntingdon 1994) is a very fine grained indurated sandstone found to be non-water bearing. The minimum thickness of the unit penetrated beneath the facility is 59 feet. This unit was found to not contain ground water and to be composed of low permeability material. It is concluded that Layer IV is not in communication with the upper-most water-bearing unit, Layer II.
6. The ground water flow is probably controlled by the regional stratigraphic southeasterly dip of the beds and flows from the northwest to the southeast and east of the facility. The groundwater

occurs near the base of Layer II and is interpreted as moving through this zone along the top of the more impermeable Layer III Shale from topographic highs to topographic lows. These flow directions are interpreted as being controlled by the Layer III surface.

7. The measured hydraulic vertical conductivity for Layer III was 5.7 x 10^{-9} cm/sec. Development of secondary porosity and hydraulic conductivity is limited within Layer III because significant and/or interconnected fractures or joint sets are apparently absent within Layer III.
8. Piezometric ground water levels indicated that Piezometer P-8 experienced the greatest fluctuation in ground water elevations ranging from a low of 433.87 feet MSL on March 29, 1994, to a high of 434.64 feet MSL on April 27, 1994. Piezometer P-1 experienced the least amount of change with a low of 433.11 feet MSL on March 29, 1994 to a high of 433.53 feet MSL on April 27, 1994. Rainfall data collected during the six month water-level study indicated that during periods of the highest rainfall, ground water elevations did not increase significantly. Rainfall is not a significant factor with respect to recharge of the water-bearing zone with recharge most likely occurring off-facility.
9. If leachate were to emanate from the base or sides of the disposal cells, the most likely migration pathway would be through the saturated lower portion of Layer II over the surface of the Layer III aquiclude. Movement would be downgradient to the east and southeast. Discharge via evapotranspiration or surface runoff could occur if and where Layer II intersects the land surface.

4.0 GROUND WATER MONITORING SYSTEM

This section summarizes the facility's ground water monitoring program being implemented to meet the requirements of 30 TAC §330.231 through §330.235 relating to Ground water Monitoring Systems.

The facility-specific ground water monitoring system, developed by the City of Laredo consists of a total of 12 monitoring wells screened primarily in the lower water-bearing portion of Layer II immediately above Layer III. Monitoring Wells MW-3R2, MW-4R1, and MW-12 serve as upgradient or background monitoring points. MW-1, MW-2, MW- 5, MW-6, MW-7, MW-8, MW-

9, MW-10, and MW-11 serve as down-gradient, point of compliance (POC) wells as shown on Part III, Attachment 5-4. The original ground water monitoring system design (GWMSD) was approved by the TNRCC in a letter dated July 11, 1995. The revised groundwater monitoring system design was approved by the TNRCC in a letter dated October 29, 1997. The installation of this system was certified in the March 1998 Monitoring Well Installation Report by Brent Christian, P.G. for the City of Laredo.

4.1 GROUNDWATER SAMPLING AND ANALYSIS PLAN

On October 9, 1993 the State of Texas promulgated regulations governing all aspects of municipal solid waste management (30 Texas Administrative Code, Chapter 330). Subchapter I, Section 330.223 requires that the owners or operators of Municipal Solid Waste Landfills (MSWLFs) prepare and submit a Ground Water Sampling and Analysis Plan (GWSAP) to the TNRCC. The GWSAP was prepared by the City of Laredo's Environmental Engineering Division, dated April 1996, and signed by Brent Christian, P.G., and Randall L. Kippenbrock, P.E. The purpose of the document was to satisfy the requirements of the above listed regulations as they pertain to the Laredo facility, and was approved by the TNRCC on June 21, 1996.

The facility GWSAP, as included in Part III, Attachment 11, deals with two major areas of ground water monitoring. The first part of the document provides information concerning the Detection Monitoring program which includes sampling and analysis methodologies, the establishment of background ground water quality, and detection monitoring procedures. The second portion of the document contains assessment monitoring and subsequent procedures.

All information pertaining to the certification of the ground water monitoring system and the site-specific GWSAP is provided in Part III, Attachment 11. Table 2 of Part III, Attachment 5 summarizes ground water elevation data from the facility groundwater monitoring system from the fourth quarter 1996 to the present.

4.2 GROUNDWATER QUALITY

Detailed procedures for groundwater sampling at the Laredo facility are listed in the GWSAP. The ground water monitoring wells were installed in September 1996 and December 1997 to form a detection monitoring system. Initial sampling will take place upon TNRCC approval of the well installation report which is expected during the third quarter of 1998.

SECTION E LIST OF REFERENCES

LIST OF REFERENCES

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12. BEG, University of Texas at Austin, 1976, Geologic Atlas of Texas, Laredo Sheet

SYSTEM	SERIES	GROUP	GEOLOGIC UNIT		APPROXIMATE THICKNESS (FT)		CHARACTER OF ROCKS		WATER-BEARING PROPERTIES	
Tertiary	Eocene	Claiborne	Yegua Formation		700-1,000+		Clay, silt with interbedded thin lignites and sandstones. Some minor beds of limestone and oyster shells are found.		Yields small quantities of slightly to moderately saline water to wells in the outcrop area.	
			Laredo Formation	Cook Mountain Formation	600-700	400-500	Glauconitic sand and clay. Some gypsiferous clay and impure limestones.	Fossiliferous clay and shale. Some interbedded sandstone and limestone.	Yields small to moderate quantities of fresh to moderately saline water to wells.	Yields small quantities of slightly to moderately saline water to wells.
				Sparta Sand		40-200		Medium to fine sand. Some interbedded clay.		Yields small to moderate quantities of fresh to moderately saline water to wells.
			El Pico Clay	Weches Formation	700-1,500	50-200	Clay with interbedded sandstones, claystones, and lignite coal lenses.	Fossiliferous, glauconitic shale and sand.	Yields small quantities of slightly to moderately saline water to wells.	Not known to yield water to wells.
				Queen City Sand		500-1,400		Marine, medium to fine sand with interbedded clay and shale.		Yields small to moderate quantities of fresh to slightly saline water to wells.
			Bigford Formation	Reklaw Formation	200-900	200-400	Sands with interbedded silts and shales. Plant remains are abundant.	Clay with interbedded glauconitic sand.	Yields small to moderate quantities of fresh to very saline water to wells.	Yields small quantities of slightly to moderately saline water to wells in or near the outcrop.
			Carrizo Sand		150-1,200		Coarse to fine sand, massive, cross-bedded with a few partings of carbonaceous clay.		Principal aquifer in the report area. Yields moderate to large quantities of fresh to slightly saline water to wells.	
		Wilcox			0-2,800		Interbedded sand, clay, and silt with discontinuous beds of lignite. The shale and clay sometimes contain gypsum.		Yields small to moderate quantities of fresh to slightly saline water to wells in the northern and western parts of the report area.	

Stratigraphic Units and Their Water-bearing Properties

Source: Texas Water Development Board. Modified from "Ground-Water Resources of the Carrizo Aquifer in the Winter Garden Area of Texas", Vol. 2, 1977, 1979.

Yield, in gallons per minute

: small, less than 50; moderate, 50 to 500; large, over 500.

RUST ENVIRONMENT & INFRASTRUCTURE

REGIONAL STRATIGRAPHIC UNITS FOR WEBB COUNTY

TABLE 1

MAY 1998

ATTACHMENT 4
TABLE 4
SUMMARY OF BORING INFORMATION
LAREDO SANITARY LANDFILL

Well/ Boring/ Piezometer	northing local scale	easting local scale	Ground elev.	Total depth (depth)	Total depth (elev.)	Depth below deepest grade(1)	Top of Layer II (depth)	Top of Layer II (elev)	layer II thickness(2)	Top of Layer III (depth)	Top of Layer III (elev)	Layer III thickness (2)	Top of Layer IV (depth)	Top of Layer IV (elev)	Screened Interval								borings to 415' or lower 30 ft. BDE(3)	borings to <440' >415' 5 - 30 ft. BDE	borings to <445' - >440' 0 - 5 ft. BDE	borings to higher than 445'
															T. filter pack (depth)	T. filter pack (elev)	Base F. pack (depth)	Base F. pack (elev)	Top Screen (depth)	Top Screen (elev)	Base Screen (depth)	Base Screen (elev)				
P-1	4370	280	477.60	95.00	382.60	62.40	23	454.6	52.0	75	402.60	>20	--	--	--	--	--	--	--	--	--	--	X			
P-2	4020	1720	470.80	30.00	440.80	4.20	28	442.8	>2	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
P-3	4020	2870	479.90	30.00	449.90	-4.90	28	451.9	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-4	4050	3610	471.80	100.00	371.80	73.20	36	435.8	>64	--	--	--	--	--	--	--	--	--	--	--	--	--	X			
P-5	3510	3580	475.20	32.00	443.20	1.80	31	444.2	>1	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
P-6	2110	3635	485.70	30.00	455.70	-10.70	28	457.7	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-7	890	3620	491.00	32.00	459.00	-14.00	29	462.0	>3	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-8	1200	2200	512.90	90.00	422.90	22.10	29	483.9	>61	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
P-9	1500	660	540.20	31.00	509.20	-64.20	29	511.2	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-10	2750	575	502.20	30.00	472.20	-27.20	17	485.2	>13	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-11	2780	1440	511.00	35.00	476.00	-31.00	32	479.0	>3	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-12	2815	2625	490.80	197.00	293.80	151.20	31	459.8	77.0	108	382.80	30	138	352.80	--	--	--	--	--	--	--	--	X			
PZ-13	3800	360	486.00	80.00	406.00	39.00	13.5	472.5	43.5	57	429.00	7	64	422.00	--	--	--	--	--	--	--	--	X			
PZ-14	1100	2790	523.29	157.00	366.29	78.71	31	492.3	82	113	410.29	31	144	379.29	--	--	--	--	--	--	--	--	X			
PZ-15	2310	3580	485.42	55.00	430.42	14.58	32.5	452.9	>22.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
MW-1	4040	1625	470.08	63.29	406.79	38.21	29	441.1	>34.29	--	--	--	--	--	40.08	429.28	63.29	406.79	53.29	416.79	63.29	406.79	X			
MW-2	3780	360	486.16	80.00	406.16	38.84	14	472.2	44.0	58	428.16	14	72	414.16	46.50	439.66	59.54	426.62	49.54	436.62	59.54	426.62	X			
MW-3	1980	580	520.80	104.83	415.97	29.03	44	476.8	40.0	84	436.80	>20.8	--	--	Decommissioned									X		
MW-3R2	2280	580	502.87	71.00	431.87	13.13	23	479.9	47	70	432.87		--	--	59.00	443.87	71.00	431.87	61.00	441.87	71.00	431.87		X		
MW-4	1330	1500	516.32	109.00	407.32	37.68	21	495.3	39.0	60	456.32	>49	--	--	Decommissioned								X			
MW-4R1	1410	1310	526.42	64.00	462.42	-17.42	27	499.4	approx 50	approx 37	469.42		--	--	52.00	474.42	64.00	462.42	54.00	472.42	64.00	462.42				X
MW-5	1100	2770	523.29	113.97	409.32	35.68	53	470.3	59.0	112	411.29	>2	--	--	95.00	428.29	113.75	409.54	103.75	419.54	113.75	409.54	X			
MW-6	1485	3575	488.38	76.71	411.67	33.33	36	452.4	>41	--	--	--	--	--	65.00	423.38	76.71	411.67	66.71	421.67	76.71	411.67	X			
MW-7	2280	3580	485.42	70.83	414.59	30.41	53	432.4	>18	--	--	--	--	--	58.00	427.42	70.83	414.59	60.83	424.59	70.83	414.59	X			
MW-8	2860	3580	480.73	68.42	412.31	32.69	35	445.7	>33.5	--	--	--	--	--	56.33	424.40	68.42	412.31	58.42	422.31	68.42	412.31	X			
MW-9	3620	3575	476.63	68.92	407.71	37.29	39	437.6	>30	--	--	--	--	--	56.50	420.13	68.92	407.71	58.33	418.30	68.92	407.71	X			
MW-10	4040	2780	477.42	63.46	413.96	31.04	39	438.4	>24.5	--	--	--	--	--	51.25	426.17	63.46	413.96	53.46	423.96	63.46	413.96	X			
MW-11	870	3540	492.42	70.00	422.42	22.58	46	446.4	>24	--	--	--	--	--	67.00	425.42	81.00	411.42	71.00	421.42	81.00	411.42		X		
MW-12	1220	1910	516.43	73.50	442.93	2.07	20	496.4	53.0	73	443.43	>1.5	--	--	61.25	455.18	73.50	442.93	63.50	452.93	73.50	442.93			X	
B-1	1680	1155	521.30	49.5	471.80	-26.80	9.5	511.8	>40	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-2	1680	1785	504.26	50.5	453.76	-8.76	12.5	491.8	>38	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-3	1680	2220	512.72	50	462.72	+17.72	13.5	499.2	>36.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-4	1680	3060	494.86	49.5	445.36	-0.36	14.5	480.4	>35	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-5	2150	3055	488.73	50	438.73	6.27	10.5	478.2	>39.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-6	2640	3050	480.41	50	430.41	14.59	7.5	472.9	>42.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-7	3110	3050	476.02	50.5	425.52	19.48	11.25	464.8	>39.25	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-8	3600	2930	469.94	51	418.94	26.06	10	459.9	>41	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-9	3600	2420	486.00	50.5	435.50	9.50	7.5	478.5	>43	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-10	3110	2420	497.32	50.5	446.82	-1.82	20.5	476.8	>30	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-11	2640	2420	496.49	50	446.49	-1.49	15.5	481.0	>34.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-12	2150	2430	492.54	50	442.54	2.46	3.5	489.0	>46.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-13	1230	2540	526.34	50.5	475.84	-30.84	31.4	494.9	>19.1	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-14	2010	980	532.01	50	482.01	-37.01	23	509.0	>27	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-15	2150	1470	523.34	50	473.34	-28.34	18.5	504.8	>31.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-16	2630	1590	510.72	50.5	460.22	-15.22	0	510.7	>50.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-17	2640	850	489.97	49.5	440.47	4.53	4	486.0	>45.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-18	3110	1780	500.77	50	450.77	-5.77	3.5	497.3	>46.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-19	3110	1160	491.91	50	441.91	3.09	14.5	477.4	>35.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-20	3600	1680	492.94	50.5	442.44	2.56	34	458.9	>16.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-21	3600	1070	476.55	50	426.55	18.45	0	476.6	>50	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-22	3200	580	496.86	50	446.86	-1.86	1	495.9	>49	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-23	2320	1720	511.40	110	401.40	43.60	33	478.4	75	108	403.40	>2	--	--	--	--	--	--	--	--	--	--	X			
																							Total number of borings to specificed depths	15	11	7	19
																							Total borings = 52			

(1) negative (-) sign means a depth above deepest excavation
(2) greater than (>) sign means the thickness is at least that deep but the boring didn't fully penetrate the layer
(3) BDE = Below Deepest Excavation
(elev) = elevation in ft above mean sea level
(depth) = depth below existing grade in feet

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ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

Boring No. & GS Elev.	Sample Depth ft.	Sample Elev. ft.	(1) LL, %	(2) PI, %	(3) Percent of Soil Finer Than Sieve #4	#40	#200	(4) Water Content, %	(5) Unconfined Compressive Strength, tsf	(6 & 7) Description & Classification
B-2 504.26	0.5	503.8	41	23	79	73	46	7.6		Brown to tan sandy CLAY. CL
	5.0	499.3	58	30	100	99	97	15.6		Brown to tan CLAY. CH
	10.0	494.3	71	42	99	94	93	19.1		Brown to tan CLAY. CH
B-3 512.72	21.5	491.2							20.6	Light greenish gray and tan shaly SANDSTONE.
	30.5	482.2							31.2	Gray shaly SANDSTONE.
	44.5	468.2							88.1	Light gray SANDSTONE.
B-6 480.41	0.5	479.9	41	23	79	73	46	7.6		Brown clayey SAND. SC
	5.0	475.4	58	30	100	99	97	15.6		Maroon sandy SHALE.
	7.5	472.9	71	42	99	94	93	19.1		Maroon sandy SHALE.
	9.5	470.9							4.2	Light greenish gray and tan shaly SANDSTONE.
	28.5	451.9							15.0	Dark greenish gray shaly SANDSTONE.
	41.5	438.9							108.8	Greenish gray SANDSTONE.
B-8 469.94	5.0	464.9	49	30	88	80	57	11.3		Brown silty CLAY. CL
	11.0	458.9	41	17	100	99	62	13.0		Greenish gray tan and brown shaly SANDSTONE.
B-10 497.32	6.0	491.3	71	40				25.2		Greenish gray tan and brown shaly SANDSTONE.

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

561

Boring No. & GS Elev.	Sample Depth ft.	Sample Elev. ft.	(1) LL, %	(2) PI, %	(3) Percent of Soil Finer Than Sieve #4	#40	#200	(4) Water Content, %	(5) Unconfined Compressive Strength, tsf	(6 & 7) Description & Classification
B-19 491.91	22.5	469.4			100	100	39			Light greenish gray and tan shaly SANDSTONE.
	31.5	460.4			99	98	43			Dark greenish gray shaly SANDSTONE.
	45.5	446.4			100	100	16			Greenish gray SANDSTONE.
B-20 492.94	8.5	484.4	66	35				20.8		Light greenish gray sandy SHALE.
	35.0	457.9			100	99	40			Light greenish gray and tan shaly SANDSTONE.
	39.5	453.4			100	99	46			Light greenish gray and tan shaly SANDSTONE.
	46.0	446.9			100	99	32			Dark greenish gray shaly SANDSTONE.
B-21 476.55	5.5	471.1			99	97	49			Tan & light greenish gray shaly SANDSTONE.

NOTES: (1) ASTM D 423-72 (3) ASTM D 422-72 (5) ASTM D 2938-79 (7) ASTM D 2487-75
(2) ASTM D 424-71 (4) ASTM D 2216-80 (6) ASTM D 2488-75

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

562

Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-2	0.0-10.5*	123.3	13.3	109	1.99×10^{-8}	Brown to tan sandy CLAY. CL
B-3	4.0- 5.0	126.5	19.1	106	5.22×10^{-8}	Greenish gray sandy SHALE.
B-4	4.0- 4.5	125.1	22.4	102	2.27×10^{-8}	Maroon sandy SHALE.
B-6	4.5- 5.5	128.5	14.9	112	6.60×10^{-8}	Maroon sandy SHALE.
B-8	0.0- 1.5	109.3	13.7	96	1.54×10^{-7}	Brown silty CLAY. CL
	10.0-11.5	140.2	11.1	126	4.13×10^{-8}	Greenish gray, tan and brown shaly SANDSTONE.
B-13	4.0- 5.0	123.3	17.5	105	7.32×10^{-8}	Maroon sandy SHALE.
B-14	9.0-10.0	136.6	16.6	117	1.53×10^{-7}	Light greenish gray and tan sandy SHALE.
B-16	9.0-10.0	124.9	13.3	110	1.40×10^{-7}	Greenish gray and tan shaly SANDSTONE.
B-17	0.0- 1.0	124.1	13.5	109	1.01×10^{-7}	Brown sandy CLAY. CL

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-18	4.5- 5.5	128.9	16.9	110	1.43×10^{-7}	Light greenish gray and tan SANDSTONE.
B-22	3.0- 4.0	125.5	16.1	110	2.51×10^{-8}	Greenish gray and tan shaly SANDSTONE.

* Combined from three samples, depths 0.5, 5.0 and 10.0 ft., remolded and recompacted.

Job Name: Laredo Landfill

Job Number: 06-22497

ATTACHMENT 4 - TABLE 6
SUMMARY OF ENGINEERING TEST RESULTS
1997 LABORATORY TESTING RESULTS
CITY OF LAREDO SANITARY LANDFILL

Date: 30 October 1997

5644

SAMPLE NO./LAYERS	DESCRIPTION	MOISTURE CONTENT (%)	ATTERBERG LIMITS		HYDRO METER	% PASSING #200 SIEVE	PERMEABILITY (CM/SEC)		UNCONFINED COMPRESSIVE STRENGTH (TSF)
			LL (%)	PI			VERTICAL	HORIZONTAL	
P-14 I - 42.5' - 44'	Dark gray sandstone	8.6	34	18	—	6.8	—		56.4
P-14 II - 83' - 85'	Dark gray sandstone	7.6	30	14	—	3.1	8.65×10^{-5}	—	*
P-14 III - 117.1'-117.5	Gray black claystone	13.3	—	—	—	—	*	—	—
P-14 III - 121.2' - 122.4'	Dark greenish gray claystone	15.3	49	30		41.8	—		*
P-14 III - 134.7 - 135.0	Dark greenish gray claystone	22.6	—	—	—		5.7×10^{-9}	*	*
P-14 IV - 144.5' - 145'	Light gray sandstone	8.4	35	19	—	11.1	*		471
P-15 I - 20.5' - 21.5'	Reddish brown clay	10.0	52	33				*	21.7
P-15 II - 45' - 46.9'	Dark gray sandstone	11.5	32	16	—	4.3	4.88×10^{-8}	—	75
B-23 I - 0' - 19'	Light brown sandy silty clay	14.1	26	11	—	27.8	—	*	52.8
B-23 II - 48.1' - 65.6'	Dark gray sandstone	7.2	25	10	—	0.8	—	*	123
B-23 II - 79.7' - 81.9'	Dark gray sandstone	—	27	12	—	5.8	1.45×10^{-6}	—	—

*Insufficent Sample

JACK H. HOLT & ASSOCIATES, INC.
2220 BARTON SKYWAY
AUSTIN, TEXAS 78704

SYSTEM	SERIES	GROUP	GEOLOGIC UNIT		APPROXIMATE THICKNESS (FT)		CHARACTER OF ROCKS		WATER-BEARING PROPERTIES	
Tertiary	Eocene	Claiborne	Yegua Formation		700-1,000+		Clay, silt with interbedded thin lignites and sandstones. Some minor beds of limestone and oyster shells are found.		Yields small quantities of slightly to moderately saline water to wells in the outcrop area.	
			Laredo Formation	Cook Mountain Formation	600-700	400-500	Glauconitic sand and clay. Some gypsiferous clay and impure limestones.	Fossiliferous clay and shale. Some interbedded sandstone and limestone.	Yields small to moderate quantities of fresh to moderately saline water to wells.	Yields small quantities of slightly to moderately saline water to wells.
				Sparta Sand		40-200		Medium to fine sand. Some interbedded clay.		Yields small to moderate quantities of fresh to moderately saline water to wells.
			El Pico Clay	Weches Formation	700-1,500	50-200	Clay with interbedded sandstones, claystones, and lignite coal lenses.	Fossiliferous, glauconitic shale and sand.	Yields small quantities of slightly to moderately saline water to wells.	Not known to yield water to wells.
				Queen City Sand		500-1,400		Marine, medium to fine sand with interbedded clay and shale.		Yields small to moderate quantities of fresh to slightly saline water to wells.
			Bigford Formation	Reklaw Formation	200-900	200-400	Sands with interbedded silts and shales. Plant remains are abundant.	Clay with interbedded glauconitic sand.	Yields small to moderate quantities of fresh to very saline water to wells.	Yields small quantities of slightly to moderately saline water to wells in or near the outcrop.
			Carrizo Sand		150-1,200		Coarse to fine sand, massive, cross-bedded with a few partings of carbonaceous clay.		Principal aquifer in the report area. Yields moderate to large quantities of fresh to slightly saline water to wells.	
		Wilcox			0-2,800		Interbedded sand, clay, and silt with discontinuous beds of lignite. The shale and clay sometimes contain gypsum.		Yields small to moderate quantities of fresh to slightly saline water to wells in the northern and western parts of the report area.	

Stratigraphic Units and Their Water-bearing Properties

Source: Texas Water Development Board. Modified from "Ground-Water Resources of the Carrizo Aquifer in the Winter Garden Area of Texas", Vol. 2, 1977, 1979.

Yield, in gallons per minute

: small, less than 50; moderate, 50 to 500; large, over 500.

RUST ENVIRONMENT & INFRASTRUCTURE

REGIONAL STRATIGRAPHIC UNITS FOR WEBB COUNTY

TABLE 1

MAY 1998

ATTACMENT 4 - TABLE 2
SITE LITHOLOGIC NOMENCLATURE
CITY OF LAREDO SANITARY LANDFILL
WEBB COUNTY

Layer Name	Perdominant Lithology	Comments
Layer I	Surficial sand and clay to sandy clay layer	Surficial unit
Layer II	Upper shaley sand / sandstone	Ground-water monitorig layer
Layer III	Shale layer	Aquiclude
Layer IV	Lower shaley sandstone	Non-water bearing unit

ATTACHMENT 4 - TABLE 3
SUMMARY OF REGIONAL WATER WELL INFORMATION
CITY OF LAREDO SANITARY LANDFILL
WEBB COUNTY

Map #	State I.D.	Owner	Type	Total Depth (ft)	Date	Formation
1	85-29-802	Isauro Martinez	Stock	300	00/00/00	Laredo
2	85-29-9A	Jose Barrera	Domestic	300	11/11/82	Laredo
3	85-37-2E	AE Guajardo, Jr.	Livestock	500	04/06/66	Laredo
3	85-37-2E	Ofelia Gonzalez, Lot 129	Domestic	400	06/30/82	Laredo
3	85-37-2E	Killam Ranch	Unknown	211	01/20/73	Laredo
4	85-37-2Q	Jerry Woods	Domestic	440	03/04/84	Laredo
5	85-37-201	WE Smith	Dom./Stk.	250	00/00/30	Laredo
6	85-37-2C	Jesse & Hector Martinez	Industrial	300	05/10/83	Laredo
6	85-37-2C	Border Irrigation Supply	Domestic	280	05/03/84	Laredo
6	85-37-2F	Laredo Packaging Co.	Industrial	355	08/04/67	Laredo
6	85-37-2F	AR Sandiez	Industrial	300	01/20/75	Laredo
7	85-37-2M	Enrique Flores	Domestic	280	05/01/84	Laredo
7	85-37-2M	Guadelupe Medellin Lot 60	Domestic	340	06/25/82	Laredo
7	85-37-2M	Maria Inocencio Lot 98	Domestic	360	07/08/82	Laredo
8	85-37-2B	Andrew Gault	Cattle	370	07/08/82	Laredo
9	85-37-2C	Antonio Cavazos	Livestock	390	01/21/63	Laredo
10	85-37-2	Juan Bottelo	Domestic	320	09/21/85	Laredo
11	85-37-2N	Rene Garcia	Dom./Ind.	340	09/01/82	Laredo
11	85-37-2N	DE Beard Trucking	Domestic	300	07/12/82	Laredo
11	85-37-2N	EG Ranch LTD	Domestic	176	11/13/84	Laredo
12	85-37-2P	Missing Record				
13	85-37-3	Mario Salinas	Domestic	700	07/14/87	El Pico
14	85-37-2	Tony Lerma	Domestic	300	07/09/86	Laredo
15	85-37-2	Edwin Ward	Domestic	710	07/24/86	El Pico

ATTACHMENT 4 - TABLE 3
SUMMARY OF REGIONAL WATER WELL INFORMATION
CITY OF LAREDO SANITARY LANDFILL
WEBB COUNTY

Map #	State I.D.	Owner	Type	Total Depth (ft)	Date	Formation
15	85-37-2	Leticia Duran	Domestic	290	05/23/86	Laredo
16	85-37-2	McClellan (map, no log)	Unknown	Unknown	00/00/00	-
16	85-37-2	Air Weld (map, no log)	Unknown	Unknown	00/00/00	-
17	85-37-202	Bruni Est.	Stock	275	00/00/00	Laredo
18	85-37-3	Air Weld	Domestic	740	02/24/89	El Pico
18	85-37-3	Aramax Lumber Co.	Industrial	260	03/02/89	Laredo
19	85-37-3D	Laredo Investment Co.	Pub. Supply	1245	03/28/83	Bigford
19	85-37-3D	South Texas Services	Industrial	1305	04/08/84	Bigford
20	85-37-3F	Ernesto Ayala	Domestic	240	12/04/84	Laredo
20	85-37-3F	Arturo Molina	Domestic	225	02/18/84	Laredo
21	85-37-3A	Rodolfo Santos	House	250	07/20/66	Laredo
22	85-37-3E	Air Weld	Domestic	160	12/21/83	Laredo
23	85-37-3	Trevino Ranch	Domestic	1300	06/27/90	Bigford
24	85-37-3C	JM Villa Nueva	Domestic	325	07/00/00	Laredo
24	85-37-3C	Archie Jones	Domestic	300	07/28/82	Laredo
25	85-37-301	Rafael Garcia	Stock	230	00/00/59	Laredo
26	85-37-3B	Estell Reiss	Livestock	288	09/24/66	Laredo

Note: See Part I/II, Figure 4 for a map showing the wells on this table within one mile of the permit boundary. This listing represents wells found in a search of within approximately two miles of the permit boundary.

ATTACHMENT 4
TABLE 4
SUMMARY OF BORING INFORMATION
LAREDO SANITARY LANDFILL

Well/ Boring/ Piezometer	northing local scale	easting local scale	Ground elev.	Total depth (depth)	Total depth (elev.)	Depth below deepest grade(1)	Top of Layer II (depth)	Top of Layer II (elev)	layer II thickness(2)	Top of Layer III (depth)	Top of Layer III (elev)	Layer III thickness (2)	Top of Layer IV (depth)	Top of Layer IV (elev)	Screened Interval: T. filter pack (depth)	T. filter pack (elev)	Bom F. pack (depth)	Bom F. pack (elev)	Top Screen (depth)	Top Screen (elev)	Bom Screen (depth)	Bom Screen (elev)	borings to 415' or lower 30 ft. BDE(3)	borings to <440' >415' 5 - 30 ft. BDE	borings to <445' >440' 0 - 5 ft. BDE	borings to higher than 445'
P-1	4370	280	477.60	95.00	382.60	62.40	23	454.6	52.0	75	402.60	>20	--	--	--	--	--	--	--	--	--	--	X			
P-2	4020	1720	470.80	30.00	440.80	4.20	28	442.8	>2	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
P-3	4020	2870	479.90	30.00	449.90	-4.90	28	451.9	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-4	4050	3610	471.80	100.00	371.80	73.20	36	435.8	>64	--	--	--	--	--	--	--	--	--	--	--	--	--	X			
P-5	3510	3580	475.20	32.00	443.20	1.80	31	444.2	>1	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
P-6	2110	3635	485.70	30.00	455.70	-10.70	28	457.7	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-7	890	3620	491.00	32.00	459.00	-14.00	29	462.0	>3	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-8	1200	2200	512.90	90.00	422.90	22.10	29	483.9	>61	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
P-9	1500	660	540.20	31.00	509.20	-64.20	29	511.2	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-10	2750	575	502.20	30.00	472.20	-27.20	17	485.2	>13	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-11	2780	1460	511.00	35.00	476.00	-31.00	32	479.0	>3	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-12	2815	2625	490.80	197.00	293.80	151.20	31	459.8	77.0	108	382.80	30	138	352.80	--	--	--	--	--	--	--	--	X			
PZ-13	3800	360	486.00	80.00	406.00	39.00	13.5	472.5	43.5	57	429.00	7	64	422.00	--	--	--	--	--	--	--	--	X			
PZ-14	1100	2790	523.29	157.00	366.29	78.71	31	492.3	82	113	410.29	31	144	379.29	--	--	--	--	--	--	--	--	X			
PZ-15	2310	3580	485.42	55.00	430.42	14.58	32.5	452.9	>22.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
MW-1	4040	1625	470.08	63.29	406.79	38.21	29	441.1	>34.29	--	--	--	--	--	40.08	429.28	63.29	406.79	53.29	416.79	63.29	406.79	X			
MW-2	3780	360	486.16	80.00	406.16	38.84	14	472.2	44.0	58	428.16	14	72	414.16	46.50	439.66	59.54	426.62	49.54	436.62	59.54	426.62	X			
MW-3	1980	580	520.80	104.83	415.97	29.03	44	476.8	40.0	84	436.80	>20.8	--	--	Decommissioned									X		
MW-3R2	2280	580	502.87	71.00	431.87	13.13	23	479.9	47	70	432.87		--	--	59.00	443.87	71.00	431.87	61.00	441.87	71.00	431.87		X		
MW-4	1330	1500	516.32	109.00	407.32	37.68	21	495.3	39.0	60	456.32	>49	--	--	Decommissioned								X			
MW-4R1	1410	1310	526.42	64.00	462.42	-17.42	27	499.4	approx 50	approx 57	469.42		--	--	52.00	474.42	64.00	462.42	54.00	472.42	64.00	462.42				X
MW-5	1100	2770	523.29	113.97	409.32	35.68	53	470.3	59.0	112	411.29	>2	--	--	95.00	428.29	113.75	409.54	103.75	419.54	113.75	409.54	X			
MW-6	1485	3575	488.38	76.71	411.67	33.33	36	452.4	>41	--	--	--	--	--	65.00	423.38	76.71	411.67	66.71	421.67	76.71	411.67	X			
MW-7	2280	3580	485.42	70.83	414.59	30.41	53	432.4	>18	--	--	--	--	--	58.00	427.42	70.83	414.59	60.83	424.59	70.83	414.59	X			
MW-8	2860	3580	480.73	68.42	412.31	32.69	35	445.7	>33.5	--	--	--	--	--	56.93	424.40	68.42	412.31	58.42	422.31	68.42	412.31	X			
MW-9	3620	3575	476.63	68.92	407.71	37.29	39	437.6	>30	--	--	--	--	--	56.50	420.13	68.92	407.71	58.33	418.30	68.92	407.71	X			
MW-10	4040	2780	477.42	63.46	413.96	31.04	39	438.4	>24.5	--	--	--	--	--	51.25	426.17	63.46	413.96	53.46	423.96	63.46	413.96	X			
MW-11	870	3540	492.42	70.00	422.42	22.58	46	446.4	>24	--	--	--	--	--	67.00	425.42	81.00	411.42	71.00	421.42	81.00	411.42		X		
MW-12	1220	1910	516.43	73.50	442.93	2.07	20	496.4	53.0	73	443.43	>1.5	--	--	61.25	455.18	73.50	442.93	63.50	452.93	73.50	442.93			X	
B-1	1680	1155	521.30	49.5	471.80	-26.80	9.5	511.8	>40	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-2	1680	1785	304.26	50.5	453.76	-8.76	12.5	491.8	>38	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-3	1680	2220	512.72	50	462.72	-17.72	13.5	499.2	>36.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-4	1680	3060	494.86	49.5	445.36	-0.36	14.5	480.4	>35	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-5	2150	3055	488.73	50	438.73	6.27	10.5	478.2	>39.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-6	2640	3050	480.41	50	430.41	14.59	7.5	472.9	>42.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-7	3110	3050	476.02	50.5	425.52	19.48	11.25	464.8	>39.25	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-8	3600	2930	469.94	51	418.94	26.06	10	459.9	>41	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-9	3600	2420	486.00	50.5	435.50	9.50	7.5	478.5	>43	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-10	3110	2420	497.32	50.5	446.82	-1.82	20.5	476.8	>30	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-11	2640	2420	496.49	50	446.49	-1.49	15.5	481.0	>34.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-12	2150	2430	492.54	50	442.54	2.46	3.5	489.0	>46.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-13	1230	2540	526.34	50.5	475.84	-30.84	31.4	494.9	>19.1	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-14	2010	980	532.01	50	482.01	-37.01	23	509.0	>27	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-15	2150	1470	523.34	50	473.34	-28.34	18.5	504.8	>31.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-16	2630	1590	510.72	50.5	460.22	-15.22	0	510.7	>50.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-17	2640	850	489.97	49.5	440.47	4.53	4	486.0	>45.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-18	3110	1780	500.77	50	450.77	-5.77	3.5	497.3	>46.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-19	3110	1160	491.91	50	441.91	3.09	14.5	477.4	>35.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-20	3600	1680	492.94	50.5	442.44	2.56	34	458.9	>16.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-21	3600	1070	476.55	50	426.55	18.45	0	476.6	>50	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-22	3200	580	496.86	50	446.86	-1.86	1	495.9	>49	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-23	2320	1720	511.40	110	401.40	43.60	33	478.4	75	108	403.40	>2	--	--	--	--	--	--	--	--	--	--	X			
																							15	11	7	19

Total number of borings to specificed depths
Total borings = 52

(1) negative (-) sign means a depth above deepest excavation
(2) greater than (>) sign means the thickness is at least that deep but the boring didn't fully penetrate the layer
(3) BDE = Below Deepest Excavation
(elev) = elevation in ft above mean sea level
(depth) = depth below existing grade in feet

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ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

Boring No. & GS Elev.	Sample Depth ft.	Sample Elev. ft.	(1) LL, %	(2) PI, %	(3) Percent of Soil Finer Than Sieve #4	#40	#200	(4) Water Content, %	(5) Unconfined Compressive Strength, tsf	(6 & 7) Description & Classification
B-2 504.26	0.5	503.8	41	23	79	73	46	7.6		Brown to tan sandy CLAY. CL
	5.0	499.3	58	30	100	99	97	15.6		Brown to tan CLAY. CH
	10.0	494.3	71	42	99	94	93	19.1		Brown to tan CLAY. CH
B-3 512.72	21.5	491.2							20.6	Light greenish gray and tan shaly SANDSTONE.
	30.5	482.2							31.2	Gray shaly SANDSTONE.
	44.5	468.2							88.1	Light gray SANDSTONE.
B-6 480.41	0.5	479.9	41	23	79	73	46	7.6		Brown clayey SAND. SC
	5.0	475.4	58	30	100	99	97	15.6		Maroon sandy SHALE.
	7.5	472.9	71	42	99	94	93	19.1		Maroon sandy SHALE.
	9.5	470.9							4.2	Light greenish gray and tan shaly SANDSTONE.
	28.5	451.9							15.0	Dark greenish gray shaly SANDSTONE.
	41.5	438.9							108.8	Greenish gray SANDSTONE.
B-8 469.94	5.0	464.9	49	30	88	80	57	11.3		Brown silty CLAY. CL
	11.0	458.9	41	17	100	99	62	13.0		Greenish gray tan and brown shaly SANDSTONE.
B-10 497.32	6.0	491.3	71	40				25.2		Greenish gray tan and brown shaly SANDSTONE.

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

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Boring No. & GS Elev.	Sample Depth ft.	Sample Elev. ft.	(1) LL, %	(2) PI, %	(3) Percent of Soil Finer Than Sieve #4	#40	#200	(4) Water Content, %	(5) Unconfined Compressive Strength, tsf	(6 & 7) Description & Classification
B-19 491.91	22.5	469.4			100	100	39			Light greenish gray and tan shaly SANDSTONE.
	31.5	460.4			99	98	43			Dark greenish gray shaly SANDSTONE.
	45.5	446.4			100	100	16			Greenish gray SANDSTONE.
B-20 492.94	8.5	484.4	66	35				20.8		Light greenish gray sandy SHALE.
	35.0	457.9			100	99	40			Light greenish gray and tan shaly SANDSTONE.
	39.5	453.4			100	99	46			Light greenish gray and tan shaly SANDSTONE.
	46.0	446.9			100	99	32			Dark greenish gray shaly SANDSTONE.
B-21 476.55	5.5	471.1			99	97	49			Tan & light greenish gray shaly SANDSTONE.

NOTES: (1) ASTM D 423-72 (3) ASTM D 422-72 (5) ASTM D 2938-79 (7) ASTM D 2487-75
(2) ASTM D 424-71 (4) ASTM D 2216-80 (6) ASTM D 2488-75

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

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Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-2	0.0-10.5*	123.3	13.3	109	1.99×10^{-8}	Brown to tan sandy CLAY. CL
B-3	4.0- 5.0	126.5	19.1	106	5.22×10^{-8}	Greenish gray sandy SHALE.
B-4	4.0- 4.5	125.1	22.4	102	2.27×10^{-8}	Maroon sandy SHALE.
B-6	4.5- 5.5	128.5	14.9	112	6.60×10^{-8}	Maroon sandy SHALE.
B-8	0.0- 1.5	109.3	13.7	96	1.54×10^{-7}	Brown silty CLAY. CL
	10.0-11.5	140.2	11.1	126	4.13×10^{-8}	Greenish gray, tan and brown shaly SANDSTONE.
B-13	4.0- 5.0	123.3	17.5	105	7.32×10^{-8}	Maroon sandy SHALE.
B-14	9.0-10.0	136.6	16.6	117	1.53×10^{-7}	Light greenish gray and tan sandy SHALE.
B-16	9.0-10.0	124.9	13.3	110	1.40×10^{-7}	Greenish gray and tan shaly SANDSTONE.
B-17	0.0- 1.0	124.1	13.5	109	1.01×10^{-7}	Brown sandy CLAY. CL

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-18	4.5- 5.5	128.9	16.9	110	1.43×10^{-7}	Light greenish gray and tan SANDSTONE.
B-22	3.0- 4.0	125.5	16.1	110	2.51×10^{-8}	Greenish gray and tan shaly SANDSTONE.

* Combined from three samples, depths 0.5, 5.0 and 10.0 ft., remolded and recompacted.

Job Name: Laredo Landfill

Job Number: 06-22497

ATTACHMENT 4 - TABLE 6
SUMMARY OF ENGINEERING TEST RESULTS
1997 LABORATORY TESTING RESULTS
CITY OF LAREDO SANITARY LANDFILL

Date: 30 October 1997

SAMPLE NO./LAYERS	DESCRIPTION	MOISTURE CONTENT (%)	ATTERBERG LIMITS		HYDRO METER	% PASSING #200 SIEVE	PERMEABILITY (CM/SEC)		UNCONFINED COMPRESSIVE STRENGTH (TSF)
			LL (%)	PI			VERTICAL	HORIZONTAL	
P-14 I - 42.5' - 44'	Dark gray sandstone	8.6	34	18	—	6.8	—		56.4
P-14 II - 83' - 85'	Dark gray sandstone	7.6	30	14	—	3.1	8.65×10^{-5}	—	*
P-14 III - 117.1'-117.5	Gray black claystone	13.3	—	—	—	—	*	—	—
P-14 III - 121.2' - 122.4'	Dark greenish gray claystone	15.3	49	30		41.8	—		*
P-14 III - 134.7 - 135.0	Dark greenish gray claystone	22.6	—	—	—		5.7×10^{-9}	*	*
P-14 IV - 144.5' - 145'	Light gray sandstone	8.4	35	19	—	11.1	*		471
P-15 I - 20.5' - 21.5'	Reddish brown clay	10.0	52	33				*	21.7
P-15 II - 45' - 46.9'	Dark gray sandstone	11.5	32	16	—	4.3	4.88×10^{-8}	—	75
B-23 I - 0' - 19'	Light brown sandy silty clay	14.1	26	11	—	27.8	—	*	52.8
B-23 II - 48.1' - 65.6'	Dark gray sandstone	7.2	25	10	—	0.8	—	*	123
B-23 II - 79.7' - 81.9'	Dark gray sandstone	—	27	12	—	5.8	1.45×10^{-6}	—	—

*Insufficent Sample

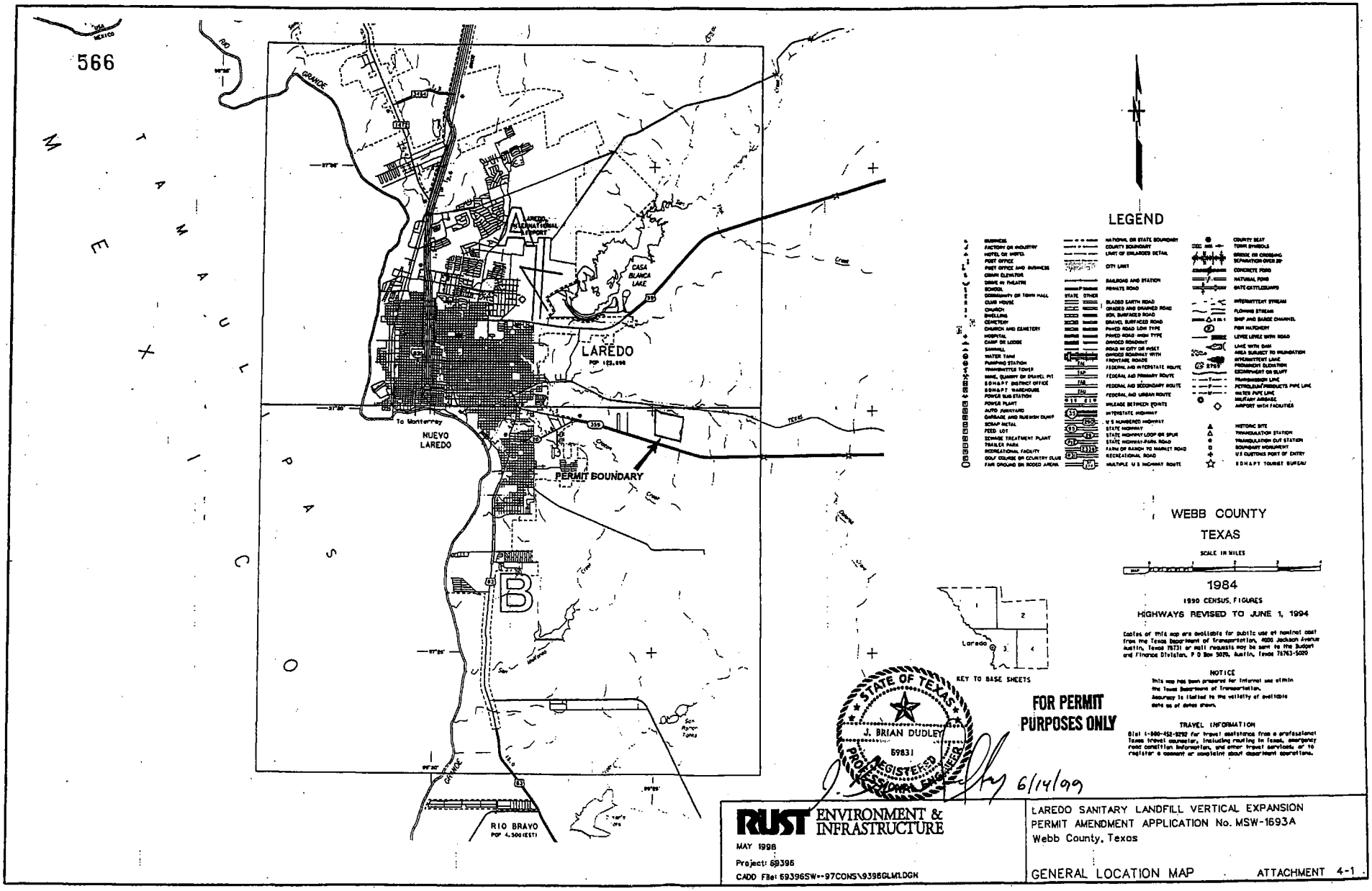
JACK H. HOLT & ASSOCIATES, INC.
2220 BARTON SKYWAY
AUSTIN, TEXAS 78704

PART III ATTACHMENT 4
TABLE 7
SUMMARY OF WATER-LEVEL INFORMATION
LAREDO SANITARY LANDFILL

Well / Piezometer	Ground Elev	Initial water level	Initial water Elev. (MSL)	Date	Stabilized water Elev. (MSL)	Date
P-1	477.60	Dry	N/A	11/29-30/93	433.21	1/11/94
P-2	470.80	Dry	N/A	11/23/93	Dry	1/11/94
P-3	479.90	Dry	N/A	12/3/93	Dry	1/11/94
P-4	471.80	Dry	N/A	11/12-16/93	426.97	1/11/94
P-5	475.20	Dry	N/A	11/24/93	Dry	1/11/94
P-6	485.70	Dry	N/A	12/3/93	Dry	1/11/94
P-7	491.00	Dry	N/A	12/2/93	Dry	1/11/94
P-8	512.90	Dry	N/A	12/1-2/93	434.23	1/11/94
P-9	540.20	Dry	N/A	12/3/93	Dry	1/11/94
P-10	502.20	Dry	N/A	12/3/93	Dry	1/11/94
P-11	511.00	Dry	N/A	12/3/93	Dry	1/11/94
P-12	490.80	Dry	N/A	11/17-23/93	426.12	1/11/94
PZ-13	486.00	52.8	433.20	4/23/97	Dry	4/24/97
PZ-14	523.29	Dry	N/A	4/29/97	Dry	4/30/97
PZ-15	485.42	Dry	N/A	4/30/97	Dry	4/30/97
MW-1	470.08	33.0	437.08	8/15/96	39.62/432.32	10/23/96
MW-2	486.16	53.0	433.16	9/18/96	49.23/439.12	10/23/96
MW-3	520.80	Dry	N/A	9/5/96	97.89/424.86	10/23/96
MW-3R2	502.87	48.0	454.87	12/3/97	Dry	no date
MW-4	516.32	Dry	N/A	8/19/96	99.05/421.72	10/23/96
MW-4R1	526.42	54.0	472.42		474.88	12/15/97
MW-5	523.29	Dry	N/A	8/20/96	100.70/424.27	10/23/96
MW-6	488.38	Dry	N/A	9/8/96	67.33/423.41	10/23/96
MW-7	485.42	59.0	426.42	8/17/96	63.47/424.07	10/23/96
MW-8	480.73	Dry	N/A	9/9/96	57.19/425.36	10/23/96
MW-9	476.63	Dry	N/A	9/11/96	52.62/426.19	10/23/96
MW-10	477.42	53.0	424.42	8/27/96	51.46/427.47	10/23/96
MW-11	492.42	Dry	N/A	11/20/97	423.38	12/15/97
MW-12	516.43	Dry	N/A	11/25/97	451.11	12/15/97
B-1	521.30	(1)			Dry(2)	9/22/83(3)
B-2	504.26	(1)			Dry	9/22/83(3)
B-3	512.72	(1)			Dry	9/23/83(3)
B-4	494.86	(1)			Dry(2)	9/23/83(3)
B-5	488.73	(1)			Dry(2)	9/23/83(3)
B-6	480.41	(1)			Dry(2)	9/23/83(3)
B-7	476.02	(1)			Dry(2)	9/23/83(3)
B-8	469.94	(1)			Dry(2)	9/23/83(3)
B-9	486.00	(1)			Dry	9/12/83(3)
B-10	497.32	(1)			Dry	9/13/83(3)
B-11	496.49	(1)			Dry	9/14/83(3)
B-12	492.54	(1)			Dry	9/21/83(3)
B-13	426.34	(1)			Dry	9/24/83(3)
B-14	532.01	(1)			Dry	9/24/83(3)
B-15	523.34	(1)			Dry	9/23/83(3)
B-16	510.72	(1)			Dry	9/25/83(3)
B-17	489.97	(1)			Dry(2)	9/25/83(3)
B-18	500.77	(1)			Dry	9/10/83(3)
B-19	491.91	(1)			Dry	9/9/83(3)
B-20	492.94	(1)			Dry	9/11/83(3)
B-21	476.55	(1)			Dry(2)	9/11/83(3)
B-22	496.86	(1)			Dry	9/8/83(3)
B-23	511.40	Dry	N/A	5/2/97	Dry	5/2/97

(1) Initial water levels not measured due to wet rotary methods (3) ~ 24 hours

(2) Hole collapsed, liquid encountered in hole noted on log as "probably drilling fluid"



Copies of this map are available for public use at nominal cost from the Texas Department of Transportation, 4000 Jackson Avenue Austin, Texas 78731 or mail requests may be sent to the Budget and Finance Division, P O Box 5074, Austin, Texas 78763-5020

NOTICE

This map has been prepared for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of dates shown.

TRAVEL INFORMATION

Dial 1-800-452-9292 for travel assistance from a professional Texas travel counselor, including routing in Texas, emergency road condition information, and other travel services, or to register a comment or complaint about department operations.

RUST ENVIRONMENT & INFRASTRUCTURE

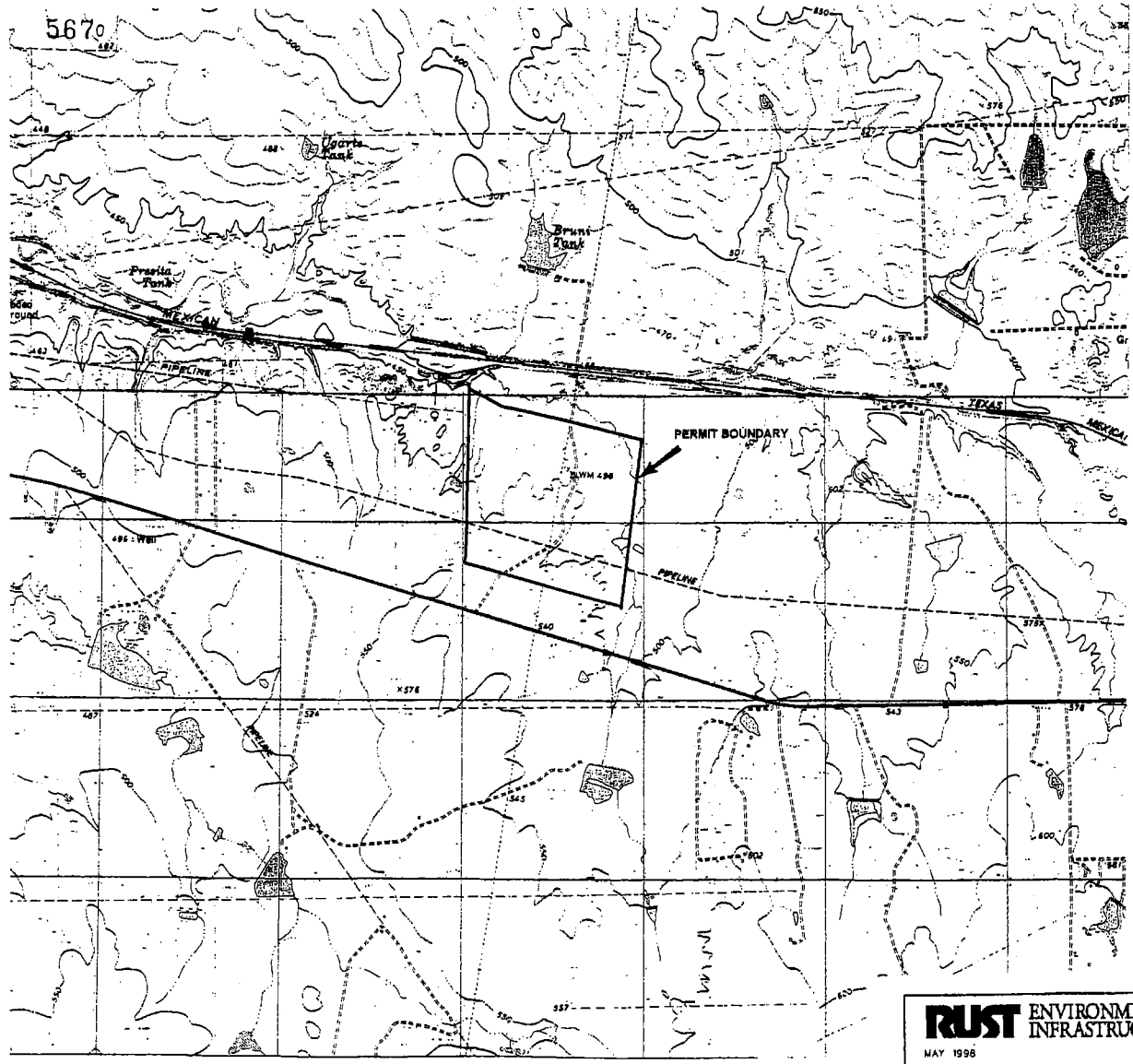
MAY 1998

Project: 69396

CADD File: 69396SW--97CONS\9398GLM1.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

GENERAL LOCATION MAP ATTACHMENT 4-1



BASE MAP SOURCE: LAREDO EAST, 1980, LAREDO SOUTH, 1979, USGS 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAPS.

LEGEND:

REFER TO TOPOGRAPHIC MAP SYMBOLS, DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY, NATIONAL MAPPING DIVISION.

QUADRANGLE LOCATION

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED PROFESSIONAL ENGINEER

6/14/99

0 1000 2000
SCALE IN FEET

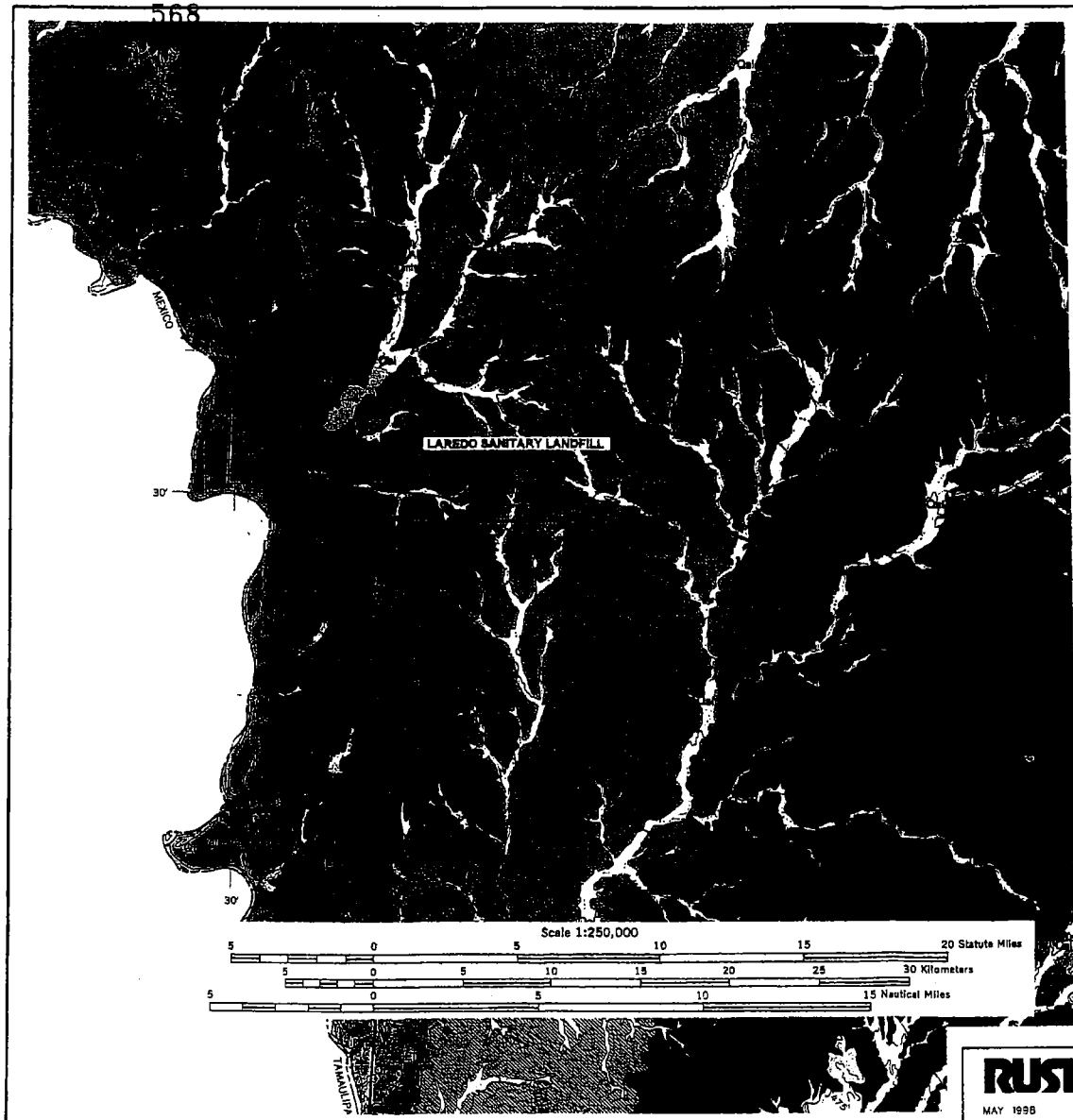
RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1996
Project: 69396
CADD File: 693965W--97CON5\9396TM10.DGN

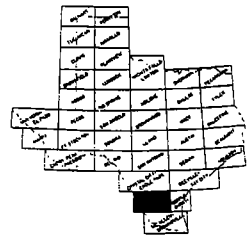
LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

TOPOGRAPHIC MAP ATTACHMENT 4-2

568



LOCATION MAP



EXPLANATION

Qal

Alluvium

Floodplain deposits: clay, silt, sand, gravel, and organic matter; silt and clay calcareous, dark gray to dark brown; sand mostly quartz; gravel along the Rio Grande includes sedimentary rocks from the Cretaceous and Tertiary and a wide variety of sedimentary and igneous rocks including agate from Trans-Pecos Texas, Mexico, and New Mexico; gravel in side streams of the Rio Grande are mostly local Tertiary sedimentary rocks and chert derived from Uvalde Gravel which caps divides

Yegua Formation

Clay and sandstone; mostly clay, lignitic, sandy, bentonitic, silty, mostly well laminated, chocolate brown to reddish brown, lighter colored upward, produces dark-gray soil; sandstone, mostly quartz, some chert, fine grained, indurated to friable, calcareous, glauconitic, massive, laminated, crossbedded, weathers to loose, ferruginous, yellow-orange and reddish-brown soil; some fossil wood; thickness about 400 feet

Laredo Formation

Sandstone and clay; thick sandstone members in upper and lower part, very fine to fine grained, in part glauconitic, micaceous, ferruginous, crossbedded, dominantly red and brown; clay in middle, weathers orange-yellow; dark-gray limestone concretions common, some fossiliferous; marine megafossils abundant; thickness about 820 feet

Uvalde Gravel

Chert, well-rounded pebbles and cobbles; occupies divide areas; thickness up to about 20 feet

Fluviatile terrace deposits

Gravel, sand, silt, and clay; composed of materials similar to those present in contiguous alluvium; contiguous terraces are separated by a solid line

THE UNIVERSITY OF TEXAS AT AUSTIN
BUREAU OF ECONOMIC GEOLOGY
C. G. GROAT, ACTING DIRECTOR

STATE OF TEXAS
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Prepared by the Army Map Service (KCSX), Corps of Engineers, U. S. Army, Washington, D. C. Compiled in 1957 by photogrammetric methods and reference to county highway maps issued by Texas Department of Highways, 1954-55. Horizontal and vertical control by USC&GS, USGS and CE. Aerial photography 1955. Photography field annotated 1956.

CONTOUR INTERVAL 50 FEET
WITH SUPPLEMENTARY CONTOURS AT 25 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

1974 MAGNETIC DECLINATION FOR CENTER OF THIS SHEET
IS 8°46'E. MEAN ANNUAL CHANGE IS 0°04' WESTERLY

J. Brian Dudley
6/14/99
FOR PERMIT PURPOSES ONLY

BASE MAP SOURCE: GEOLOGIC ATLAS OF TEXAS, LAREDO SHEET (1976), UNIVERSITY OF TEXAS, BUREAU OF ECONOMIC GEOLOGY

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998
Project: 69396
CADD File: 69396SW1-97CONS\9396GM9.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

GEOLOGIC MAP ATTACHMENT 4-3

ATTACHMENT 4
TABLE 4
SUMMARY OF BORING INFORMATION
LAREDO SANITARY LANDFILL

Well/ Boring/ Piezometer	northing local scale	easting local scale	Ground elev.	Total depth (depth)	Total depth (elev.)	Depth below deepest grade(1)	Top of Layer II (depth)	Top of Layer II (elev)	layer II thickness(2)	Top of Layer III (depth)	Top of Layer III (elev)	Layer III thickness (2)	Top of Layer IV (depth)	Top of Layer IV (elev)	Screened Interval								borings to 415' or lower 30 ft BDE(3)	borings to -<445' >415' 5 - 30 ft. BDE	borings to -<445' - >440' 0 - 5 ft. BDE	borings to higher than 445'
															T. filter pack (depth)	T. filter pack (elev)	Base F. pack (depth)	Base F. pack (elev)	Top Screen (depth)	Top Screen (elev)	Base Screen (depth)	Base Screen (elev)				
P-1	4370	280	477.60	95.00	382.60	62.40	23	454.6	52.0	75	402.60	>20	--	--	--	--	--	--	--	--	--	--	X			
P-2	4020	1720	470.80	30.00	440.80	4.20	28	442.8	>2	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
P-3	4020	2870	479.90	30.00	449.90	-4.90	28	451.9	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-4	4050	3610	471.80	100.00	371.80	73.20	36	435.8	>64	--	--	--	--	--	--	--	--	--	--	--	--	--	X			
P-5	3510	3580	475.20	32.00	443.20	1.80	31	444.2	>1	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
P-6	2110	3635	485.70	30.00	455.70	-10.70	28	457.7	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-7	890	3620	491.00	32.00	459.00	-14.00	29	462.0	>3	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-8	1200	2200	512.90	90.00	422.90	22.10	29	483.9	>61	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
P-9	1500	660	540.20	31.00	509.20	-64.20	29	511.2	>2	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-10	2750	575	502.20	30.00	472.20	-27.20	17	485.2	>13	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-11	2780	1440	511.00	35.00	476.00	-31.00	32	479.0	>3	--	--	--	--	--	--	--	--	--	--	--	--	--				X
P-12	2815	2625	490.80	197.00	293.80	151.20	31	459.8	77.0	108	382.80	30	138	352.80	--	--	--	--	--	--	--	--	X			
PZ-13	3800	360	486.00	80.00	406.00	39.00	13.5	472.5	43.5	57	429.00	7	64	422.00	--	--	--	--	--	--	--	--	X			
PZ-14	1100	2790	523.29	157.00	366.29	78.71	31	492.3	82	113	410.29	31	144	379.29	--	--	--	--	--	--	--	--	X			
PZ-15	2310	3580	485.42	55.00	430.42	14.58	32.5	452.9	>22.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
MW-1	4040	1625	470.08	63.29	406.79	38.21	29	441.1	>34.29	--	--	--	--	--	40.08	429.28	63.29	406.79	53.29	416.79	63.29	406.79	X			
MW-2	3780	360	486.16	80.00	406.16	38.84	14	472.2	44.0	58	428.16	14	72	414.16	46.50	439.66	59.54	426.62	49.54	436.62	59.54	426.62	X			
MW-3	1980	580	520.80	104.83	415.97	29.03	44	476.8	40.0	84	436.80	>20.8	--	--	Decommissioned									X		
MW-3R2	2280	580	502.87	71.00	431.87	13.13	23	479.9	47	70	432.87		--	--	59.00	443.87	71.00	431.87	61.00	441.87	71.00	431.87		X		
MW-4	1330	1500	516.32	109.00	407.32	37.68	21	495.3	39.0	60	456.32	>49	--	--	Decommissioned								X			
MW-4R1	1410	1310	526.42	64.00	462.42	-17.42	27	499.4	approx 50	approx 37	469.42		--	--	52.00	474.42	64.00	462.42	54.00	472.42	64.00	462.42				X
MW-5	1100	2770	523.29	113.97	409.32	35.68	53	470.3	59.0	112	411.29	>2	--	--	95.00	428.29	113.75	409.54	103.75	419.54	113.75	409.54	X			
MW-6	1485	3575	488.38	76.71	411.67	33.33	36	452.4	>41	--	--	--	--	--	65.00	423.38	76.71	411.67	66.71	421.67	76.71	411.67	X			
MW-7	2280	3580	485.42	70.83	414.59	30.41	53	432.4	>18	--	--	--	--	--	58.00	427.42	70.83	414.59	60.83	424.59	70.83	414.59	X			
MW-8	2860	3580	480.73	68.42	412.31	32.69	35	445.7	>33.5	--	--	--	--	--	56.33	424.40	68.42	412.31	58.42	422.31	68.42	412.31	X			
MW-9	3620	3575	476.63	68.92	407.71	37.29	39	437.6	>30	--	--	--	--	--	56.50	420.13	68.92	407.71	58.33	418.30	68.92	407.71	X			
MW-10	4040	2780	477.42	63.46	413.96	31.04	39	438.4	>24.5	--	--	--	--	--	51.25	426.17	63.46	413.96	53.46	423.96	63.46	413.96	X			
MW-11	870	3540	492.42	70.00	422.42	22.58	46	446.4	>24	--	--	--	--	--	67.00	425.42	81.00	411.42	71.00	421.42	81.00	411.42		X		
MW-12	1220	1910	516.43	73.50	442.93	2.07	20	496.4	53.0	73	443.43	>1.5	--	--	61.25	455.18	73.50	442.93	63.50	452.93	73.50	442.93			X	
B-1	1680	1155	521.30	49.5	471.80	-26.80	9.5	511.8	>40	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-2	1680	1785	504.26	50.5	453.76	-8.76	12.5	491.8	>38	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-3	1680	2220	512.72	50	462.72	-17.72	13.5	499.2	>36.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-4	1680	3060	494.86	49.5	445.36	-0.36	14.5	480.4	>35	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-5	2150	3055	488.73	50	438.73	6.27	10.5	478.2	>39.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-6	2640	3050	480.41	50	430.41	14.59	7.5	472.9	>42.5	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-7	3110	3050	476.02	50.5	425.52	19.48	11.25	464.8	>39.25	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-8	3600	2930	469.94	51	418.94	26.06	10	459.9	>41	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-9	3600	2420	486.00	50.5	435.50	9.50	7.5	478.5	>43	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-10	3110	2420	497.32	50.5	446.82	-1.82	20.5	476.8	>30	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-11	2640	2420	496.49	50	446.49	-1.49	15.5	481.0	>34.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-12	2150	2430	492.54	50	442.54	2.46	3.5	489.0	>46.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-13	1230	2540	526.34	50.5	475.84	-30.84	31.4	494.9	>19.1	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-14	2010	980	532.01	50	482.01	-37.01	23	509.0	>27	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-15	2150	1470	523.34	50	473.34	-28.34	18.5	504.8	>31.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-16	2630	1590	510.72	50.5	460.22	-15.22	0	510.7	>50.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-17	2640	850	489.97	49.5	440.47	4.53	4	486.0	>45.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-18	3110	1780	500.77	50	450.77	-5.77	3.5	497.3	>46.5	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-19	3110	1160	491.91	50	441.91	3.09	14.5	477.4	>35.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-20	3600	1680	492.94	50.5	442.44	2.56	34	458.9	>16.5	--	--	--	--	--	--	--	--	--	--	--	--	--			X	
B-21	3600	1070	476.55	50	426.55	18.45	0	476.6	>50	--	--	--	--	--	--	--	--	--	--	--	--	--		X		
B-22	3200	580	496.86	50	446.86	-1.86	1	495.9	>49	--	--	--	--	--	--	--	--	--	--	--	--	--				X
B-23	2320	1720	511.40	110	401.40	43.60	33	478.4	75	108	403.40	>2	--	--	--	--	--	--	--	--	--	--	X			
																							Total number of borings to specificed depths	15	11	7	19
																							Total borings = 52			

(1) negative (-) sign means # depth above deepest excavation
(2) greater than (>) sign means the thickness is at least that deep but the boring didn't fully penetrate the layer
(3) BDE = Below Deepest Excavation
(elev) = elevation in ft above mean sea level
(depth) = depth below existing grade in feet

559

ATTACHMENT 4 - TABLE 5
SUMMARY OF ENGINEERING TEST RESULTS
LABRATORY TESTING PRIOR TO 1997
CITY OF LAREDO SANITARY LANDFILL

Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-18	4.5- 5.5	128.9	16.9	110	1.43×10^{-7}	Light greenish gray and tan SANDSTONE.
B-22	3.0- 4.0	125.5	16.1	110	2.51×10^{-8}	Greenish gray and tan shaly SANDSTONE.

* Combined from three samples, depths 0.5, 5.0 and 10.0 ft., remolded and recompacted.

Job Name: Laredo Landfill

Job Number: 06-22497

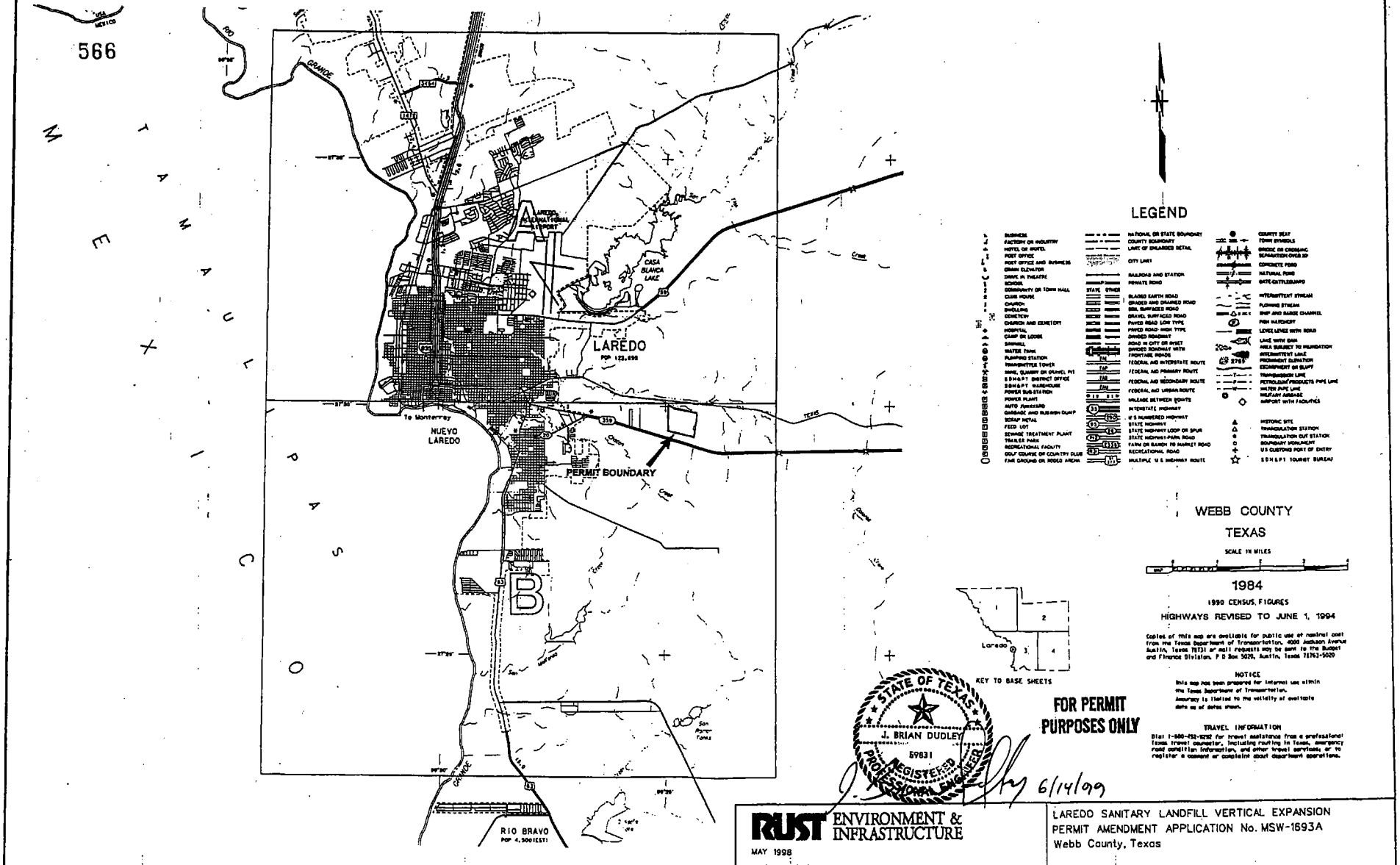
ATTACHMENT 4 - TABLE 6
SUMMARY OF ENGINEERING TEST RESULTS
1997 LABORATORY TESTING RESULTS
CITY OF LAREDO SANITARY LANDFILL

Date: 30 October 1997

SAMPLE NO./LAYERS	DESCRIPTION	MOISTURE CONTENT (%)	ATTERBERG LIMITS		HYDRO METER	% PASSING #200 SIEVE	PERMEABILITY (CM/SEC)		UNCONFINED COMPRESSIVE STRENGTH (TSF)
			LL (%)	PI			VERTICAL	HORIZONTAL	
P-14 I - 42.5' - 44'	Dark gray sandstone	8.6	34	18	—	6.8	—		56.4
P-14 II - 83' - 85'	Dark gray sandstone	7.6	30	14	—	3.1	8.65×10^{-5}	—	*
P-14 III - 117.1'-117.5	Gray black claystone	13.3	—	—	—	—	*	—	—
P-14 III - 121.2' - 122.4'	Dark greenish gray claystone	15.3	49	30		41.8	—		*
P-14 III - 134.7 - 135.0	Dark greenish gray claystone	22.6	—	—	—		5.7×10^{-9}	*	*
P-14 IV - 144.5' - 145'	Light gray sandstone	8.4	35	19	—	11.1	*		471
P-15 I - 20.5' - 21.5'	Reddish brown clay	10.0	52	33				*	21.7
P-15 II - 45' - 46.9'	Dark gray sandstone	11.5	32	16	—	4.3	4.88×10^{-8}	—	75
B-23 I - 0' - 19'	Light brown sandy silty clay	14.1	26	11	—	27.8	—	*	52.8
B-23 II - 48.1' - 65.6'	Dark gray sandstone	7.2	25	10	—	0.8	—	*	123
B-23 II - 79.7' - 81.9'	Dark gray sandstone	—	27	12	—	5.8	1.45×10^{-6}	—	—

*Insufficent Sample

JACK H. HOLT & ASSOCIATES, INC.
2220 BARTON SKYWAY
AUSTIN, TEXAS 78704


566
MEXICO
RIO GRANDE
TAMAULIPAS
TEXAS
LAREDO
POP 122,899
NUEVO LAREDO
To Monterrey
PERMIT BOUNDARY
CASA BLANCA LAKE
LAREDO INTERNATIONAL AIRPORT
RIO BRAVO
POP 4,500 (EST)
A
B
LEGEND
WEBB COUNTY
TEXAS
SCALE IN MILES
1984
1990 CENSUS FIGURES
HIGHWAYS REVISED TO JUNE 1, 1994
Copies of this map are available for public use at nominal cost from the Texas Department of Transportation, 4000 Jackson Avenue Austin, Texas 78731 or mail requests may be sent to the Budget and Finance Division, P O Box 5020, Austin, Texas 78763-5020
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KEY TO BASE SHEETS
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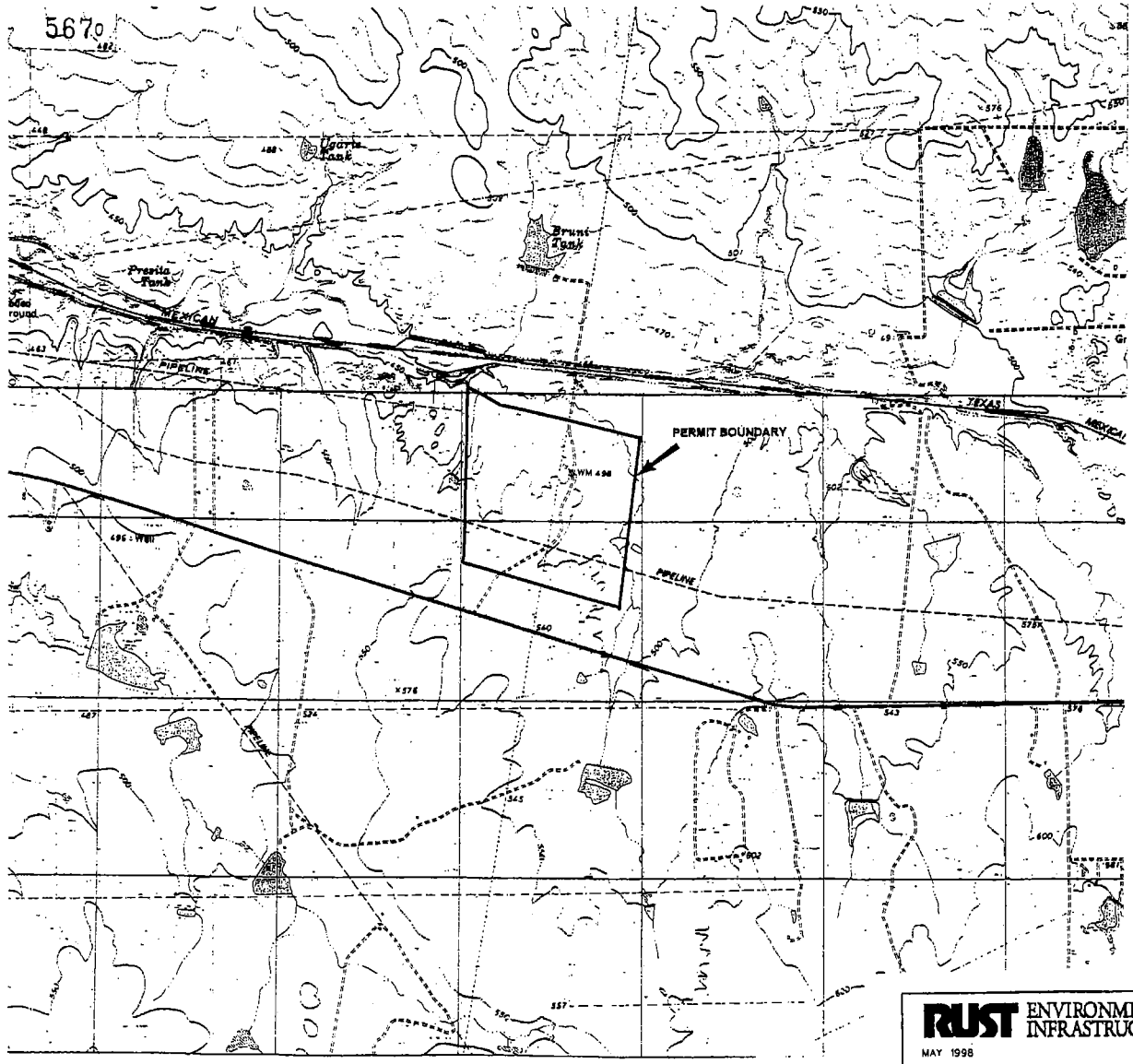
STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED PROFESSIONAL ENGINEER
6/14/99
RUST ENVIRONMENT & INFRASTRUCTURE
MAY 1998
Project: 69396
CADD File: 69396SW--97CONS\9396GLM.DGN
LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas
GENERAL LOCATION MAP
ATTACHMENT 4-1



BASE MAP SOURCE: LAREDO EAST, 1980, LAREDO SOUTH, 1979, USGS 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAPS.

LEGEND:

REFER TO TOPOGRAPHIC MAP SYMBOLS, DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY, NATIONAL MAPPING DIVISION.

QUADRANGLE LOCATION

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED PROFESSIONAL ENGINEER

6/14/99

0 1000 2000
SCALE IN FEET

RUST ENVIRONMENT & INFRASTRUCTURE

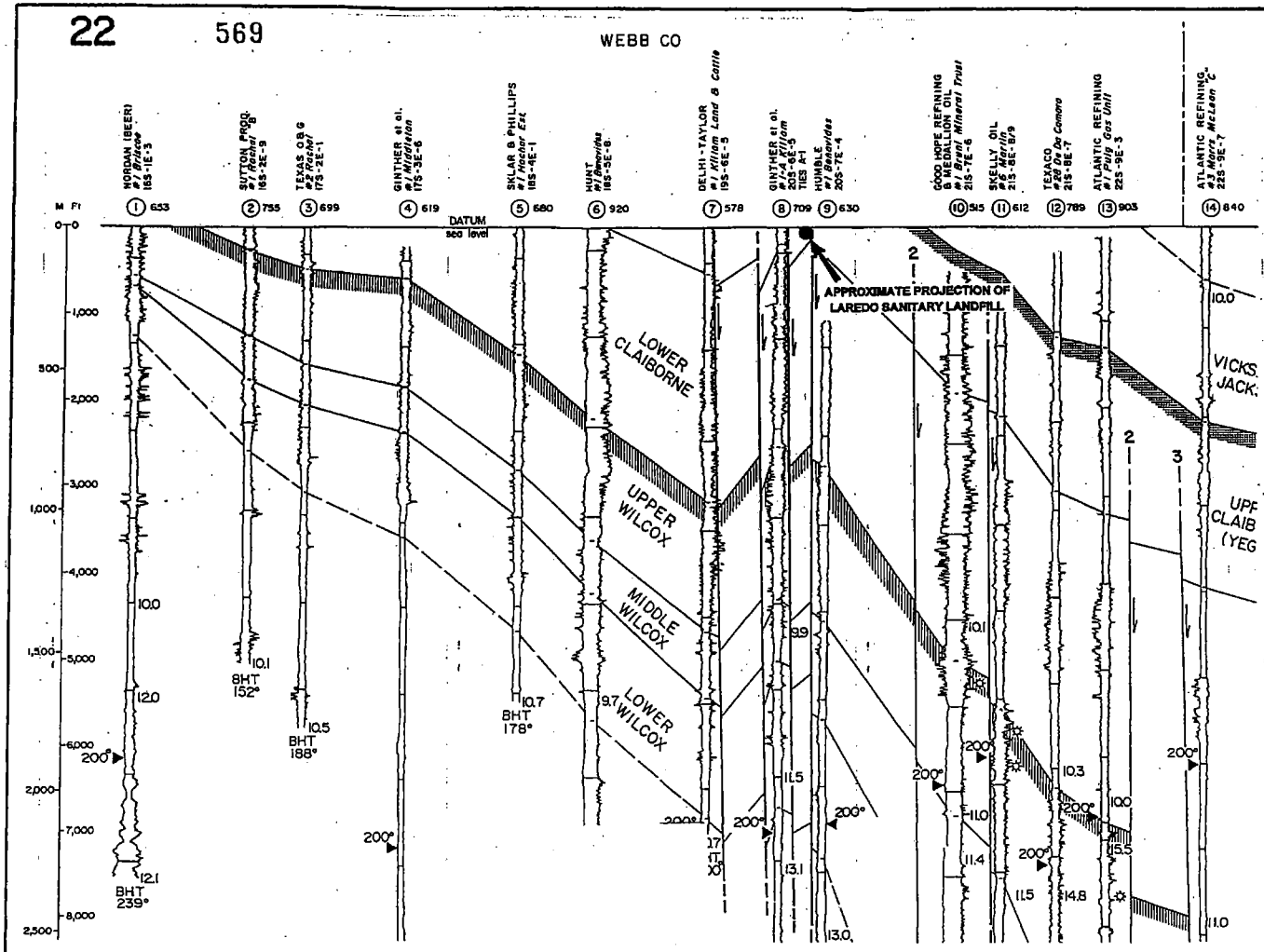
MAY 1998
Project: 69396
CADD File: 69396SW+-97CONS\9396TM10.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

TOPOGRAPHIC MAP ATTACHMENT 4-2

22 569

WEBB CO



Horizontal Scale

0 15 Mi

0 15 Km

Vertical exaggeration: x40

LEGEND:

PALEONTOLOGY

MI	*Marginulina idiomorpha*
MH	*Marginulina howei*
CH	*Cibicides hazzardi*
NB	*Nodosaria blanpiedi*
TM	*Textularia mississippiensis*
AB	*Anomalina bilateralis*
TW	*Textularia warreni*

- Oil production
- Gas production
- 200° Shallowest occurrence of 200°F temperature
- 11.6 Mud weight
- BHT 245° Bottom-hole temperature (°F)
- (4) 619 Well number with elevation (Ft) at K.B.
- 3 — 3 Number of faults generalized as one fault
- Top of geopressure

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS J. BRIAN DUDLEY 59831 REGISTERED PROFESSIONAL ENGINEER

6/14/99

LOCATOR MAP

0 50 Mi

0 50 Km

BASE MAP SOURCE: STRUCTURAL CROSS-SECTIONS, TERTIARY FORMATIONS, TEXAS GULF COAST (1981), UNIVERSITY OF TEXAS, BUREAU OF ECONOMIC GEOLOGY.

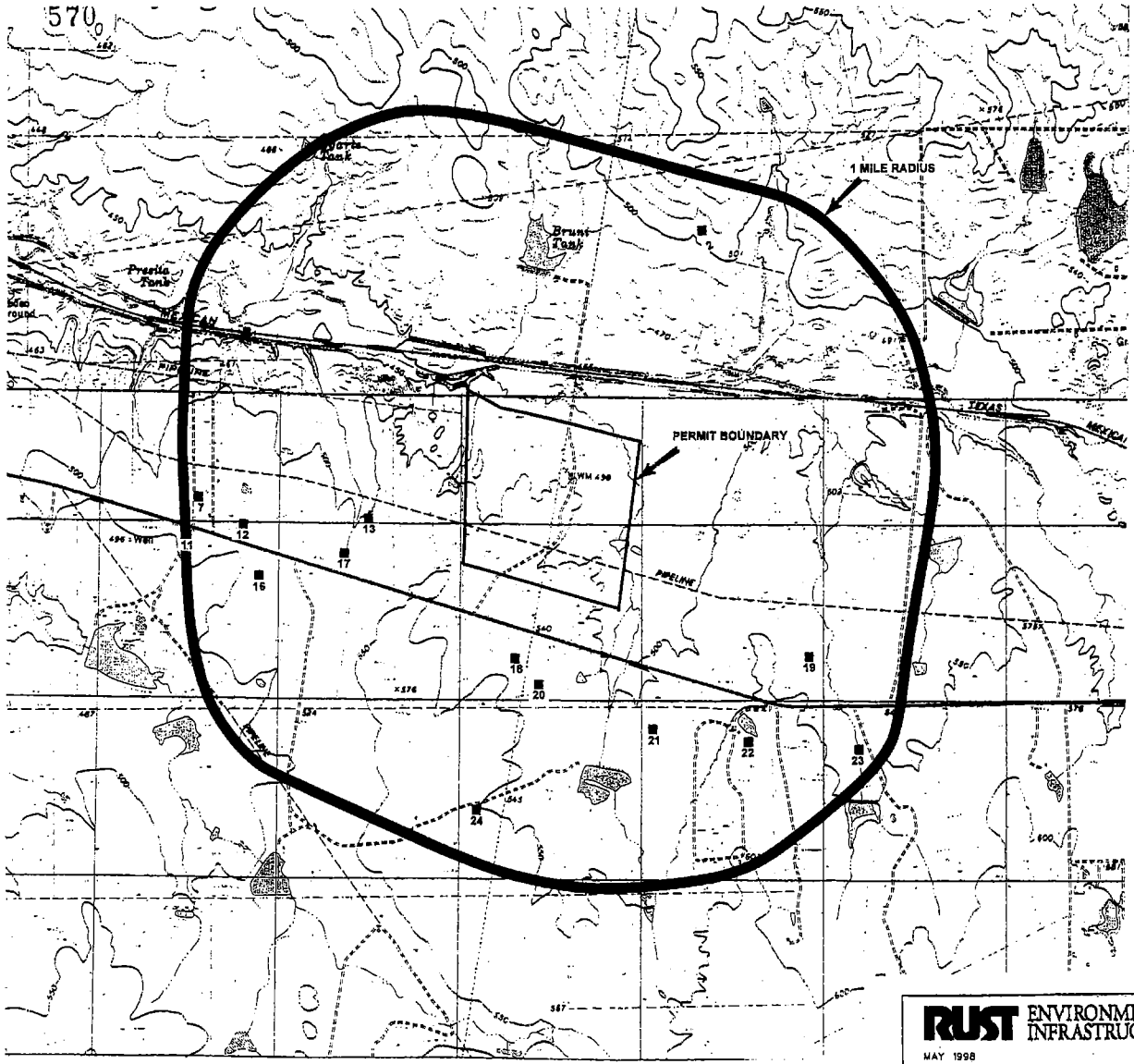
RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998
Project: 69396
CADD File: 69396\9396GLM2.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

REGIONAL GEOLOGIC CROSS-SECTION

ATTACHMENT 4-4



LEGEND:

■ 14 WATER WELLS WITHIN ONE MILE OF PERMIT BOUNDARY

FOR OTHER SYMBOLS REFER TO TOPOGRAPHIC MAP SYMBOLS, DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY, NATIONAL MAPPING DIVISION.

NOTES:

REFER TO TABLE 4-2 FOR A SUMMARY OF WELL INFORMATION REGAROING THE WELLS SHOWN ON THIS MAP.

QUADRANGLE LOCATION

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED PROFESSIONAL ENGINEER

J. Brian Dudley 6/14/99

0 1000 2000
SCALE IN FEET

BASE MAP SOURCE: LAREDO EAST, 1980, LAREDO SOUTH, 1979, USGS 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAPS.

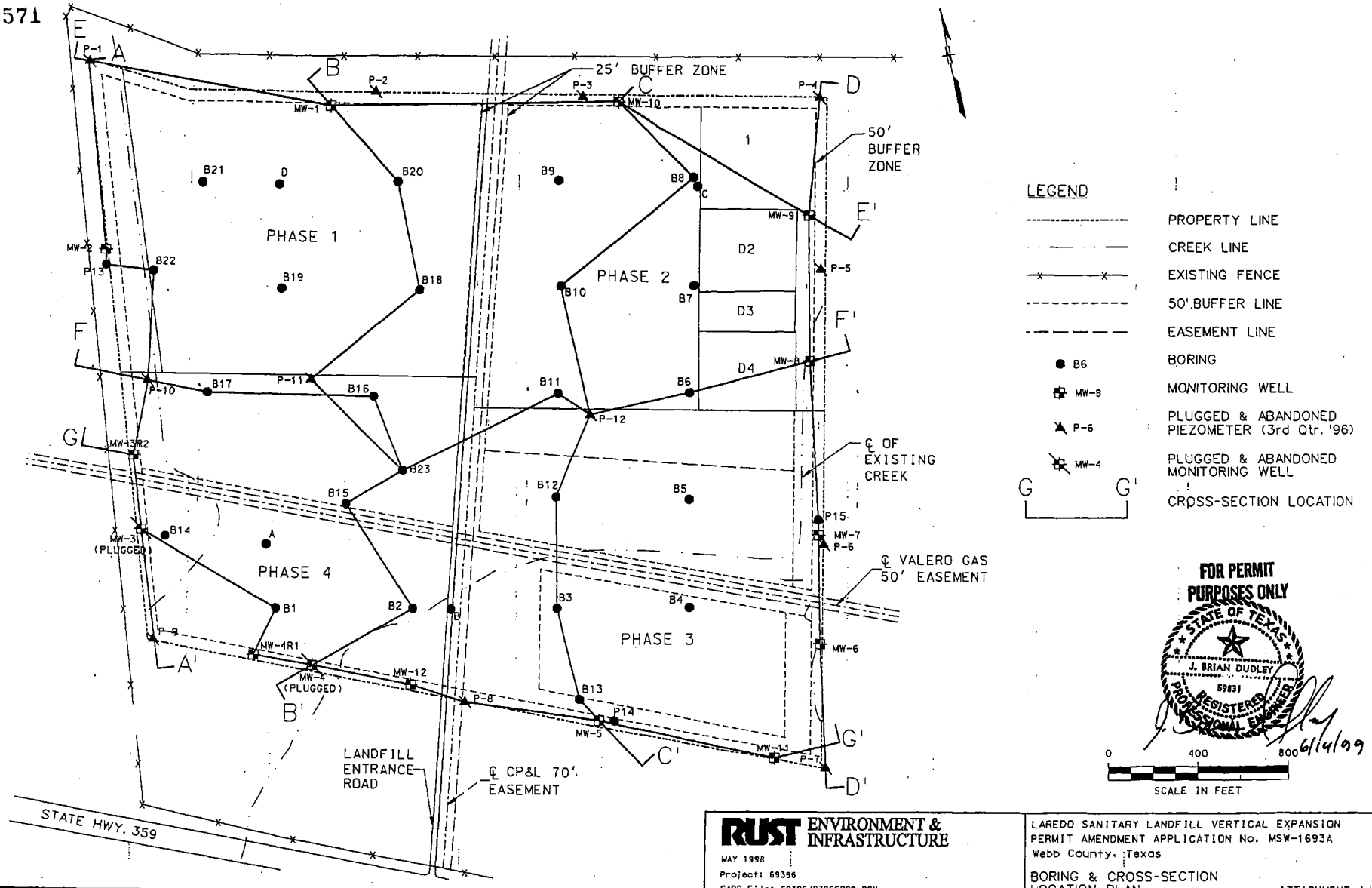
RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998
Project 69396
CADD File: 69396SW--97CONS\9396TM10.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

WELL LOCATION MAP ATTACHMENT 4-5

571



RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998
Project: 69396
CADD File: 69396/9396SP02.DGN

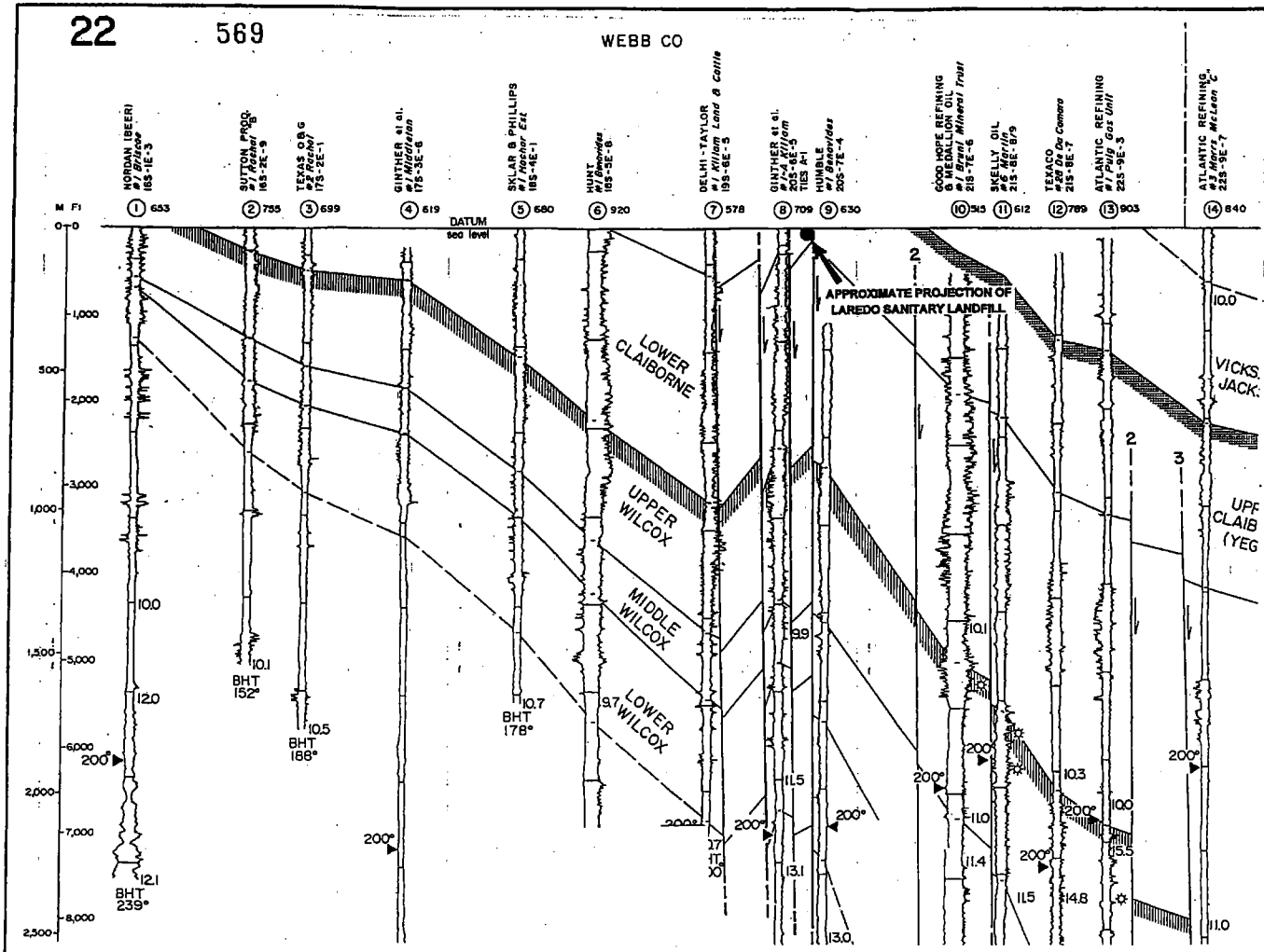
LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

BORING & CROSS-SECTION LOCATION PLAN

ATTACHMENT 4-6

22 569

WEBB CO



Horizontal Scale

0 15 Mi

0 15 Km

Vertical exaggeration: x40

LEGEND:

PALEONTOLOGY

MI	*Marginulina idiomorpha*
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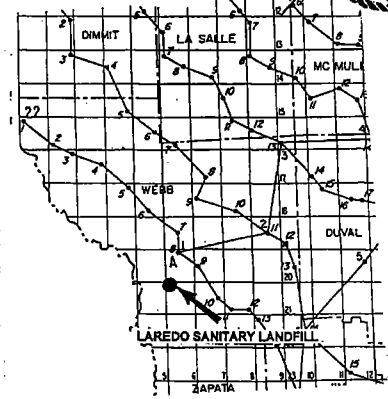
- Top of geopressure

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS J. BRIAN DUDLEY 69831 REGISTERED PROFESSIONAL ENGINEER

6/14/99

LOCATOR MAP



0 50 Mi

0 50 Km

BASE MAP SOURCE: STRUCTURAL CROSS-SECTIONS, TERTIARY FORMATIONS, TEXAS GULF COAST (1981), UNIVERSITY OF TEXAS, BUREAU OF ECONOMIC GEOLOGY.

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

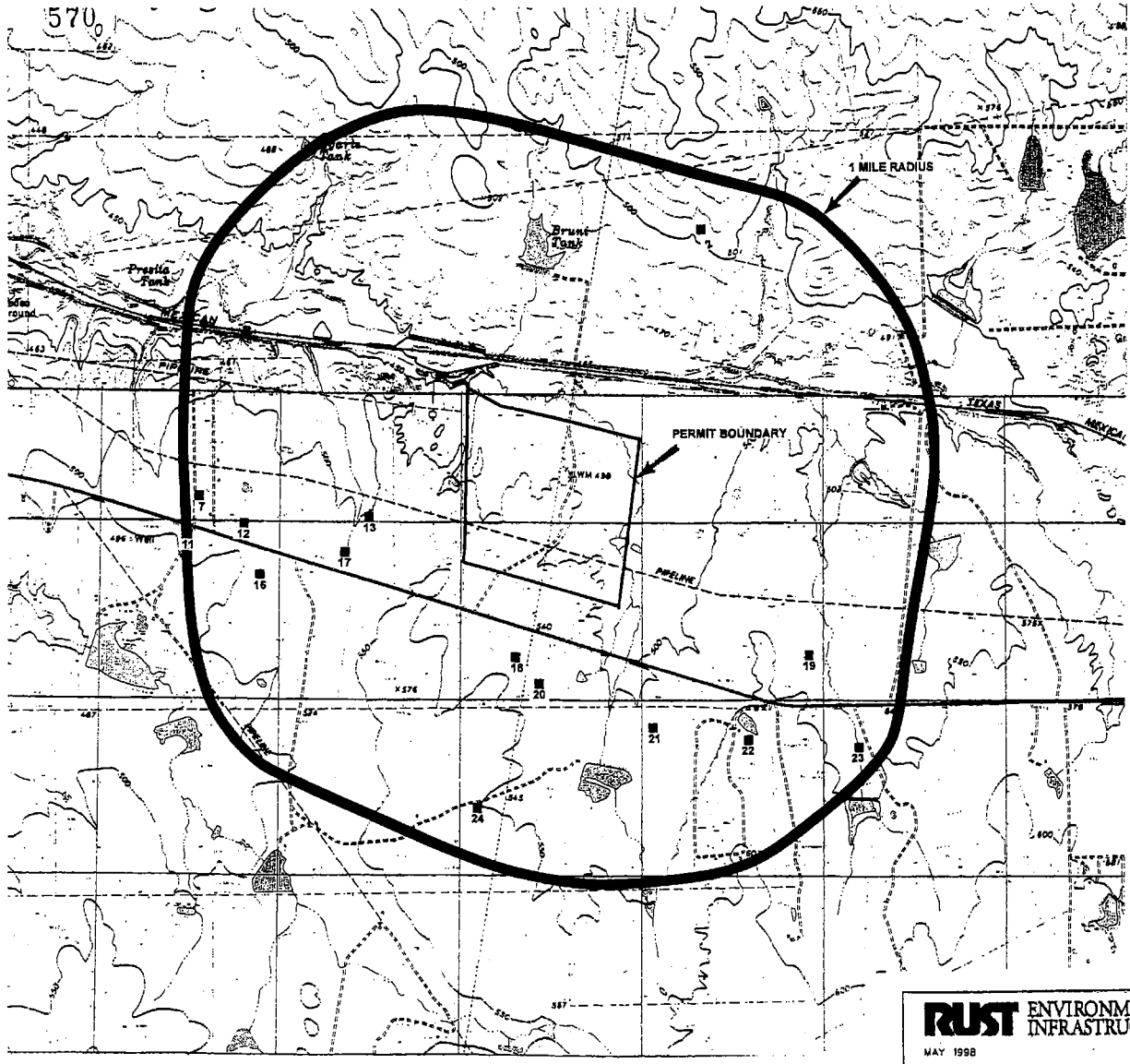
Project: 69396

CADD File: 69396\9396GLM2.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

REGIONAL GEOLOGIC CROSS-SECTION

ATTACHMENT 4-4



LEGEND:

■ 14 WATER WELLS WITHIN ONE MILE OF PERMIT BOUNDARY

FOR OTHER SYMBOLS REFER TO TOPOGRAPHIC MAP SYMBOLS, DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY, NATIONAL MAPPING DIVISION.

NOTES:

REFER TO TABLE 4-2 FOR A SUMMARY OF WELL INFORMATION REGARDING THE WELLS SHOWN ON THIS MAP.

QUADRANGLE LOCATION

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED PROFESSIONAL ENGINEER

J. Brian Dudley 6/14/99

0 1000 2000
SCALE IN FEET

BASE MAP SOURCE: LAREDO EAST, 1980, LAREDO SOUTH, 1979, USGS 7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAPS.

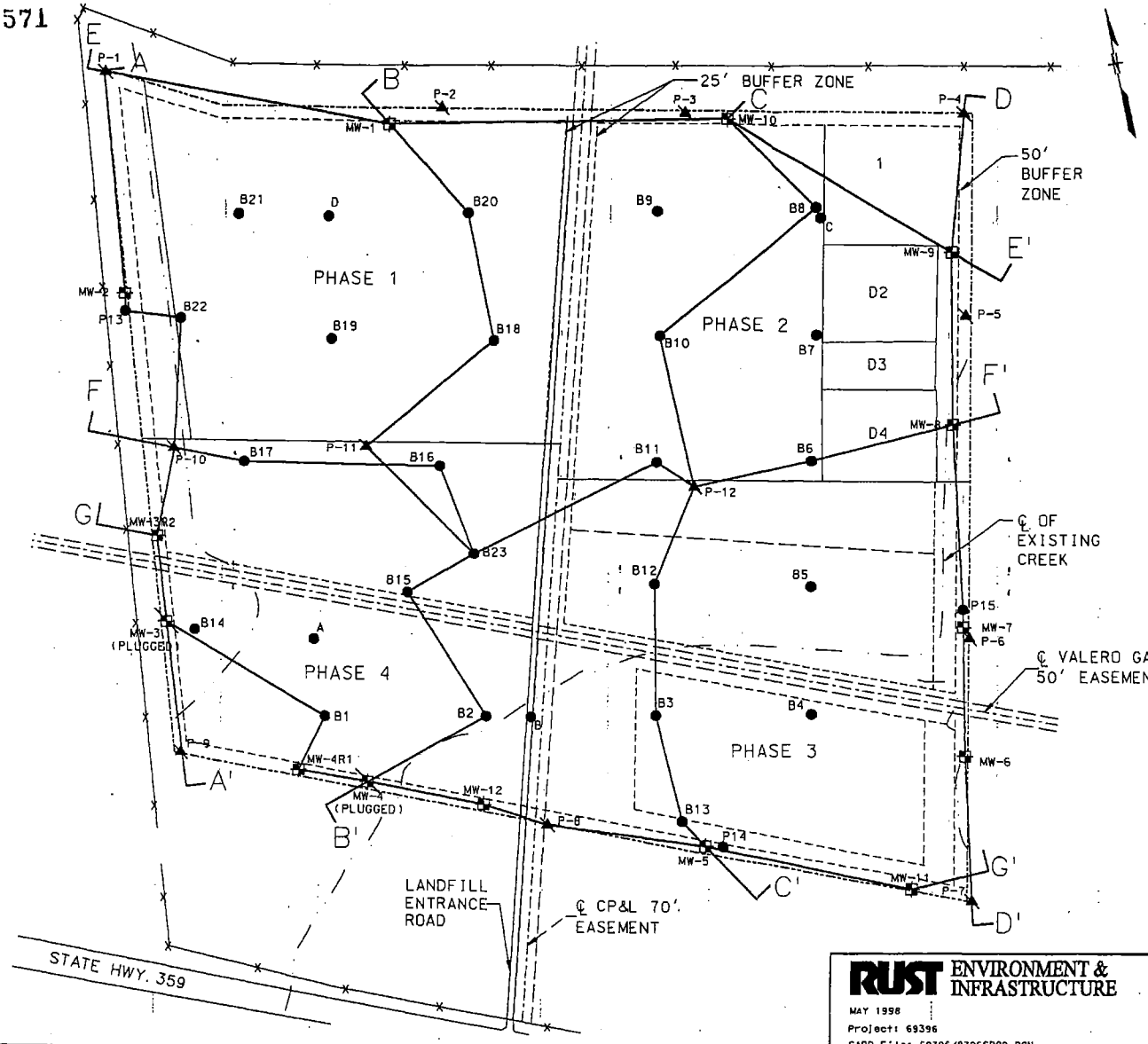
RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998
Project: 69396
CADD File: 693965W--97CONS\9396TM10.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

WELL LOCATION MAP ATTACHMENT 4-5

571



LEGEND

- PROPERTY LINE
- CREEK LINE
- EXISTING FENCE
- 50' BUFFER LINE
- EASEMENT LINE
- B6 — BORING
- MW-8 — MONITORING WELL
- P-6 — PLUGGED & ABANDONED PIEZOMETER (3rd Qtr. '96)
- MW-4 — PLUGGED & ABANDONED MONITORING WELL
- G — G' — CROSS-SECTION LOCATION

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STATE OF TEXAS
J. BRIAN DUDLEY
59831
REGISTERED PROFESSIONAL ENGINEER

6/14/99

0 400 800
SCALE IN FEET

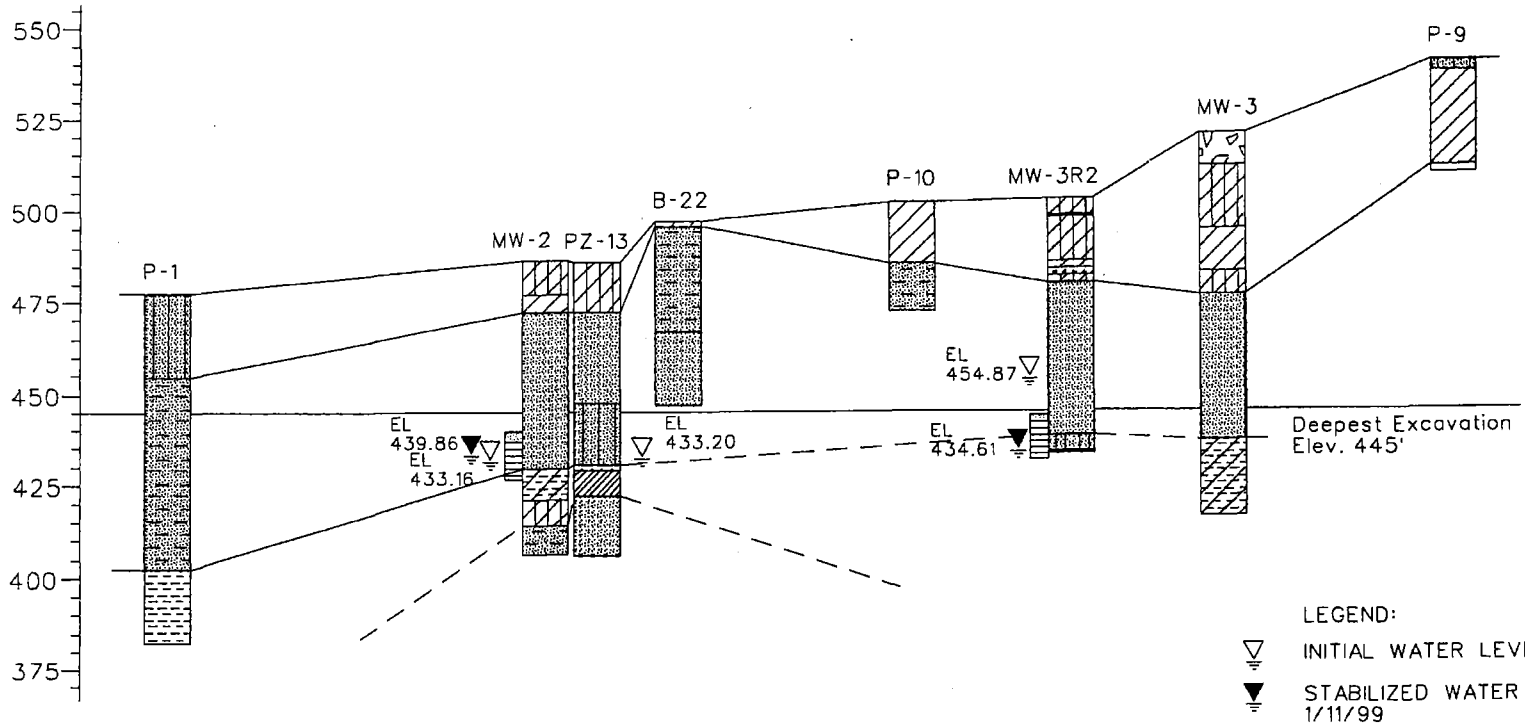
RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998
Project: 69396
CADD File: 69396/9396SP02.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693A
Webb County, Texas

BORING & CROSS-SECTION LOCATION PLAN

ATTACHMENT 4-6



NOTE: LITHOLOGY LEGEND FOLLOWS ATTACHMENT 4-13

0 200 400

APPROXIMATE SCALE IN FEET

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

Project: 69396

CADD File: 69396\FIGCSAF.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693
Webb County, Texas

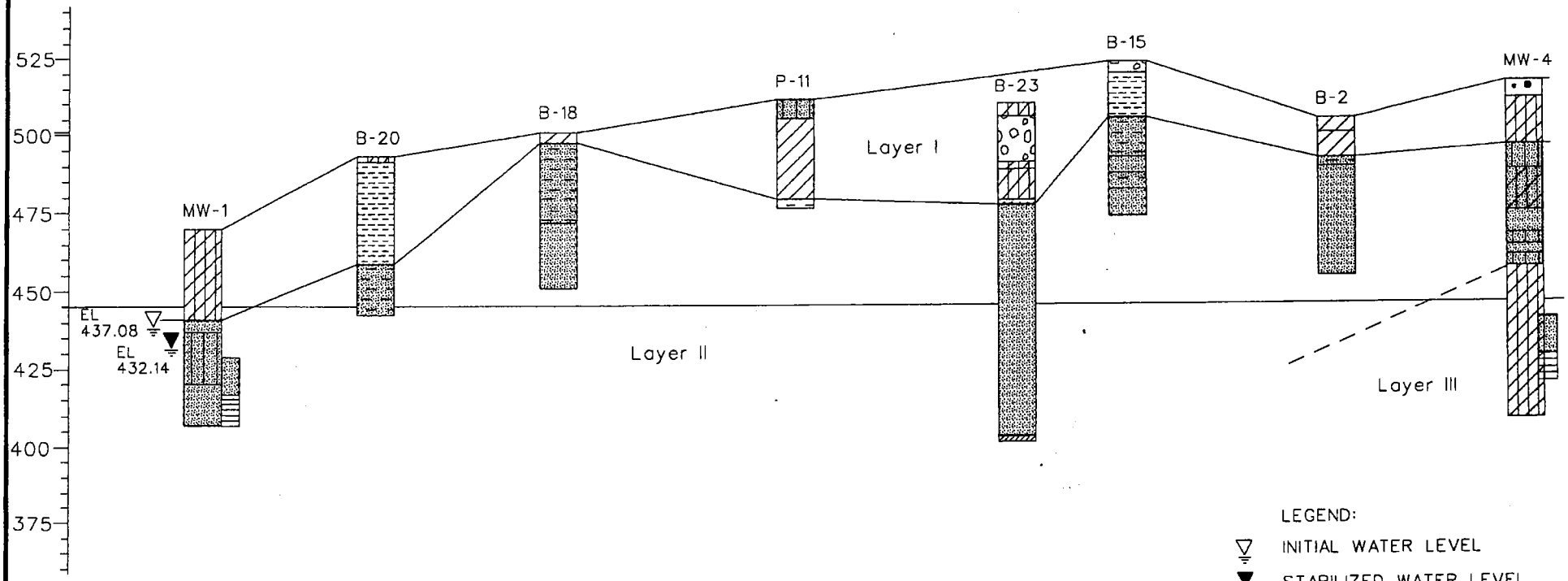
CROSS SECTION A-A'

ATTACHMENT 4-7

573

B
North

B'
South



LEGEND:

▽ INITIAL WATER LEVEL

▼ STABILIZED WATER LEVEL
1/11/99

NOTE: LITHOLOGY LEGEND
FOLLOWS ATTACHMENT 4-13

0 200 400

APPROXIMATE
SCALE IN FEET

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

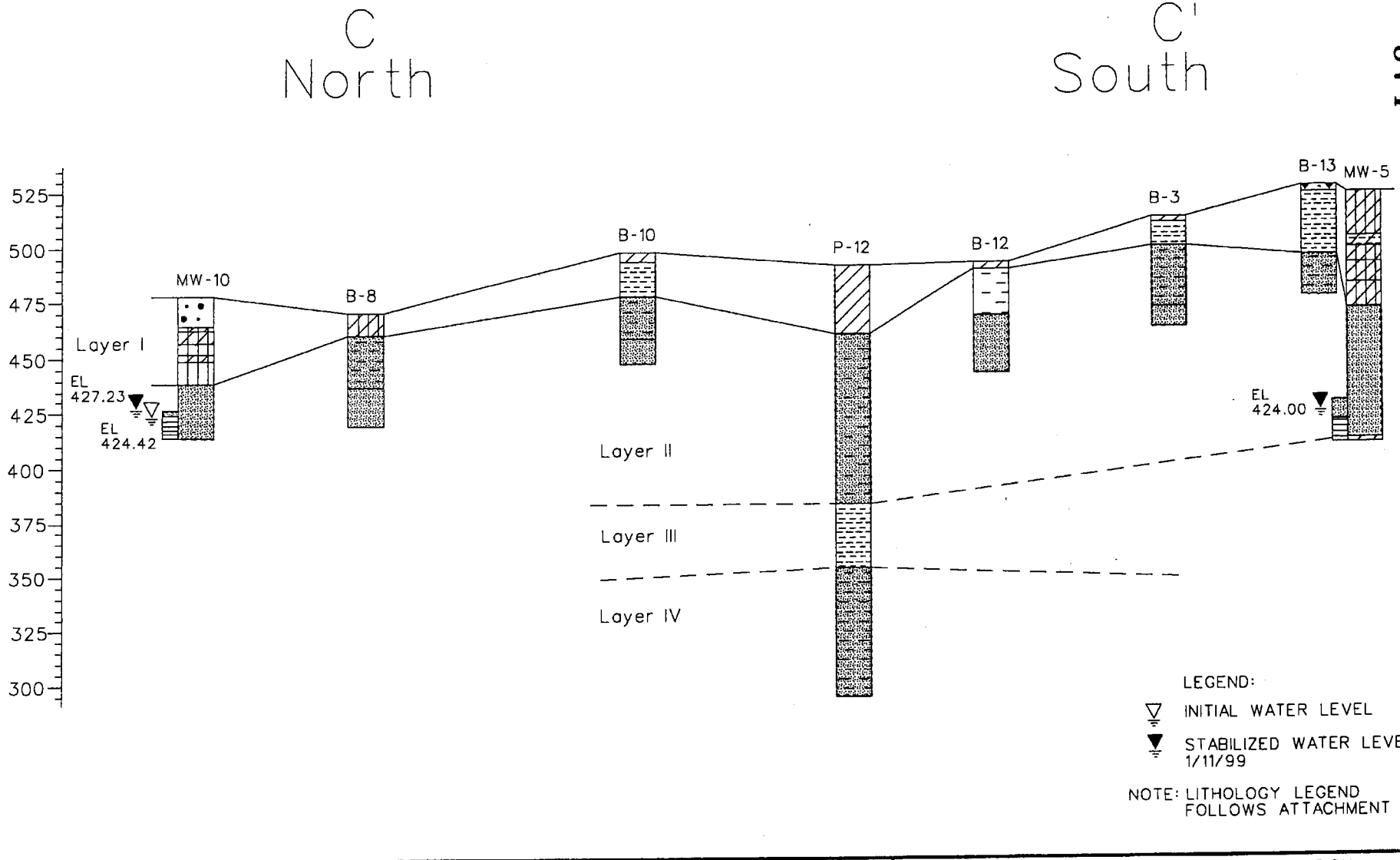
Project: 69396

CADD File: 69396\FIGCSBF.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693
Webb County, Texas

CROSS SECTION B-B'

ATTACHMENT 4-8



RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

Project: 69396

CADD File: 69396\FIGCSCF.DGN

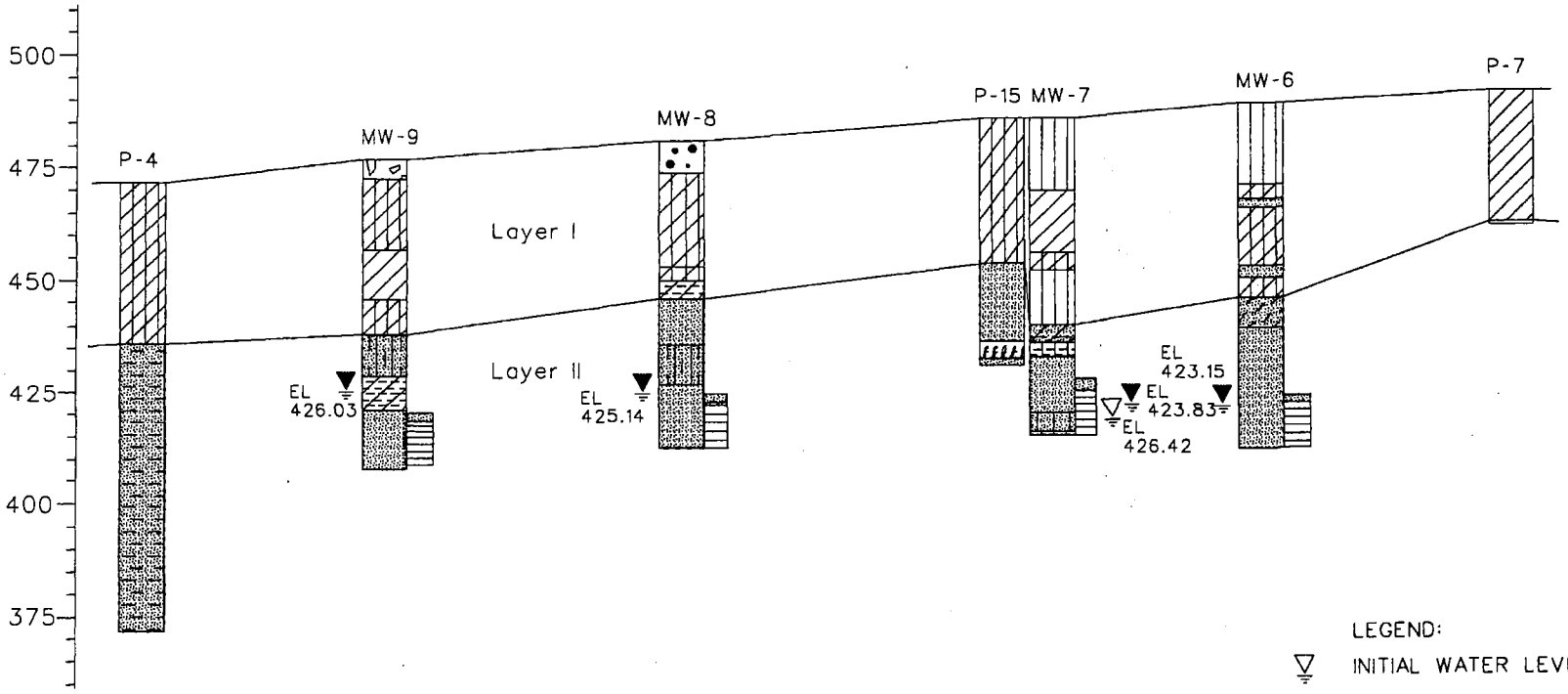
LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693
Webb County, Texas

CROSS SECTION C-C'

ATTACHMENT 4-9

D
North

D'
South



LEGEND:

▽ INITIAL WATER LEVEL

▼ STABILIZED WATER LEVEL 1/11/99

NOTE: LITHOLOGY LEGEND FOLLOWS ATTACHMENT 4-13

0 200 400

APPROXIMATE SCALE IN FEET

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

Project: 69396

CADD File: 69396\FIGCSDF.DGN

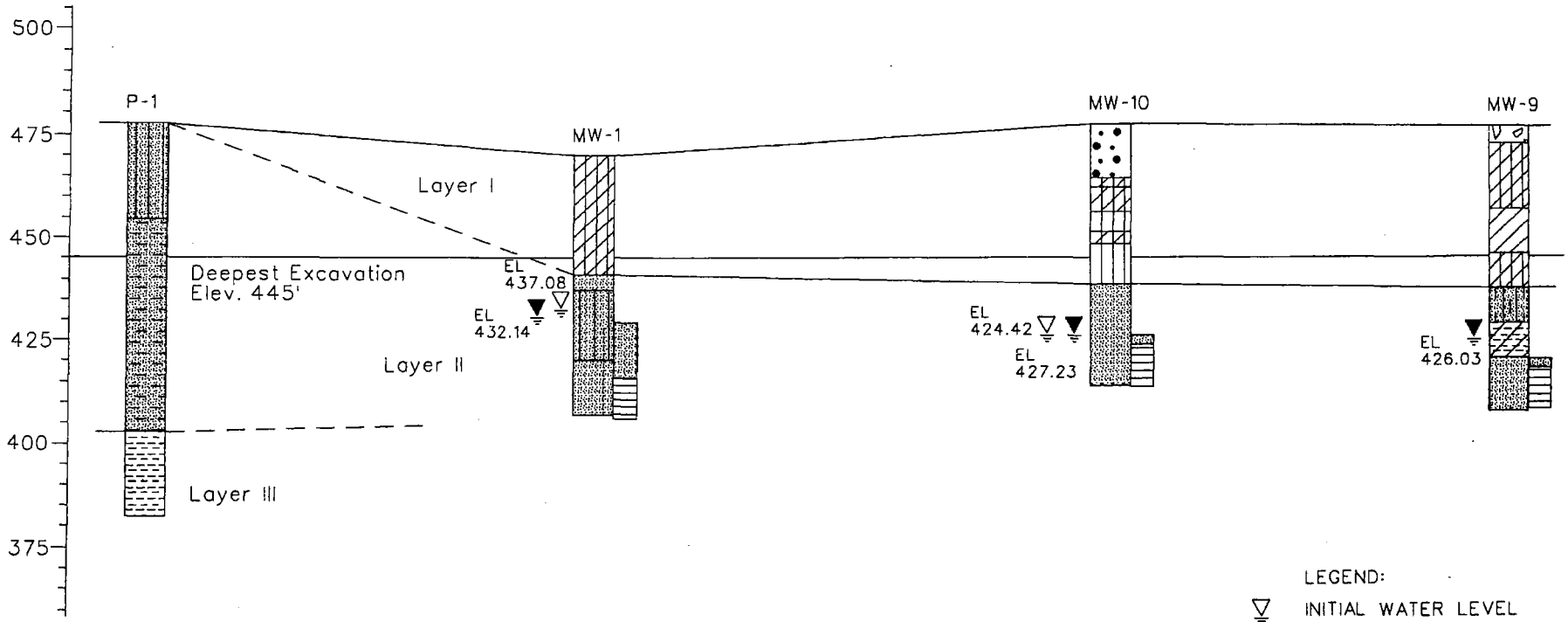
LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693
Webb County, Texas

CROSS SECTION D-D'

ATTACHMENT 4-10

E
West

E'
East



LEGEND:

▽ INITIAL WATER LEVEL

▼ STABILIZED WATER LEVEL
1/11/99

NOTE: LITHOLOGY LEGEND
FOLLOWS ATTACHMENT 4-13

0 200 400
APPROXIMATE
SCALE IN FEET

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

Project: 69396

CADD File: 69396\FIGCSEF.DGN

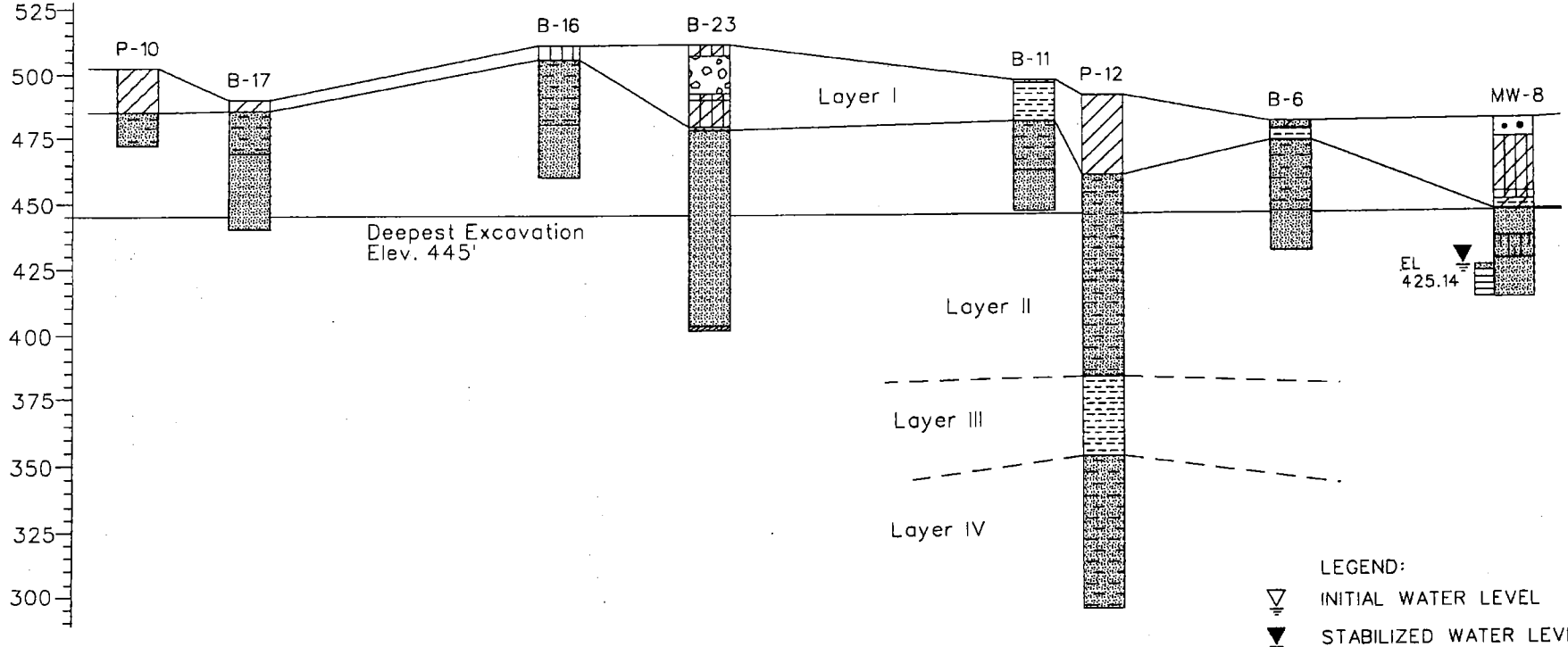
LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693
Webb County, Texas

CROSS SECTION E-E'

ATTACHMENT 4-11

F West

F' East



LEGEND:

▽ INITIAL WATER LEVEL

▼ STABILIZED WATER LEVEL 1/11/99

NOTE: LITHOLOGY LEGEND FOLLOWS ATTACHMENT 4-13

0 200 400

APPROXIMATE SCALE IN FEET

RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

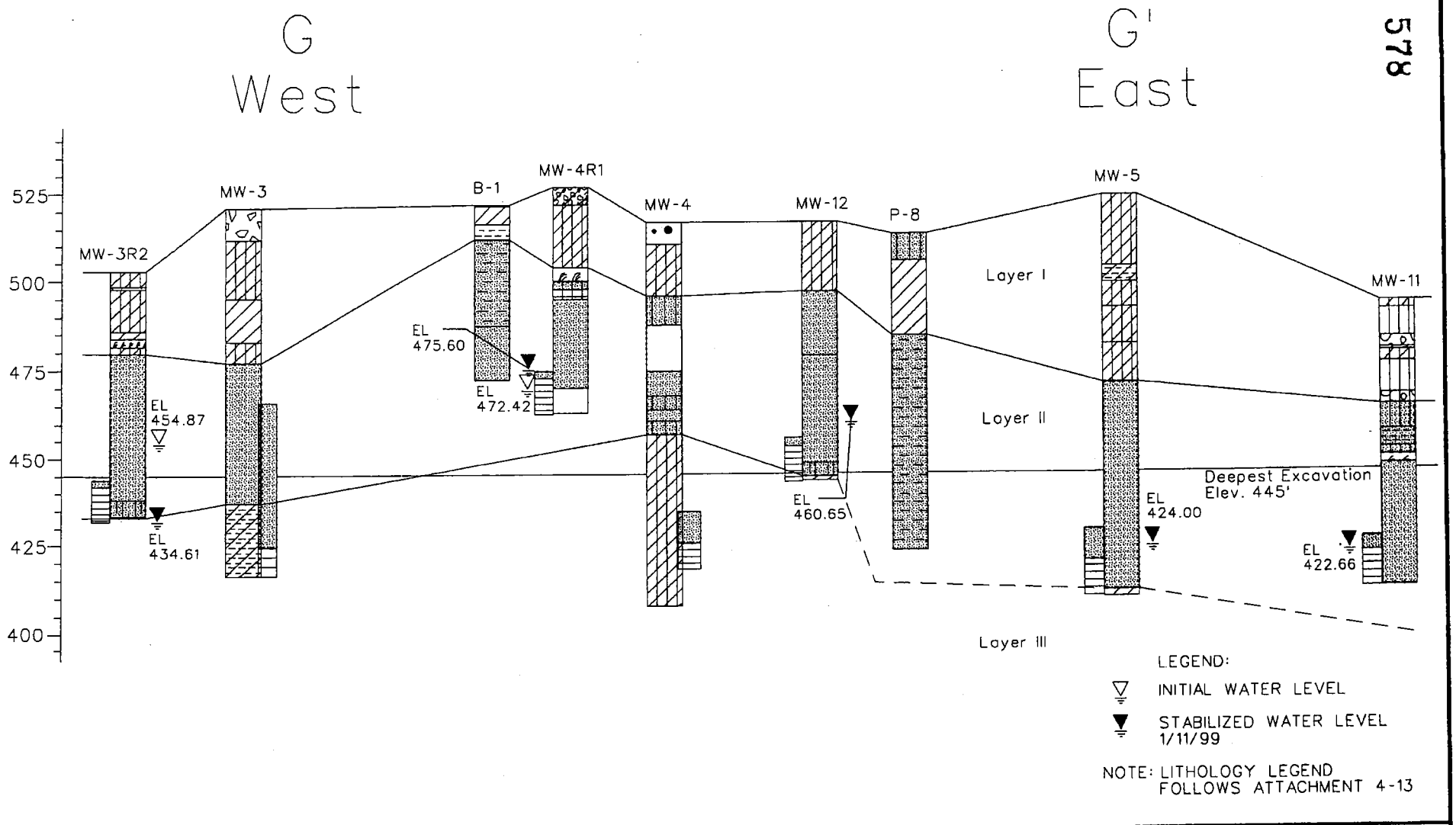
Project: 69396

CADD File: 69396\FIGCSFF.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDNENT APPLICATION No. MSW-1693
Webb County, Texas

CROSS SECTION F-F'

ATTACHMENT 4-12



RUST ENVIRONMENT & INFRASTRUCTURE

MAY 1998

Project: 69396

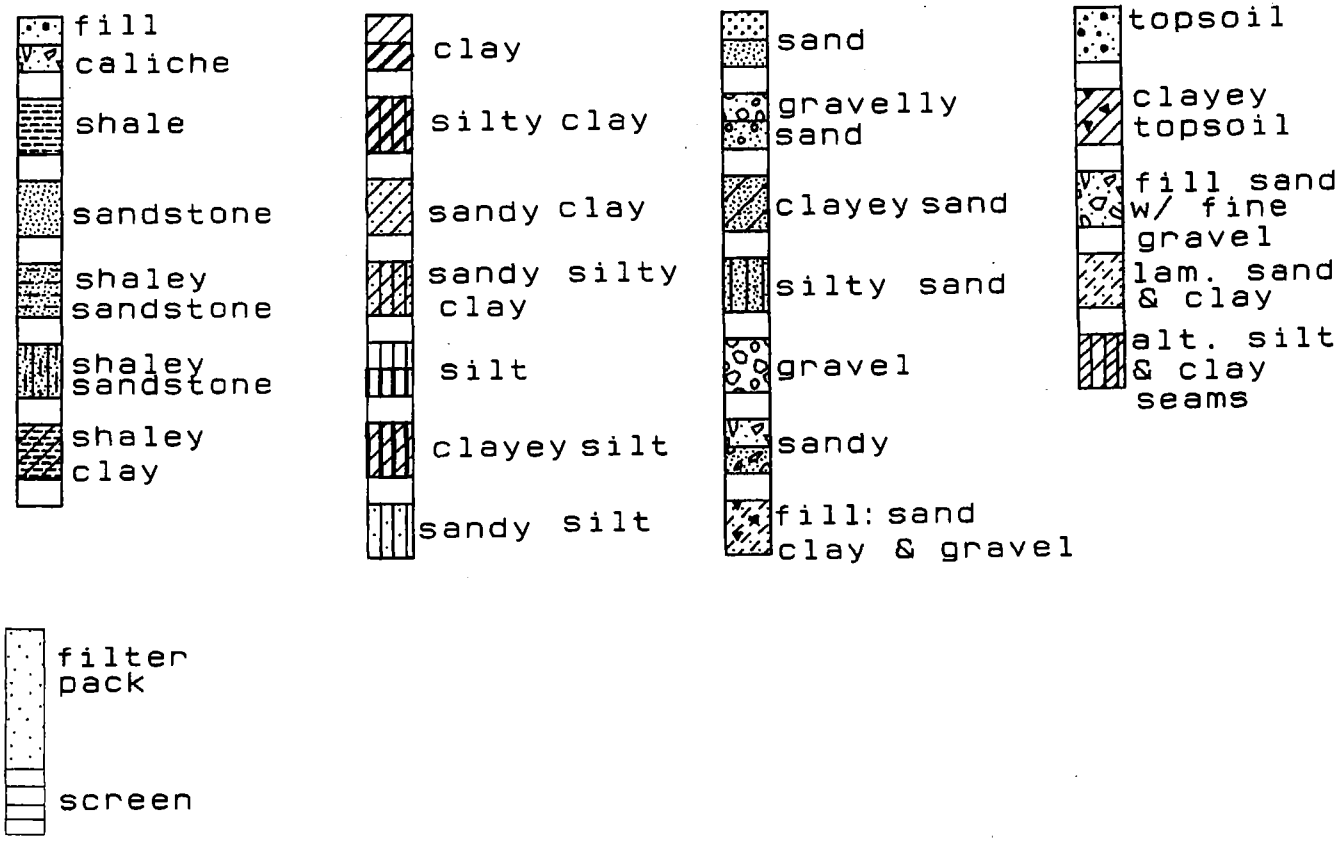
CADD File: 69396\FIGCSGF.DGN

LAREDO SANITARY LANDFILL VERTICAL EXPANSION
PERMIT AMENDNENT APPLICATION No. MSW-1693
Webb County, Texas

CROSS SECTION G-G'

ATTACHMENT 4-13

BORING LOG LEGEND



Appendix A

Final Report Groundwater Characterization Study

Huntingdon Engineering & Environmental

October 1994

581

FINAL REPORT
GROUNDWATER CHARACTERIZATION STUDY
City of Laredo Landfill
Webb County, Texas
MSW Permit No. 1693

Prepared for:

CITY OF LAREDO
Webb County, Texas

David Wuerch
Project Manager

Mark P. Hemingway
Senior Technical Review

Prepared by:

HUNTINGDON ENGINEERING & ENVIRONMENTAL
4150-B Freidrich Lane
Austin, Texas 78744

October 1994

ESW\1993\LAREDO\93-148\940902RE.DW

582

TABLE OF CONTENTS

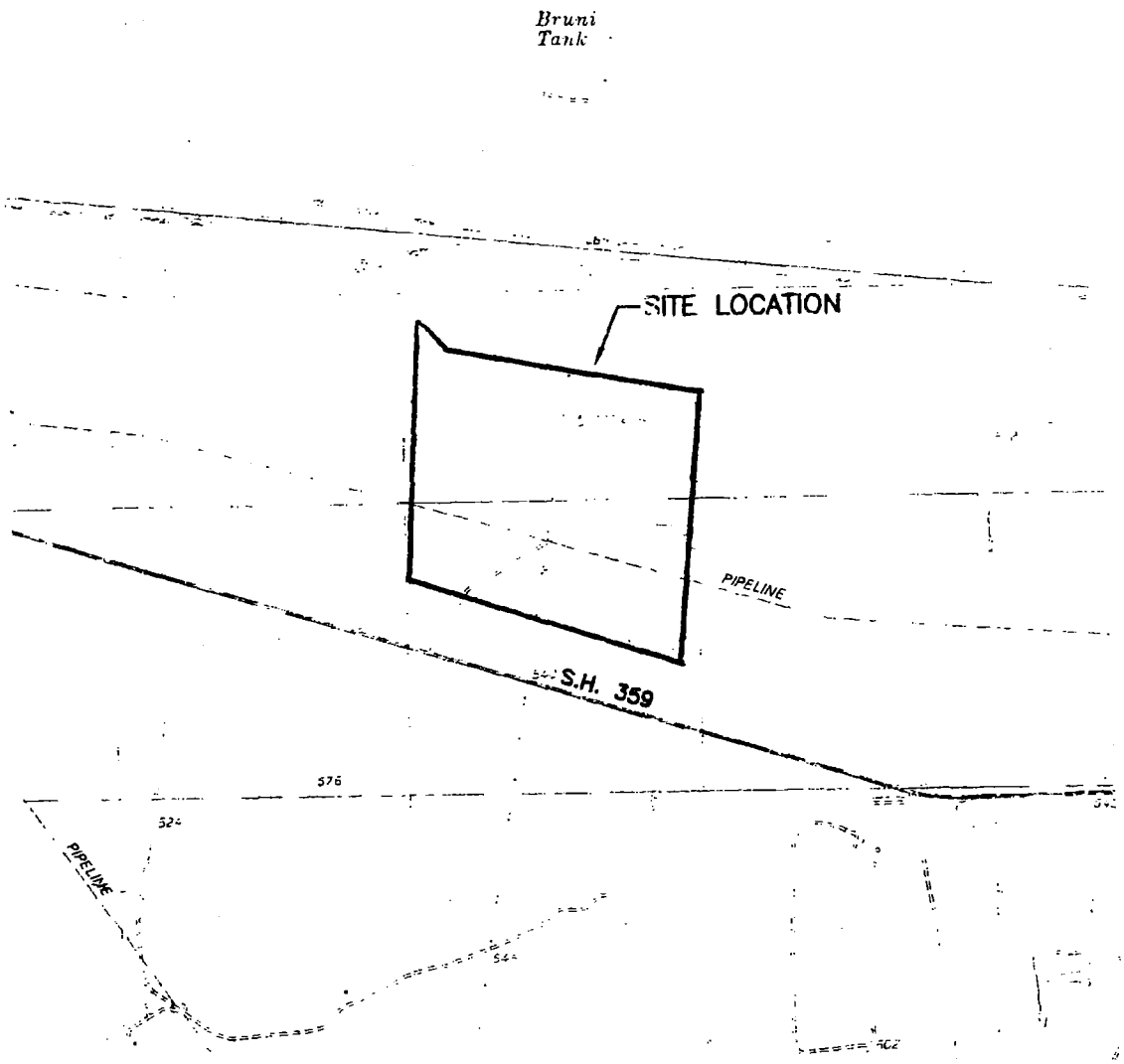
1.0 INTRODUCTION

Huntingdon Engineering & Environmental/SWL Environmental Services (Huntingdon)* was contracted by the City of Laredo to perform a groundwater characterization study at the City of Laredo Landfill (Municipal Solid Waste [MSW] Permit No. 1693) located in Webb County, Texas. The location of the site is indicated on Figure 1. The scope of work for the groundwater characterization study was defined in the workplan prepared by Huntingdon and approved by the Texas Natural Resource Conservation Commission (TNRCC) in October, 1993. In brief, the scope of work included piezometer installation and development, water level measurements, slug tests, data evaluation, and report preparation.

A preliminary report was prepared by Huntingdon in March, 1994 which discussed the field activities performed, and presented the initial water level data and slug test results. In addition to summarizing what was presented in the preliminary report, this final report presents all of the data collected during the six-month water level monitoring period. These data include depth to groundwater measurements and groundwater elevations, rainfall data, and a discussion of the regional geology and hydrogeology. The final report also includes recommendations on the number and locations of monitoring wells required for future site groundwater monitoring.

* SWL has been a wholly-owned holding of Huntingdon since 1990. The name change from Southwestern Laboratories/SWL Environmental Services to Huntingdon will be complete by the end of calendar year 1994.

584



N

0 500 1000 2000
(SCALE IN FEET)

BASE SOURCE MAP:
U.S.G.S 7.5 MIN.
LAREDO SOUTH &
LAREDO EAST
QUADRANGLES

SITE LOCATION
MAP

CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

Huntingdon

Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	506593-148
DRAWING NO:	93148300
DATE ISSUED:	08-18-1994

FIGURE NO.
1

TABLE 1
WATER-BEARING CHARACTERISTICS OF THE WILCOX AND CLAIBORNE GROUPS
City of Laredo Landfill
Webb County, Texas

SYSTEM	SERIES	GROUP	GEOLOGIC UNIT		APPROXIMATE THICKNESS (ft)		CHARACTER OF ROCKS		WATER-BEARING PROPERTIES	
Tertiary	Eocene	Claiborne	Yegua Formation		700 - 1,000+		Clay, silt with interbedded thin lignites and sandstones. Some minor beds of limestone and oyster shells are found.		Yields small quantities of slightly to moderately saline water to wells in the outcrop area.	
			Laredo Formation	Cook Mountain Formation	600 - 700	400 - 500	Glauconitic sand and clay. Some gypsiferous clay and impure limestones.	Fossiliferous clay and shale. Some interbedded sandstone and limestone.	Yields small to moderate quantities of fresh to moderately saline water to wells	Yields small quantities of slightly to moderately saline water to wells.
				Sparta Sand		40 - 200		Medium to fine sand. Some interbedded clay.		Yields small to moderate quantities of fresh to moderately saline water to wells.
			El Pico Clay	Weches Formation	700 - 1,500	50 - 200	Clay with interbedded sandstones, claystones, and lignite coal lenses.	Fossiliferous, glauconitic shale and sand.	Yields small to moderate quantities of fresh to very saline water to wells.	Not known to yield water to wells.
				Queen City Sand		500 - 1,400		Marine, medium to fine sand with interbedded clay and shale.		Yields small to moderate quantities of fresh to slightly saline water to wells.
			Bigford Formation	Reklaw Formation	200 - 900	200 - 400	Sands with interbedded silts and shales. Plant remains are abundant.	Clay with interbedded glauconitic sand.	Yields small to moderate quantities of fresh to very saline water to wells.	Yields small quantities of slightly to moderately saline water to wells in or near the outcrop.
			Carrizo Sand		150 - 1,200		Coarse to fine sand, massive, crossbedded with a few partings of carbonaceous clay.		Principal aquifer in the area. Yields moderate to large quantities of fresh to slightly saline water to wells.	
		Wilcox			0 - 2,800		Interbedded sand, clay, and silt with discontinuous beds of lignite. The shale and clay sometimes contain gypsum.		Yields small to moderate quantities of fresh to slightly saline water to wells in the northern and western parts of the area.	

Source: Modified from Texas Water Development Board Report 210, Page 5.

2.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

2.1 Physiography, Topography, and Climate

The landfill site is located approximately 2.5 miles east of the City of Laredo, in southwestern Webb County, Texas. The topography of the area is relatively flat to undulating, with rolling hills present in a few locations. The principal drainage is the Rio Grande, which forms the southern boundary of Webb County, and flows southeastward into the Gulf of Mexico.

The climate of Webb County is characterized by long, hot summers and winters which are cool and fairly short. An average annual precipitation of 20.14 inches was recorded at the City of Laredo for the period from 1951 through 1980 (Bomar, 1983).

2.2 Stratigraphy

The geologic formations which crop out in Webb County range in age from Eocene to Holocene. Figure 2 is a geologic map of the area. In Webb County, the geologic formations crop out in belts that roughly parallel the Gulf Coast, with younger strata closer to the coast (east) and older ones further inland (west). Table 1 details the stratigraphy and water-bearing properties of the rock units that occur in the area.

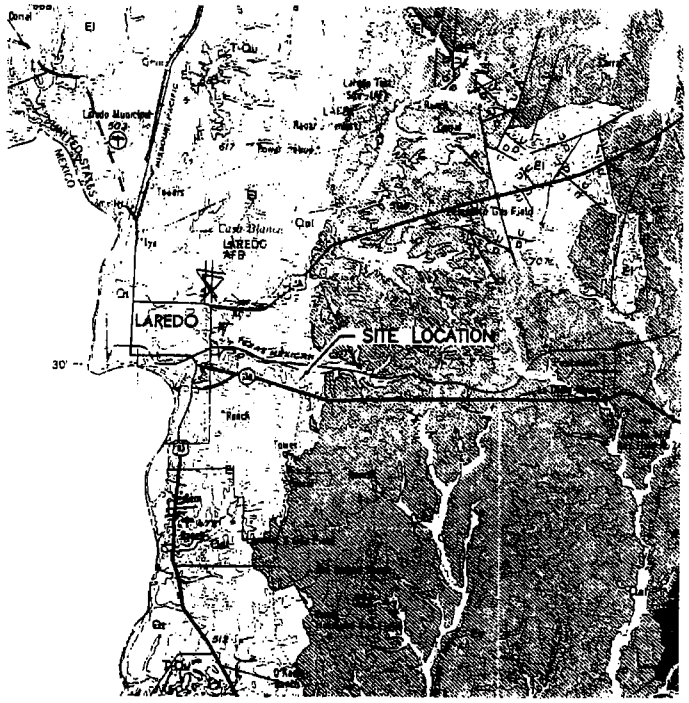
As shown on Figure 2, the site is situated on the outcrop of the Laredo Formation. This formation is composed mostly of sandstones and clays. The sandstones are described as being, in part, glauconitic, micaceous, ferruginous, cross bedded, and red and brown in color. The clays weather orange-yellow and contain abundant marine fossils. The thickness of the Laredo Formation in the vicinity of the site is approximately 620 feet (Bureau of Economic Geology, 1976) Underlying the Laredo Formation, from youngest to oldest, are the El Pico Clay, Bigford Formation, Carrizo Sand, and Wilcox Group, all of Eocene age. These formations crop out in northwest Webb County.

2.3 Hydrogeology

The Carrizo Sand Formation is the most important water-bearing unit in the northern half of Webb County. The Carrizo Sand Formation and the underlying Wilcox Group comprise the

Carrizo-Wilcox Aquifer. This is one of the most extensive aquifers in Texas, furnishing water to wells in a wide belt extending from the Rio Grande across the Arkansas and Louisiana borders (Texas Water Commission, 1989). However, in the southern portion of Webb County, the water quality of the Carrizo-Wilcox aquifer is poor, and it is not an important source of drinking water. The Laredo Formation provides small quantities of fresh to slightly saline water to wells in the vicinity of Laredo as well as in the central portion of Webb County (Texas Water Development Board, 1977).

588



EXPLANATION

SEDIMENTARY ROCKS

Recent (Holocene)	Alluvium	QUATERNARY	TERTIARY
	Windblown deposits (Qds, Qs, Qss)		
Pleistocene	Fluviatile terrace deposits (Qf)		
	Beaumont Formation (Qb)		
	Lissie Formation (Ql)		
Pleistocene or Pliocene	Uvalde Gravel (T-Qu)	QUATERNARY or TERTIARY	
Pliocene	Goliad Formation (Pg)	TERTIARY	
Miocene	Fleming Formation and Oakville Sandstone undivided		

Miocene and Oligocene

- Catahoula and Frio Formations (Mof, Of)
- Jackson Group

EOCENE

- Yegua Formation (Ey)
- Laredo Formation (El)
- El Pico Clay (Elp)
- Bigford Formation (Eb)

Scale 1:250,000

5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

5 0 5 10 Nautical Miles

CONTOUR INTERVAL 50 FEET
WITH SUPPLEMENTARY CONTOURS AT 25 FOOT INTERVALS

N

BASE SOURCE MAP:
GEOLOGIC ATLAS OF TEXAS
LAREDO SHEET, REVISED 1976

REGIONAL GEOLOGIC MAP

CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	508593-148
DRAWING NO:	93148301
DATE ISSUED:	08-18-1994

FIGURE NO. 2

3.0 PIEZOMETER INSTALLATION

Huntingdon personnel supervised the installation of twelve piezometers at the site from November 11 through December 3, 1993. The locations of the twelve piezometers, designated P-1 through P-12, are shown on Figure 3. All drilling activities were performed by Texcor Field Services, Inc. using a Mobile B-53 drill rig equipped for hollow-stem augering, and air and wet rotary drilling. Hollow-stem augering was used to drill through surficial silty sands and clays. Initial attempts to use air rotary techniques to drill through underlying shaly sandstone bedrock were unsuccessful. Wet rotary techniques were then used to advance the borings through the sandstone and shale bedrock to termination depth.

During hollow-stem augering, soil samples were collected at periodic depths using a split spoon sampling device. Soil cuttings brought to the surface by the augers were also used to describe the lithology. Rock samples were obtained continuously during wet rotary drilling using a double-tube core barrel. The borings were logged by a geologist familiar with environmental/geotechnical drilling and investigation techniques. Soil samples obtained were described by the field geologist using terminology from the Unified Soil Classification System.

The piezometers were installed within the open boreholes and are constructed of two-inch diameter, Schedule 40 polyvinyl chloride (PVC) pipe with 0.010 inch factory-slotted well screen. The eight shallow piezometers are screened at the contact between surficial silty sands and clays and an upper shaly sandstone discussed in Section 5.1. This contact was screened in order to determine if any perched groundwater exists beneath the site. The four deep piezometers are screened within the upper shaly sandstone. The shallow piezometers have screen lengths of 10 feet, while the deep piezometers have screen lengths of 20 feet. A 20/40 mesh silica sand was utilized to filter pack the piezometers from the bottom of the well screen to several feet above the screen. The filter pack was sealed with two feet of ¼-inch diameter hydrated bentonite pellets. An annular seal of bentonite grout was emplaced from the top of bentonite seal up to the surface. The piezometers were completed above grade with two-foot square concrete pads and locking steel wellhead protectors. Completion details are contained on the piezometer construction logs in Appendix A.

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4.0 TOPOGRAPHY AND SURFACE DRAINAGE

The site is crossed by two drainage ways which flow predominately toward the north across the site (see Figure 3). Maximum elevation change across the site is approximately 70 feet, with the highest elevation of approximately 540 feet above Mean Sea Level (MSL) in the southwest corner; and the lowest elevation of approximately 470 feet above MSL in the drainage near the northeast corner.

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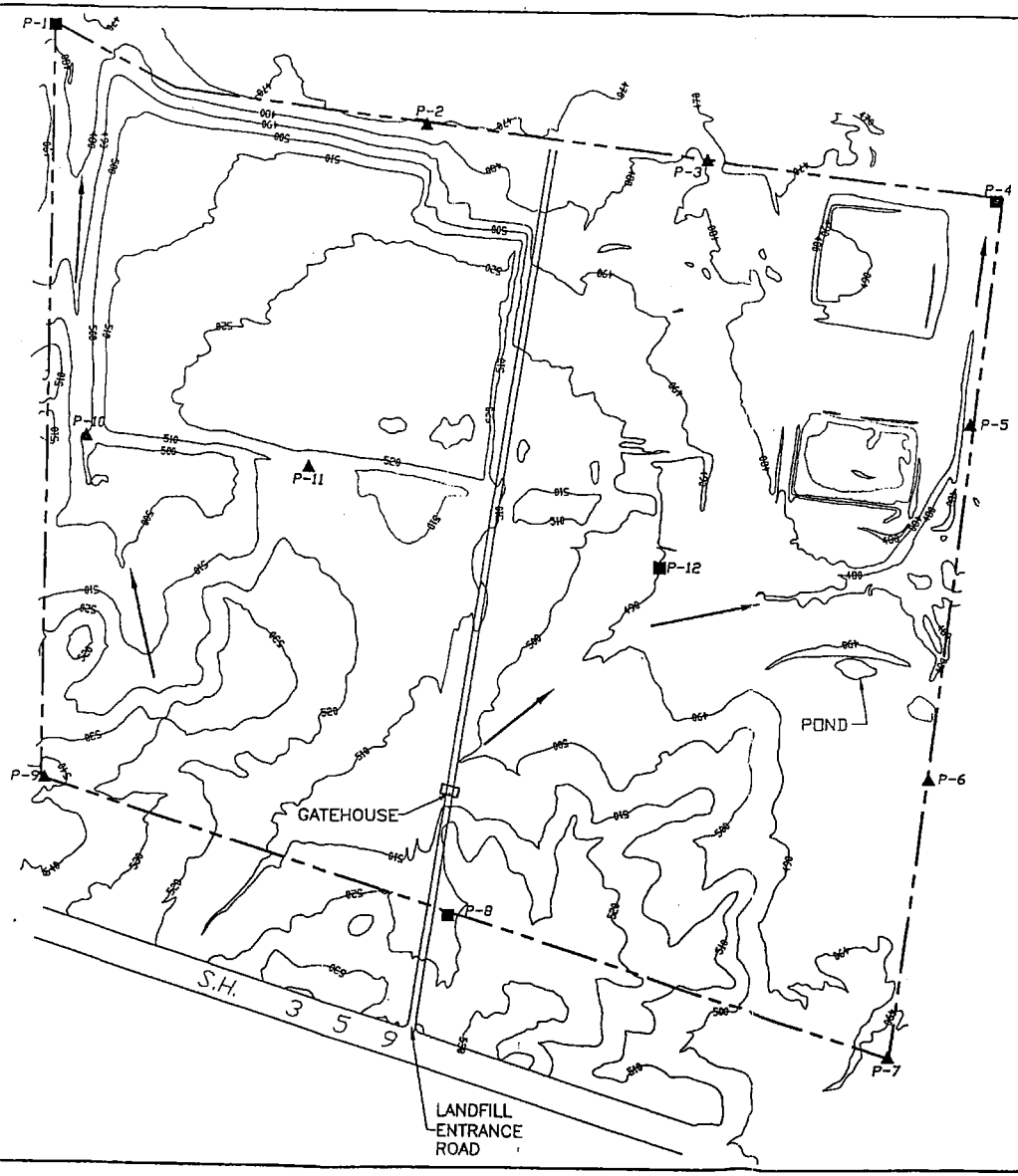

N

0 100 200 400
(SCALE IN FEET)

LEGEND:

- PROPERTY LINE
- P-1 DEEP PIEZOMETER LOCATION
- P-2 SHALLOW PIEZOMETER LOCATION
- DIRECTION OF SURFACE DRAINAGE
- SURFACE CONTOURS IN FEET ABOVE MEAN SEA LEVEL (INTERVAL = 10 FT.)

REV. NO.	DATE	DESCRIPTION	DR BY	APP BY

PIEZOMETER LOCATION MAP

CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

Huntingdon — Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	506593-148
DRAWING NO:	93148258
DATE ISSUED:	08-19-1994

FIGURE NO. 3

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5.0 SITE GEOLOGY AND HYDROGEOLOGY

5.1 Stratigraphy

The following is a generalized description of the stratigraphy encountered during piezometer installation:

- Clay - Surficial unit present in most borings, ranging in thickness from 0 to 36 feet. Varying in color from tan and brown to maroon and gray, contains some silt, sand, and gravel.

- Silty Sand - Surficial unit present in remainder of borings ranging in thickness from 3 to 23 feet. The unit is tan to brown in color and contains some gravel.

- Upper Shaly Sandstone - Present below the clay and silty sand units, and encountered in all borings. The unit is greenish-gray in color, containing mica, glauconite, and scattered fossils, with occasional highly cemented (calcareous) layers. Borings for the eight shallow piezometers were terminated within the upper portion of this unit. Borings for two of the deep piezometers (P-1 and P-12) completely penetrated this unit. Thickness of the unit in these borings ranged from 52 to 77 feet. Borings for the two other deep piezometers (P-4, P-8) were terminated within the unit.

- Shale - Present beneath the shaly sandstone unit in borings P-1 and P-12. This unit is greenish-gray in color and contains scattered fossils. Thickness of the unit was 30 feet in P-12. The boring for P-1 was terminated within this unit.

- Lower Shaly Sandstone - Present beneath the shale unit in boring P-12. The boring for P-12 was terminated within this unit. Minimum thickness of the unit in P-12 was 59 feet. This unit is similar in color and composition to the upper shaly sandstone unit.

5.2 Hydrostratigraphic Units

Observations made during the drilling of the shallow piezometers indicated that groundwater was not present within the surficial deposits (i.e., the clay and silty sand) above the upper shaly sandstone unit. Groundwater observations could not be made during the drilling of the deep piezometers because of the presence of drilling fluids in the boreholes. Only after the drilling operations were complete, and the residual drilling fluids had been bailed out of the deep piezometers, was it determined that a water-bearing zone exists within the upper shaly sandstone unit. Based upon the depths to the water-bearing zone and subsequent equilibrated water levels,

it appears that the water-bearing zone is under unconfined to semiconfined conditions. The soil boring logs and TNRCC well reports (WWD-012) have been included in Appendix A.

5.3 Groundwater Flow Determination

From December 9 to December 17, 1993, the four deep piezometers were developed to remove the residual drilling fluids introduced during the drilling, and to bring the piezometers into proper hydraulic connection with the water bearing zone. Groundwater was not present within the shallow piezometers, and therefore they were not developed. Piezometers containing groundwater were developed by bailing and surging with a PVC ball type bailer. A submersible pump was also utilized during development. Development was considered complete after the removal of a minimum of 20 casing volumes of groundwater from each piezometer. A casing volume is defined as the volume of water present within the riser and screen during static conditions.

In order to determine groundwater elevations, the rim of each piezometer riser was surveyed and referenced to MSL by a registered land surveyor on December 15, 1993. Beginning in January 1994, monthly depth to water measurements were collected by Huntingdon personnel. Measurements were made from the top of the PVC riser using an electronic water level meter accurate to within 0.01 feet. The eight shallow piezometers were dry for the entire six-month monitoring period. Table 2 contains the depths to water, top of casing elevations, and resultant groundwater elevations from the four deep piezometers from January 11 to June 27, 1994.

The groundwater elevations from Table 2 were graphed versus time to depict seasonal fluctuations. The graph has been included in Appendix B along with copies of the field forms used in the preparation of Table 2. As shown in the graph, groundwater elevations have not fluctuated significantly in any of the piezometers during the six-month monitoring period. Piezometer P-8 experienced the greatest fluctuation in groundwater elevations ranging from a low of 433.87 feet above MSL on March 29, 1994, to a high of 434.64 feet above MSL on April 27, 1994. Piezometer P-1 experienced the least amount of change with a low of 433.11 feet above MSL on March 29, 1994 to a high of 433.53 feet above MSL on April 27, 1994.

TABLE 2
GROUNDWATER ELEVATIONS
City of Laredo Landfill
Webb County, Texas

PIEZOMETER	TOP OF CASING ELEVATION (FT. ABOVE MSL)	DEPTH TO WATER (1/11/94)	GROUNDWATER ELEVATION (1/11/94)	DEPTH TO WATER (2/17/94)	GROUNDWATER ELEVATION (2/17/94)	DEPTH TO WATER (3/29/94)	GROUNDWATER ELEVATION (3/29/94)	DEPTH TO WATER (4/27/94)	GROUNDWATER ELEVATION (4/27/94)	DEPTH TO WATER (5/27/94)	GROUNDWATER ELEVATION (5/27/94)	DEPTH TO WATER (6/27/94)	GROUNDWATER ELEVATION (6/27/94)
P-1	479.81	46.60	433.21	46.56	433.25	46.70	433.11	46.28	433.53	46.43	433.38	46.49	433.32
P-4	473.33	46.36	426.97	46.42	426.91	46.60	426.73	46.11	427.22	46.29	427.04	46.35	426.98
P-8	515.06	80.83	434.23	80.74	434.12	81.19	433.87	80.42	434.64	80.65	434.41	80.84	434.22
P-12	494.12	68.00	426.12	68.03	426.09	68.15	425.97	67.68	426.44	67.90	426.22	67.94	426.18

NOTE: The 8 shallow piezometers (P-2, P-3, P-5, P-6, P-7, P-9, P-10, P-11) were dry for the entire monitoring period.

A groundwater contour map was prepared for March 29, 1994, which was the date the piezometers were at or near their seasonal low, as well as for April 27, 1994, the seasonal high. Figures 4 and 5 are groundwater elevation contour maps for March 29 and April 27, 1994, respectively. As shown in the figures, the groundwater flow direction in the water-bearing zone is to the southeast and northeast.

Rainfall data were also collected during the monitoring period by a weather observer for the National Weather Service located at the Laredo Airport. Table 3 contains the daily rainfall measurements from December 1, 1993 through June 30, 1994. A total of 8.8 inches of rainfall was recorded during the monitoring period. The wettest month was May, 1994, while the driest month was December, 1993. A graph of the biweekly rainfall totals has been included in Appendix B. As shown in the graph, the only significant rainfall events occurred during the first two weeks of May and June, 1994. During the same time periods, groundwater elevations did not increase significantly. Additionally, the eight shallow piezometers remained dry during the entire six-month monitoring period. This indicates that rainfall at the site is not a significant factor with respect to recharge of the water-bearing zone.

5.4 Aquifer Characterization

Rising head slug tests were conducted on the four deep piezometers by Huntingdon personnel on January 11 and 12, 1994. A PVC slug was used to displace water from each piezometer. The corresponding water level equilibration was recorded by a pressure transducer linked to a Hermit Environmental Data Logger, Model SE 1000C, manufactured by In-Situ Inc., of Laramie, Wyoming. The data was then plotted in graphical form on semi-logarithmic paper and analyzed by methods discussed in Bouwer and Rice (1976). For calculation purposes, the piezometers were assumed to partially penetrate a saturated zone with a thickness of 60 feet. Appendix C contains a description of the aquifer parameters, field data, graphs, and worksheets used in the analysis of the data. Table 4 contains the hydraulic conductivity (K) values determined from the slug tests.

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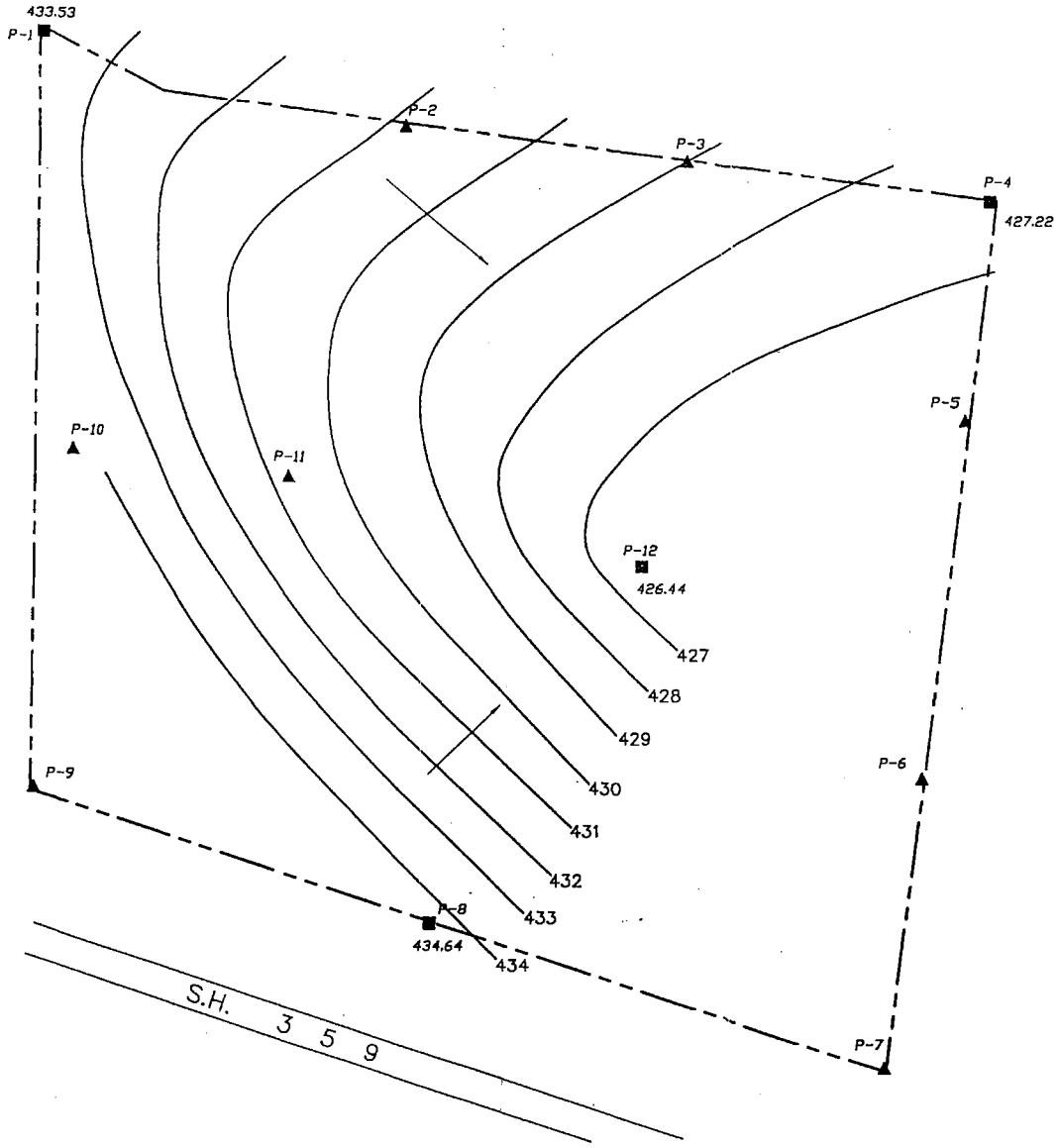
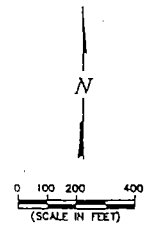




LEGEND:

- PROPERTY LINE
- P-1 ■ 433.53 — PIEZOMETER LOCATION WITH GROUNDWATER ELEVATION IN FEET ABOVE MSL SHOWN FOR PIEZOMETERS CONTAINING GROUNDWATER.
- P-2 ▲ — SHALLOW PIEZOMETER (DRY)
- GROUNDWATER FLOW DIRECTION
- 430 — GROUNDWATER ELEVATION CONTOUR LINE (INTERVAL = 1.0ft.)

REV. NO.	DATE	DESCRIPTION	DR BY	APP BY

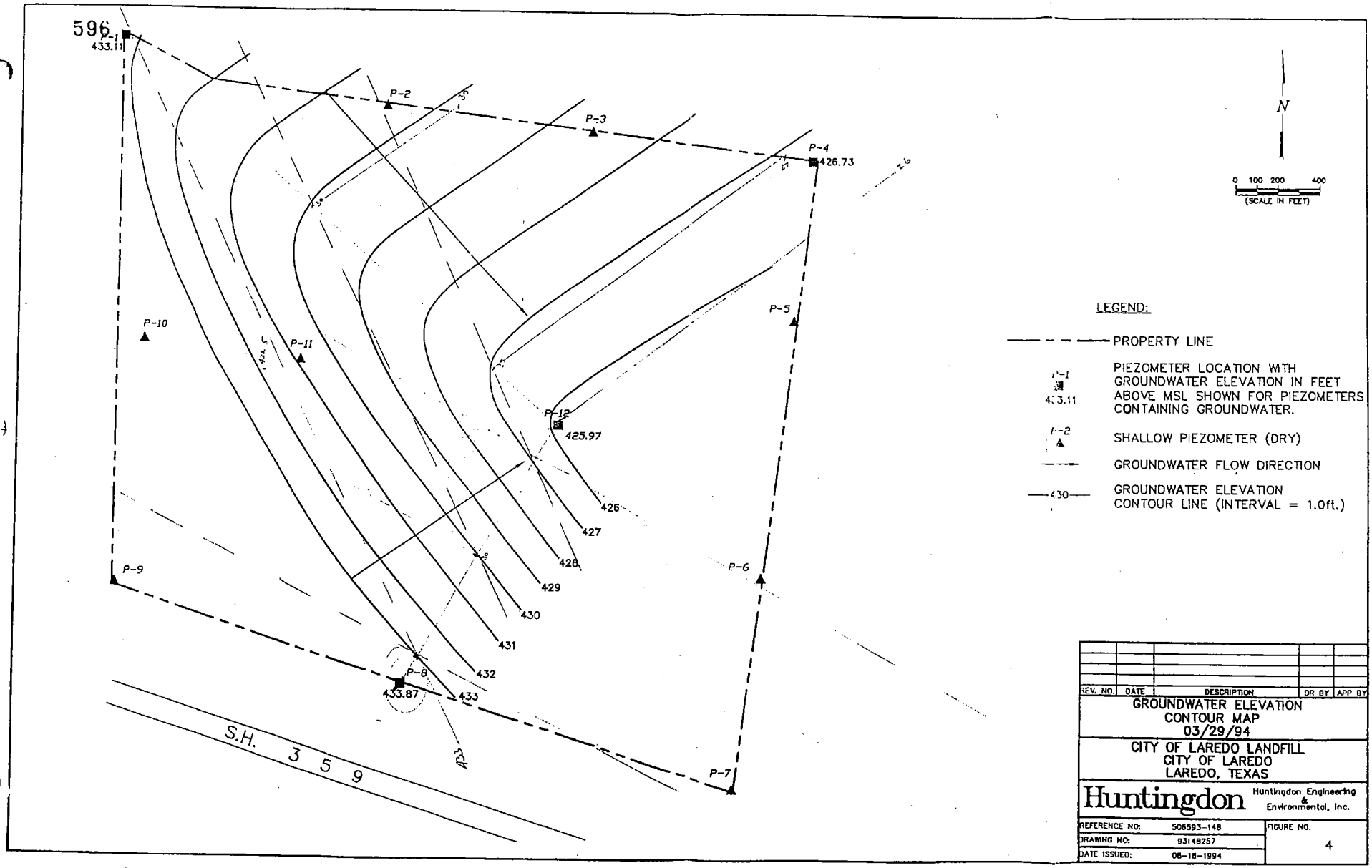
GROUNDWATER ELEVATION
CONTOUR MAP
04/27/94

CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

Huntingdon — Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	506593-148
DRAWING NO:	93148258
DATE ISSUED:	08-19-1994

FIGURE NO. 5



REV. NO.	DATE	DESCRIPTION	DR BY	APP BY

GROUNDWATER ELEVATION
CONTOUR MAP
03/29/94

CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

Huntingdon — Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	506593-148
DRAWING NO:	93148257
DATE ISSUED:	06-15-1994

FIGURE NO. 4

TABLE 3
DAILY RAINFALL MEASUREMENTS
City of Laredo Landfill
Webb County, Texas

DATE	RAIN (INCHES)	DATE	RAIN (INCHES)	DATE	RAIN (INCHES)	DATE	RAIN (INCHES)	DATE	RAIN (INCHES)	DATE	RAIN (INCHES)	DATE	RAIN (INCHES)
12/1/93	0	1/1/94	0	2/1/94	0	3/1/94	0	4/1/94	0	5/1/94	0.56	6/1/94	0
12/2/93	0	1/2/94	0	2/2/94	0	3/2/94	0	4/2/94	0	5/2/94	0.1	6/2/94	0
12/3/93	0	1/3/94	0	2/3/94	0	3/3/94	0	4/3/94	0	5/3/94	0	6/3/94	0
12/4/93	0	1/4/94	0	2/4/94	0	3/4/94	0	4/4/94	0	5/4/94	0	6/4/94	0
12/5/93	0	1/5/94	0	2/5/94	0	3/5/94	0	4/5/94	0	5/5/94	0	6/5/94	0
12/6/93	0	1/6/94	0	2/6/94	0	3/6/94	0.07	4/6/94	0	5/6/94	0	6/6/94	0
12/7/93	0	1/7/94	0	2/7/94	0	3/7/94	0	4/7/94	0	5/7/94	0	6/7/94	0
12/8/93	0	1/8/94	0	2/8/94	0	3/8/94	0	4/8/94	0	5/8/94	0	6/8/94	0
12/9/93	0	1/9/94	0	2/9/94	0	3/9/94	0.52	4/9/94	0	5/9/94	1.40	6/9/94	0
12/10/93	0	1/10/94	0	2/10/94	0.17	3/10/94	0	4/10/94	0	5/10/94	0	6/10/94	0.75
12/11/93	0	1/11/94	0	2/11/94	0	3/11/94	0	4/11/94	0	5/11/94	0	6/11/94	0
12/12/93	0	1/12/94	0	2/12/94	0	3/12/94	0	4/12/94	0	5/12/94	0	6/12/94	0.23
12/13/93	0	1/13/94	0	2/13/94	0	3/13/94	0	4/13/94	0	5/13/94	0	6/13/94	0.30
12/14/93	0	1/14/94	0	2/14/94	0	3/14/94	0	4/14/94	0	5/14/94	0	6/14/94	1.02
12/15/93	0	1/15/94	0	2/15/94	0	3/15/94	0.40	4/15/94	0	5/15/94	0.73	6/15/94	0
12/16/93	0	1/16/94	0	2/16/94	0	3/16/94	0.44	4/16/94	0.72	5/16/94	0	6/16/94	0
12/17/93	0	1/17/94	0	2/17/94	0	3/17/94	0.04	4/17/94	0	5/17/94	0	6/17/94	0
12/18/93	0	1/18/94	0	2/18/94	0	3/18/94	0	4/18/94	0	5/18/94	0	6/18/94	0
12/19/93	0	1/19/94	0	2/19/94	0	3/19/94	0	4/19/94	0	5/19/94	0	6/19/94	0
12/20/93	0	1/20/94	0	2/20/94	0	3/20/94	0	4/20/94	0	5/20/94	0	6/20/94	0
12/21/93	0	1/21/94	0	2/21/94	0	3/21/94	0	4/21/94	0	5/21/94	0	6/21/94	0
12/22/93	0	1/22/94	0	2/22/94	0	3/22/94	0	4/22/94	0	5/22/94	0	6/22/94	0
12/23/93	0	1/23/94	0.13	2/23/94	0.21	3/23/94	0	4/23/94	0	5/23/94	0	6/23/94	0
12/24/93	0.16	1/24/94	0.15	2/24/94	0	3/24/94	0	4/24/94	0	5/24/94	0	6/24/94	0
12/25/93	0	1/25/94	0.04	2/25/94	0	3/25/94	0	4/25/94	0	5/25/94	0	6/25/94	0
12/26/93	0	1/26/94	0	2/26/94	0	3/26/94	0	4/26/94	0	5/26/94	0	6/26/94	0
12/27/93	0	1/27/94	0	2/27/94	0	3/27/94	0	4/27/94	0	5/27/94	0	6/27/94	0
12/28/93	0	1/28/94	0	2/28/94	0.05	3/28/94	0	4/28/94	0	5/28/94	0.69	6/28/94	0
12/29/93	0	1/29/94	0			3/29/94	0	4/29/94	0.01	5/29/94	0	6/29/94	0
12/30/93	0	1/30/94	0			3/30/94	0	4/30/94	0	5/30/94	0	6/30/94	0
12/31/93	0	1/31/94	0			3/31/94	0			5/31/94	0		

As shown in Table 4, the K values vary across the site from a low of 4.38×10^{-3} gallons per day per square feet (gpd/ft^2) in P-8 to a high of 7.88 gpd/ft^2 in P-4. The average K value calculated for the four piezometers was 2.11 gpd/ft^2. As previously mentioned, the groundwater flow direction in the water-bearing zone varies across the site. As a result, two different hydraulic gradients were calculated from the groundwater elevations shown on Figures 4 and 5. Hydraulic gradients of 5.45×10^{-3} and 5.65×10^{-3} feet per feet (ft/ft) were calculated, based on the change in hydraulic head measured between piezometers P-8 and P-12, for March 29 and April 27, 1994, respectively. This yields an average hydraulic gradient of 5.55×10^{-3} ft/ft toward the northeast. Additionally, hydraulic gradients of 2.60×10^{-3} and 2.58×10^{-3} ft/ft were calculated, based on the change in hydraulic head measured across the site between P-1 and P-12, for March 29 and April 27, 1994, respectively. This yields an average hydraulic gradient of 2.59×10^{-3} ft/ft toward the southeast. Using the two hydraulic gradients and the average K value from Table 4, two groundwater flow velocities can be approximated using a variation of Darcy's equation (Driscoll, 1986).

Equation 1:
$$V = \frac{KI}{7.5\ (N)}$$

where: V = Velocity of groundwater flow (feet/day);
K = Hydraulic conductivity (gpd/ft^2);
I = Hydraulic gradient (ft/ft); and
N = Porosity (%).

A porosity of 30 percent, which is a typical value for shaly sandstone, was assumed. Substituting these values into Equation 1 yields a groundwater flow velocity of 5.20×10^{-3} feet per day (ft/day) toward the northeast, and another groundwater flow velocity of 2.43×10^{-3} ft/day toward the southeast. Appendix C contains the calculation worksheet for the groundwater flow gradients and velocities.

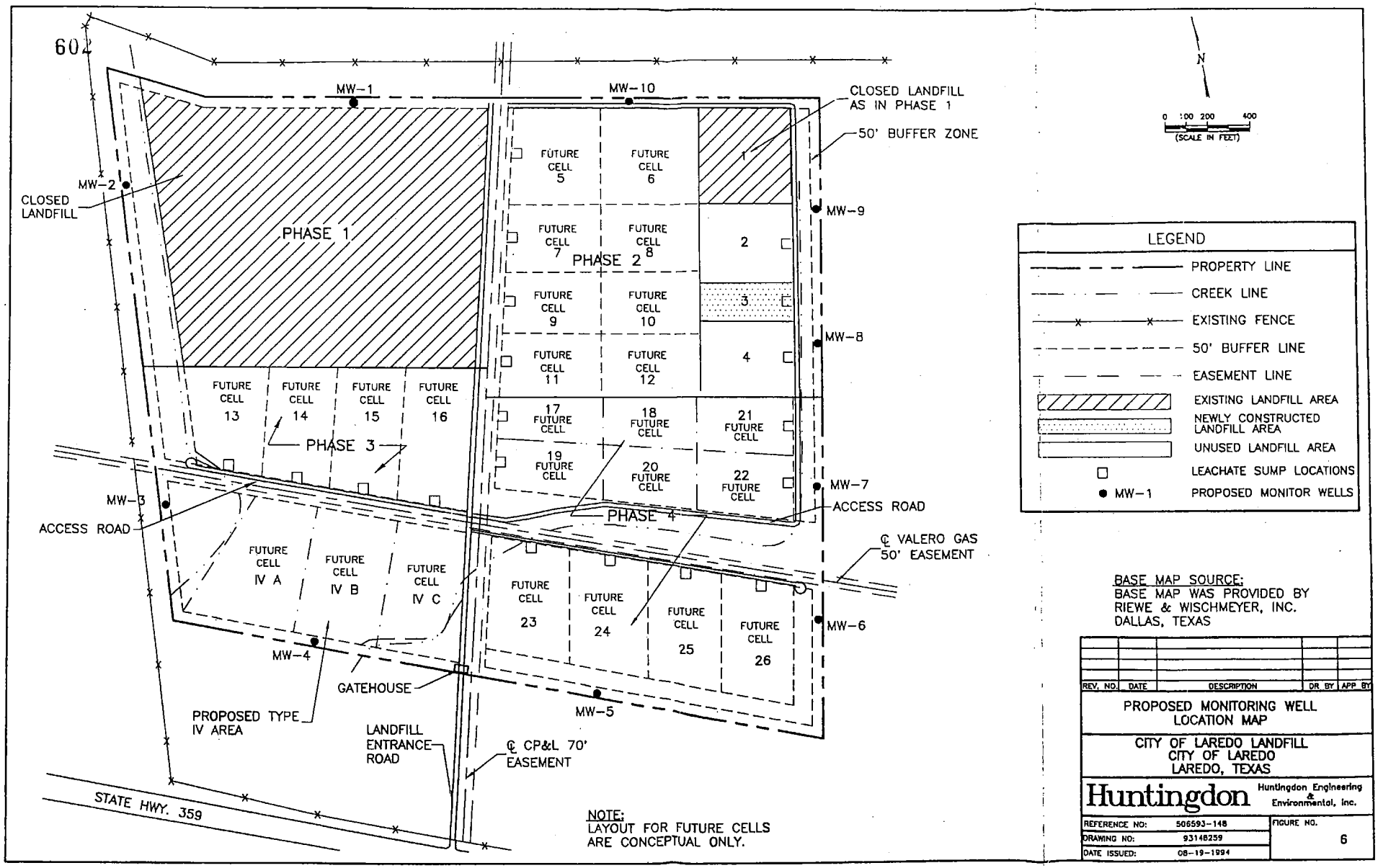
TABLE 4
SLUG TEST RESULTS
JANUARY 11 AND 12, 1994
City of Laredo Landfill
Webb County, Texas

PIEZOMETER	K (gpd/ft^2)
P-1	2.41×10^{-1}
P-4	7.88
P-8	4.38×10^{-3}
P-12	3.21×10^{-1}
Average K	2.11

gpd/ft^2 - gallons per day per square foot
K - hydraulic conductivity

5.5 Groundwater Monitoring System

The proposed groundwater monitoring system will consist of ten monitoring wells located around the perimeter of the site. The location of wells to be included in this groundwater monitoring system are shown on Figure 6. The ten monitoring wells to be installed at the site will be constructed of four-inch diameter PVC riser and screen with a 10-foot screened interval set in the water-bearing zone. The piezometers used as part of this study should be properly plugged and abandoned according to the rules of the Texas Water Development Board (TWDB).



BASE MAP SOURCE:
BASE MAP WAS PROVIDED BY
RIEWE & WISCHMEYER, INC.
DALLAS, TEXAS

REV. NO.	DATE	DESCRIPTION	DR BY	APP BY

PROPOSED MONITORING WELL LOCATION MAP

CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	506593-148
DRAWING NO:	93148259
DATE ISSUED:	08-19-1994

FIGURE NO. 6

603

6.0 REFERENCES

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APPENDIX A

SOIL BORING LOGS AND TNRCC WELL REPORTS

LOG OF BORING/PIEZOMETER NO. P-1

605

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
			SILTY SAND, TAN, W/ SCATTERED GRAVEL, DRY.					Annulus Materials: BENTONITE GROUT; Well Materials: 2" PVC BLANK RISER
5							5	
10							10	
15							15	
20							20	
			SHALY SANDSTONE, TAN, CONTAINS SOME MICA AND SCATTERED FOSSILS.					
25							25	

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/29,30/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 477.6' Top of Casing Elevation: 479.81' Drilling Method: HSA/WET ROTARY

Total Depth: 73.0'-SEE COMMENTS Comments: DRILLED TO 95', BENT GROUT TO 73', SET WELL SCREEN 53'-73'

53146120

SOUTHWESTERN LABORATORIES

606

LOG OF BORING/PIEZOMETER NO. P-1(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
								Annulus Materials / Well Materials
35			-COLOR CHANGES TO GREENISH-GRAY, CONTAINS SOME GLAUCONITE AND HIGHLY CEMENTED (CALCAREOUS) LAYERS.				35	BENTONITE GROUT; 2" PVC BLANK RISER
40							40	
45							45	
								BENTONITE SEAL
50							50	
55							55	FILTER PACK 20/40 GRADE SILICA SAND; 2" PVC 0.010" SLOTTED WELL SCREEN

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/29,30/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 477.6' Top of Casing Elevation: 479.81' Drilling Method: HSA/WET ROTARY

Total Depth: 73.0'-SEE COMMENTS Comments: DRILLED TO 95', BENT GROUT TO 73', SET WELL SCREEN 53'-73'

SOUTHWESTERN LABORATORIES

93148121

LOG OF BORING/PIEZOMETER NO. P-1(CONT.)

607

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
65							65	FILTER PACK 20/40 GRADE SILICA SAND	2" PVC 0.010" SLOTTED WELL SCREEN
70							70		
75			SHALE, GREENISH-GRAY, WITH SCATTERED FOSSILS.				75		
80							80	BENTONITE GROUT	
85							85		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/29,30/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 477.6' Top of Casing Elevation: 479.81' Drilling Method: HSA/WET ROTARY

Total Depth: 73.0'-SEE COMMENTS Comments: DRILLED TO 95', BENT GROUT TO 73', SET WELL SCREEN 53'-73'

SOUTHWESTERN LABORATORIES

93148122

608

LOG OF BORING/PIEZOMETER NO. P-1(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
95			SHALE, GREENISH-GRAY, W/ SCATTERED FOSSILS.				95	BENTONITE GROUT	
100							100		
105							105		
110							110		
115							115		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/29,30/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 477.6' Top of Casing Elevation: 479.81' Drilling Method: HSA/WET ROTARY

Total Depth: 73.0'-SEE COMMENTS Comments: DRILLED TO 95', BENT GROUT TO 73', SET WELL SCREEN 53'-73'

SOUTHWESTERN LABORATORIES

93146123

LOG OF BORING/PIEZOMETER NO. P-2

609

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
			SILTY CLAY, BROWN, DRY, W/ GRAVEL LAYER FROM 2' – 4'.					Annulus Materials / Well Materials
5							5	BENTONITE GROUT; 2" PVC BLANK RISER
10							10	
15							15	BENTONITE SEAL
20							20	FILTER PACK 20/40 GRADE SILICA SAND
25							25	2" PVC 0.010" SLOTTED WELL SCREEN
			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE, MICA AND SCATTERED FOSSILS.					

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/23/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 470.8' Top of Casing Elevation: 473.05' Drilling Method: HOLLOW STEM AUGER

Total Depth: 30.0' Comments: _____

93148124

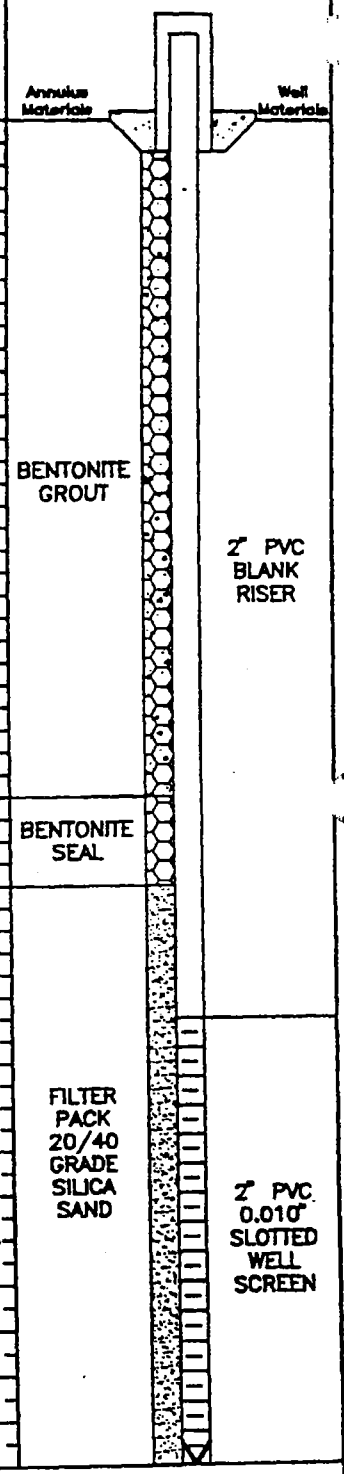
SOUTHWESTERN LABORATORIES

LOG OF BORING/PIEZOMETER NO. P-3

610

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)
0			SANDY CLAY, TAN AND BROWN, CONTAINS SCATTERED GRAVEL, DRY.			
5						
10						
15						
20						
25			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE, MICA AND SCATTERED FOSSILS, DRY.			

PIEZOMETER COMPLETION DATA



Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: ____ Time: ____ Elevation: ____ Date: ____ Time: ____ Elevation: ____

Ground Elevation: 479.9' Top of Casing Elevation: 481.97' Drilling Method: HOLLOW STEM AUGER

Total Depth: 30.0' Comments: ____

SOUTHWESTERN LABORATORIES

83148125

LOG OF BORING/PIEZOMETER NO. P-4

611

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (+)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
			SILTY CLAY, TAN AND BROWN, W/ SCATTERED GRAVEL, DRY.					Annulus Materials: BENTONITE GROUT; Well Materials: 2" PVC BLANK RISER
5							5	
10							10	
15			—COLOR CHANGE TO MAROON.				15	
20			—COLOR CHANGE TO DARK GRAY.				20	
25							25	

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/12.15.16/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 471.8' Top of Casing Elevation: 473.33' Drilling Method: HSA/AIR,WET ROTARY

Total Depth: 92.5'-SEE COMMENTS Comments: BOREHOLE COLLAPSED FROM 92.5'-100.0', SET WELL SCREEN 72.5'-92.5'

SOUTHWESTERN LABORATORIES

93148:28

LOG OF BORING/PIEZOMETER NO. P-4(CONT.)

612

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
35			SILTY CLAY, GRAY, DRY.				35		
40			SHALY SANDSTONE, GREENISH-GRAY, CONTAINS SOME MICA, GLAUCONITE AND SCATTERED FOSSILS, OCCASIONAL HIGHLY CEMENTED (CALCAREOUS) LAYERS.				40		
45							45	BENTONITE GROUT	2" PVC BLANK RISER
50							50		
55							55		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/12,15,16/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 471.8' Top of Casing Elevation: 473.33' Drilling Method: HSA/AIR,WET ROTARY

Total Depth: 92.5'-SEE COMMENTS Comments: BOREHOLE COLLAPSED FROM 92.5'-100.0', SET WELL SCREEN 72.5'-92.5'

SOUTHWESTERN LABORATORIES

93148127

LOG OF BORING/PIEZOMETER NO. P-4(CONT.)

613

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
65			SHALY SANDSTONE, GREENISH-GRAY, CONTAINS SOME MICA, GLAUCONITE AND SCATTERED FOSSILS. OCCASIONAL HIGHLY CEMENTED (CALCAREOUS) LAYERS.				65	BENTONITE GROUT	2" PVC BLANK RISER
								BENTONITE SEAL	
70							70		
75							75	FILTER PACK 20/40 GRADE SILICA SAND	2" PVC 0.010" SLOTTED WELL SCREEN
80							80		
85							85		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/12,15,16/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 471.8' Top of Casing Elevation: 473.33' Drilling Method: HSA/AIR,WET ROTARY

Total Depth: 92.5'-SEE COMMENTS Comments: BOREHOLE COLLAPSED FROM 92.5'-100.0', SET WELL SCREEN 72.5'-92.5'

SOUTHWESTERN LABORATORIES

93148126

0 614

LOG OF BORING/PIEZOMETER NO. P-4(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
95			SHALY SANDSTONE, GREENISH-GRAY, CONTAINS SOME MICA, GLAUCONITE AND SCATTERED FOSSILS. OCCASIONAL HIGHLY CEMENTED (CALCAREOUS) LAYERS.				95	20/40 SAND	WELL SCREEN
100							100		
05							105		
110							110		
115							115		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/12,15,16/93 Driller: ED DURAN

Groundwater Elevation: Date: ____ Time: ____ Elevation: ____ Date: ____ Time: ____ Elevation: ____

Ground Elevation: 471.8' Top of Casing Elevation: 473.33' Drilling Method: HSA/AIR,WET ROTARY

Total Depth: 92.5'-SEE COMMENTS Comments: BOREHOLE COLLAPSED FROM 92.5'-100.0', SET WELL SCREEN 72.5'-92.5'

SOUTHWESTERN LABORATORIES

93148126

615

LOG OF BORING/PIEZOMETER NO. P-5

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
0			SILTY CLAY, BROWN, W/ SCATTERED GRAVEL, DRY.				0	Annulus Materials: BENTONITE GROUT; BENTONITE SEAL; FILTER PACK 20/40 GRADE SILICA SAND. Well Materials: 2" PVC BLANK RISER; 2" PVC 0.010" SLOTTED WELL SCREEN
5		X					5	
10							10	
15		X					15	
20			—COLOR CHANGES TO GRAY.				20	
25		X	—COLOR CHANGES TO MAROON				25	

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/24/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 475.2' Top of Casing Elevation: 478.28' Drilling Method: HOLLOW STEM AUGER

Total Depth: 32.0' Comments: _____

SOUTHWESTERN LABORATORIES

93148130

616

LOG OF BORING/PIEZOMETER NO. P-5(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
			SILTY CLAY, MAROON, DRY					20/40 GRADE SILICA SAND	SLOTTED WELL SCREEN
			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE AND MICA, DRY.						
35							35		
40							40		
15							45		
50							50		
55							55		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/24/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 475.2' Top of Casing Elevation: 478.28' Drilling Method: HOLLOW STEM AUGER

Total Depth: 32.0' Comments: _____

SOUTHWESTERN LABORATORIES

9314813:

LOG OF BORING/PIEZOMETER NO. P-6

617

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
			SANDY CLAY, BROWN, W/ SCATTERED GRAVEL AND FOSSILS, DRY.					Annulus Materials: BENTONITE GROUT; Well Materials: 2" PVC BLANK RISER
5		X					5	
10							10	
15		X					15	BENTONITE SEAL
20		X	-COLOR CHANGES TO MAROON.				20	FILTER PACK 20/40 GRADE SILICA SAND; 2" PVC 0.010" SLOTTED WELL SCREEN
25							25	
		X	SHALY SANDSTONE, TAN AND GREENISH-GRAY, DRY.					

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 485.7' Top of Casing Elevation: 488.05' Drilling Method: HOLLOW STEM AUGER

Total Depth: 30.0' Comments: _____

SOUTHWESTERN LABORATORIES

93148132

LOG OF BORING/PIEZOMETER NO. P-7

618

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
0			SANDY CLAY, BROWN, W/ SCATTERED GRAVEL AND FOSSILS, DRY.				0	Annulus Materials: BENTONITE GROUT; Well Materials: 2" PVC BLANK RISER
5							5	
10		X					10	
15							15	BENTONITE SEAL
20			—COLOR CHANGE TO MAROON.				20	FILTER PACK 20/40 GRADE SILICA SAND
25		X	—COLOR CHANGE TO TAN.				25	2" PVC 0.010" SLOTTED WELL SCREEN
			SHALY SANDSTONE, TAN AND GREENISH-GRAY, W/ SOME MICA, DRY TO 32.0'					

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/02/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 491.0' Top of Casing Elevation: 493.99' Drilling Method: HOLLOW STEM AUGER

Total Depth: 30.0'-SEE COMMENTS Comments: DRILLED TO 32.0', BOREHOLE COLLAPSED TO 30.0'

SOUTHWESTERN LABORATORIES

93146133

LOG OF BORING/PIEZOMETER NO. P-8

619

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
			SILTY SAND, BROWN, W/ SCATTERED GRAVEL, DRY.					Annulus Materials: BENTONITE GROUT; Well Materials: 2" PVC BLANK RISER
5							5	
			SANDY CLAY, MAROON W/ SCATTERED FOSSILS, DRY.					
10							10	
15			-COLOR CHANGE TO TAN AND BROWN.				15	
20							20	
25							25	
			SHALY SANDSTONE, TAN AND BROWN, W/ FOSSILS, MICA.					

Client: CITY OF LAREDO LANDFILL Project No.: 506583-148 Date Drilled: 12/1,2/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 512.9' Top of Casing Elevation: 515.06' Drilling Method: HSA/WET ROTARY

Total Depth: 90.0'-SEE COMMENTS Comments: DRILLED TO 90', BOREHOLE COLLAPSED TO 88.0'

SOUTHWESTERN LABORATORIES

63148134

620

LOG OF BORING/PIEZOMETER NO. P-8(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
35			SHALY SANDSTONE, TAN & BROWN, W/ FOSSILS, MICA.				35		
40							40		
45							45	BENTONITE GROUT	2" PVC BLANK RISER
50			-COLOR CHANGES TO GREENISH-GRAY.				50		
55							55		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/1,2/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 512.9' Top of Casing Elevation: 515.06' Drilling Method: HSA/WET ROTARY

Total Depth: 90.0'-SEE COMMENTS Comments: DRILLED TO 90', BOREHOLE COLLAPSED TO 88.0'

SOUTHWESTERN LABORATORIES

93146135

621

LOG OF BORING/PIEZOMETER NO. P-8(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
65			SHALY SANDSTONE, GREENISH-GRAY, W/ SCATTERED FOSSILS, CONTAINS SOME MICA, GLAUCONITE AND HIGHLY CEMENTED (CALCAREOUS) LAYERS.				65	BENTONITE GROUT BENTONITE SEAL	2" PVC BLANK RISER
70							70	FILTER PACK 20/40 GRADE SILICA SAND	2" PVC 0.010" SLOTTED WELL SCREEN
75							75		
80							80		
85							85		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/1,2/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 512.9' Top of Casing Elevation: 515.06' Drilling Method: HSA/WET ROTARY

Total Depth: 90.0'-SEE COMMENTS Comments: DRILLED TO 90', BOREHOLE COLLAPSED TO 88.0'

93148:36

SOUTHWESTERN LABORATORIES

622

LOG OF BORING/PIEZOMETER NO. P-9

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)
			SILTY SAND, BROWN, W/ SOME GRAVEL, DRY.				
			SANDY CLAY, TAN, DRY.				
5							5
			-COLOR CHANGES TO TAN AND BROWN.				
10							10
15							15
20							20
			-COLOR CHANGES TO REDDISH-BROWN.				
25							25
			SHALY SANDSTONE, GREENISH-GRAY, DRY.				

PIEZOMETER COMPLETION DATA

Annulus Materials — Well Materials

BENTONITE GROUT

2" PVC BLANK RISER

BENTONITE SEAL

FILTER PACK 20/40 GRADE SILICA SAND

2" PVC 0.010" SLOTTED WELL SCREEN

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 540.2' Top of Casing Elevation: 543.72' Drilling Method: HOLLOW STEM AUGER

Total Depth: 31.0' Comments: _____

SOUTHWESTERN LABORATORIES

93148137

623

LOG OF BORING/PIEZOMETER NO. P-9(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
		X	SHALY SANDSTONE, GREENISH-GRAY, DRY.					SILICA SAND	WELL SCREEN
35							35		
40							40		
45							45		
50							50		
55							55		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 540.2' Top of Casing Elevation: 543.72' Drilling Method: HOLLOW STEM AUGER

Total Depth: 31.0' Comments: _____

93144138

SOUTHWESTERN LABORATORIES

624

LOG OF BORING/PIEZOMETER NO. P-10

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
			SANDY CLAY, DARK TO LIGHT BROWN, DRY.					Annulus Materials: BENTONITE GROUT; BENTONITE SEAL; FILTER PACK 20/40 GRADE SILICA SAND. Well Materials: 2" PVC BLANK RISER; 2" PVC 0.010" SLOTTED WELL SCREEN
			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE, MICA AND SCATTERED FOSSILS, DRY.					

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 502.2' Top of Casing Elevation: 505.90' Drilling Method: HOLLOW STEM AUGER

Total Depth: 26.0'-SEE COMMENTS Comments: DRILLED TO 30.0', BOREHOLE COLLAPSED TO 26.0'

SOUTHWESTERN LABORATORIES

93148136

625

LOG OF BORING/PIEZOMETER NO. P-11

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
0							0	Annulus Materials / Well Materials
			SILTY SAND, BROWN, W/ SOME GRAVEL, DRY.					
5							5	
			SANDY CLAY, TAN, SCATTERED FOSSILS, DRY.					BENTONITE GROUT
10							10	2" PVC BLANK RISER
15			—COLOR CHANGE TO TAN AND BROWN.				15	
								BENTONITE SEAL
20							20	
								FILTER PACK 20/40 GRADE SILICA SAND
25							25	2" PVC 0.010" SLOTTED WELL SCREEN

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 511.0' Top of Casing Elevation: 513.98' Drilling Method: HOLLOW STEM AUGER

Total Depth: 32.0'-SEE COMMENTS Comments: DRILLED TO 35.0', BOREHOLE COLLAPSED TO 32.0'

SOUTHWESTERN LABORATORIES

93148140

626

LOG OF BORING/PIEZOMETER NO. P-11(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
			SANDY CLAY, TAN AND BROWN, DRY.					SILICA SAND	WELL SCREEN
			SHALY SANDSTONE, TAN AND BROWN, DRY.						
35							35		
40							40		
45							45		
50							50		
55							55		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 12/03/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 511.0' Top of Casing Elevation: 513.98' Drilling Method: HOLLOW STEM AUGER

Total Depth: 32.0'-SEE COMMENTS Comments: DRILLED TO 35.0', BOREHOLE COLLAPSED TO 32.0'

SOUTHWESTERN LABORATORIES

93148141

627

LOG OF BORING/PIEZOMETER NO. P-12

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (+)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA
0			SANDY CLAY, BROWN, W/ GRAVEL LAYERS, SCATTERED FOSSILS, DRY.				0	Annulus Materials; Well Materials
5		X					5	
10							10	BENTONITE GROUT; 2" PVC BLANK RISER
15		X					15	
20							20	
25		X					25	

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22,23/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

93148142

SOUTHWESTERN LABORATORIES

628 LOG OF BORING/PIEZOMETER NO. P-12(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
			SANDY CLAY						
			SHALY SANDSTONE, GREENISH-GRAY, SCATTERED FOSSILS, CONTAINS SOME GLAUCONITE AND HIGHLY CEMENTED (CALCAREOUS) LAYERS.						
35							35		
40							40		
45							45	BENTONITE GROUT	2" PVC BLANK RISER
50							50		
55							55		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22,23/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

SOUTHWESTERN LABORATORIES

93148143

629

LOG OF BORING/PIEZOMETER NO. P-12(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (+)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
65			SHALY SANDSTONE, GREENISH-GRAY, SCATTERED FOSSILS, CONTAINS SOME GLAUCONITE AND HIGHLY CEMENTED (CALCAREOUS) LAYERS.				65	BENTONITE GROUT	2" PVC BLANK RISER
70							70	BENTONITE SEAL	
75							75	FILTER PACK 20/40 GRADE SILICA SAND	
80							80		2" PVC 0.010" SLOTTED WELL SCREEN
85							85		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22,23/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

93144144

SOUTHWESTERN LABORATORIES

630

LOG OF BORING/PIEZOMETER NO. P-12(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
95			SHALY SANDSTONE, GREENISH-GRAY, SCATTERED FOSSILS, CONTAINS SOME GLAUCONITE AND HIGHLY CEMENTED (CALCAREOUS) LAYERS.				95	FILTER PACK 20/40 GRADE SILICA SAND	2" PVC 0.010" SLOTTED WELL SCREEN
100							100	BENTONITE GROUT	
105							105		
110			SHALE, GREENISH-GRAY, CONTAINS SOME GLAUCONITE.				110		
115							115		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22.23/93 Driller: ED DURAN

Groundwater Elevation: Date: ____ Time: ____ Elevation: ____ Date: ____ Time: ____ Elevation: ____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

SOUTHWESTERN LABORATORIES

93146145

631

LOG OF BORING/PIEZOMETER NO. P-12(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
125			SHALE, GREENISH-GRAY, CONTAINS SOME GLAUCONITE.				125		
130							130		
135							135	BENTONITE GROUT	
140			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE, SCATTERED FOSSILS.				140		
145							145		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22,23/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

SOUTHWESTERN LABORATORIES

93148146

632 LOG OF BORING/PIEZOMETER NO. P-12(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
155			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE, SCATTERED FOSSILS.				155		
160							160		
5							165	BENTONITE GROUT	
170							170		
175							175		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22,23/93 Driller: ED DURAN

Groundwater Elevation: Date: ____ Time: ____ Elevation: ____ Date: ____ Time: ____ Elevation: ____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

SOUTHWESTERN LABORATORIES

93148147

633 LOG OF BORING/PIEZOMETER NO. P-12(CONT.)

DEPTH, (FT)	STRATIGRAPHY	SAMPLES	DESCRIPTION OF STRATUM	DIRECT READING INSTRUMENT	SUBMITTED FOR ANALYSIS	ODOR (•)	DEPTH (FT.)	PIEZOMETER COMPLETION DATA: Annulus Materials	PIEZOMETER COMPLETION DATA: Well Materials
185			SHALY SANDSTONE, GREENISH-GRAY, W/ SOME GLAUCONITE, MICA AND SCATTERED FOSSILS.				185	BENTONITE GROUT	
190							190		
195							195		
200							200		
205							205		

Client: CITY OF LAREDO LANDFILL Project No.: 506593-148 Date Drilled: 11/17-19, 22/23/93 Driller: ED DURAN

Groundwater Elevation: Date: _____ Time: _____ Elevation: _____ Date: _____ Time: _____ Elevation: _____

Ground Elevation: 490.8' Top of Casing Elevation: 494.12' Drilling Method: HSA/WET ROTARY

Total Depth: 95.0'-SEE COMMENTS Comments: DRILLED TO 197.0', BENTONITE GROUT TO 95.0'

SOUTHWESTERN LABORATORIES

93148148

634 KEY TO SYMBOLS

STRATA SYMBOLS

CLAY 

SILTY CLAY 

SANDY CLAY 

GRAVELLY CLAY 

SILT 

CLAYEY SILT 

SANDY SILT 

GRAVELLY SILT 

SHALY SILT 

SAND 

CLAYEY SAND 

SILTY SAND 

FINE SAND 

LIMESTONE 

SHALY LIMESTONE 

COMPLETELY WEATHERED LIMESTONE 

SHALE 

SHALY SANDSTONE 

CLAYEY SHALE 

GRAVEL 

SILTY GRAVEL 

CLAYEY GRAVEL 

FILL 

MARL 

WELL COMPLETION MATERIAL

BENTONITE PELLETS 

BENTONITE GROUT 

SAMPLING SYMBOLS

CONTINUOUS 

SPLIT SPOON 

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

635

State of Texas
WELL REPORT

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

1) OWNER [illegible] (Name) ADDRESS [illegible] (Street or RFD) [illegible] (City) (State) (Zip)

2) LOCATION OF WELL: County [illegible] . [illegible] miles in [illegible] (NE, SW, etc.) direction from [illegible] (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☐ SEE ATTACHED MAP

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

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

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

6) WELL LOG:
Date Drilling: Started [illegible] 19[illegible] Completed [illegible] 19[illegible]

DIAMETER OF HOLE

Dia. (in)	From (ft.)	To (ft.)
4	Surface	95.0

7) BOREHOLE COMPLETION:
☒ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 48.0 ft. to 73.0 ft.

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

[illegible]

(Use reverse side if necessary)

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC - SCREEN	73.0	53.1	.010
2	N	PVC - RISER	53.1	-2.5	SC

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 0.0 ft. to 46.1 ft. No. of Sacks Used 11
[illegible] 49.0 ft. to 1.0 ft. No. of Sacks Used 4
Method used [illegible]
Cemented by [illegible]

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

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

14) WELL TESTS:
Type Test ☐ Pump [illegible] ☐ Bailer ☐ Jetted ☐ Estimated
Yield: _____ gpm with [illegible] ft. drawdown after _____ hrs.

11) WATER LEVEL:
Static level _____ ft. below land surface Date _____
Artesian flow N/A gpm. Date _____

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

12) PACKERS: Type Depth
N/A

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

COMPANY NAME TEXCOM FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3102 - WDW

ADDRESS P.O. BOX 19278 (Street or RFD) AUSTIN (City) TX. (State) 78760 (Zip)

[illegible] (Licensed Well Driller) (Signed) _____ (Registered Driller Trainee)

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

636

State of Texas WELL REPORT

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 (Street or RFD) LAREDO (City), TX (State) (Zip)

2) LOCATION OF WELL County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

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

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

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

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

6) WELL LOG:
Date Drilling: Started 11/23 1993 Completed 11/23 1993

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
4	Surface	30.0

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

SEE ATTACHED LOGS

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 18.0 ft. to 30.0 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC - SCREEN	30.0	20.0	.010
2	N	PVC - RISER	20.0	+2.5	40

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 16.0 ft. to 1.0 ft. No. of Sacks Used 3
BENTONITE ft. to ft. No. of Sacks Used
Method used POUR BY HAND
Cemented by TEXCOR

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

11) WATER LEVEL:
Static level N/A ft. below land surface Date _____
Artesian flow _____ gpm. Date _____

12) PACKERS: Type N/A Depth

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

14) WELL TESTS:
Type Test: ☐ Pump ☒ Bailer ☐ Jetted ☐ Estimated
Yield: _____ gpm with N/A ft. drawdown after _____ hrs.

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

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - MDN

ADDRESS P.O. Box 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-16-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentially
Privilege Notice on Reverse Side

637

State of Texas
WELL REPORT

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

1) OWNER City of LAREDO (Name) ADDRESS [illegible] (Street or RFD) [illegible] (City) [illegible] (State) (Zip)

LOCATION OF WELL: County WEBB . 3 miles in E (NE, SW, etc.) direction from [illegible] (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:
Date Drilling: Started 12/3 19 93 Completed 12/7 19 93

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
4	Surface	30.0

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

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval ... from 17.0 ft. to 30.0 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC - SCREEN	30.0	20.0	.010
	N	PVC - RISER	20.0	-2.5	40

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 15.0 ft. to 1.0 ft. No. of Sacks Used 3
BENTONITE ft. to ft. No. of Sacks Used
Method used POUR BY HAND
Cemented by TEXCOR

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

11) WATER LEVEL:
Static level N/A ft. below land surface Date _____
Artesian flow _____ gpm. Date _____

12) PACKERS: Type Depth
N/A

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

14) WELL TESTS:
Type Test ☐ Pump ☒ Bailer ☐ Jetted ☐ Estimated
Yield: _____ gpm with N/A ft. drawdown after _____ hrs.

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

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - N.DW

ADDRESS P.O. BOX 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

TD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas WELL REPORT

638

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

1) OWNER City of LAREDO (Name) ADDRESS [illegible] (Street or RFD) [illegible] (City) T (State) (Zip)

LOCATION OF WELL: County WEBB . 3 miles in E (NE, SW, etc.) direction from [illegible] (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:
Date Drilling: Started 11/12 19 93 Completed 11/16 19 93

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
4	Surface	100.0

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

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval ... from 68.0 ft. to 42.5 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
2	N	PVC - SCREEN	42.5	72.5	.010
2	N	PVC RISER	72.5	-2.5	40

9) CEMENTING DATA. [Rule 287.44(1)]
Cemented from 66.0 ft. to 1.0 ft. No. of Sacks Used 13
ft. to ft. No. of Sacks Used
Method used POUR BY HAND
Cemented by TEXCOR

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

11) WATER LEVEL:
Static level N/A ft. below land surface Date
Artesian flow gpm. Date

12) PACKERS: Type Depth
N/A

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

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

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

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - MDN

ADDRESS P.O. Box 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

[signature] (Licensed Well Driller) (Signed) _____ (Registered Driller Trainee)

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

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

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas WELL REPORT

639

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 (Street or RFD) LAREDO (City) TX (State) (Zip)

LOCATION OF WELL County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:

Date Drilling: Started 11/24 19 93 Completed 11/24 19 93

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
4	Surface	32.0

7) BOREHOLE COMPLETION: ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other

If Gravel Packed give interval . . . from 32.0 ft. to 20.0 ft.

From (ft.)	To (ft.)	Description and color of formation material
		SEE ATTACHED LOGS

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
2	N	PVC-SCREEN	32.0	22.0	.010
2	N	PVC-RISER	22.0	2.5	40

9) CEMENTING DATA [Rule 287.44(1)]

Cemented from 17.0 ft. to 1.0 ft. No. of Sacks Used 3

ft. to ft. No. of Sacks Used

Method used POUR BY HAND

Cemented by TEXCOR

(Use reverse side if necessary)

10) SURFACE COMPLETION

☒ Specified Surface Slab Installed [Rule 287.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 287.44(3)(A)]
☐ Pitless Adapter Used [Rule 287.44(3)(B)]
☐ Approved Alternative Procedure Used [Rule 287.71]

13) TYPE PUMP: ☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other N/A

Depth to pump bowls, cylinder, jet, etc. _____ ft.

14) WELL TESTS: Type Test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated N/A

Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

11) WATER LEVEL: Static level N/A ft. below land surface Date _____

Artesian flow _____ gpm. Date _____

15) WATER QUALITY:

Did you knowingly penetrate any strata which contained undesirable constituents? ☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"

Type of water? _____ Depth of strata _____

Was a chemical analysis made? ☐ Yes ☒ No

12) PACKERS: N/A Type Depth

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103-MDN

ADDRESS P.O. BOX 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

...and original copy to be mailed to Texas Water Commission, P.O. Box 13087, Austin, Texas 78711 — Please use black ink.

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas WELL REPORT

640

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

1) OWNER CITY of LAREDO (Name) ADDRESS Hwy 359 (Street or RFD) LAREDO (City) TX (State) (Zip)

LOCATION OF WELL: County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:
Date Drilling: Started _____ 19__ Completed _____ 19__

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

From (ft.) | To (ft.) | Description and color of formation material

(Use reverse side if necessary)

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

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfr., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 15.0 ft. to 1.0 ft. No. of Sacks Used 3
ft. to ft. No. of Sacks Used
Method used POUR BY HAND
Cemented by TEXCOR

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

11) WATER LEVEL:
Static level N/A ft. below land surface Date _____
Artesian flow _____ gpm. Date _____

12) PACKERS: Type N/A Depth

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

14) WELL TESTS:
Type Test: ☐ Pump ☐ Bailer N/A ☐ Jetted ☐ Estimated
Yield: _____ gpm with N/A ft. drawdown after _____ hrs.

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

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103-MDN

ADDRESS PO BOX 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

Please see back for...

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

641

State of Texas WELL REPORT

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 LAREDO, TX. (Street or RFD) (City) (State) (Zip)

2) LOCATION OF WELL County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:

Date Drilling: Started 12/2 19 93 Completed 12/2 19 93

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
4	Surface	32.0

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

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:

☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other _____

If Gravel Packed give interval . . . from 30.0 ft. to 18.0 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC - SCREEN	30.0	20.0	.010
2	N	PVC - RISER	20.0	-2.5	40

9) CEMENTING DATA: [Rule 287.44(1)]

Cemented from 16.0 ft. to 1.0 ft. No. of Sacks Used 3

ft. to ft. No. of Sacks Used _____

Method used POUR BY HAND

Cemented by TEXCOR

10) SURFACE COMPLETION

☐ Specified Surface Slab Installed [Rule 287.44(2)(A)]

☐ Specified Steel Sleeve Installed [Rule 287.44(3)(A)]

☐ Pitless Adapter Used [Rule 287.44(3)(B)]

☐ Approved Alternative Procedure Used [Rule 287.71]

11) WATER LEVEL:

Static level N/A ft. below land surface Date _____

Artesian flow _____ gpm. Date _____

12) PACKERS: Type N/A Depth

13) TYPE PUMP:

☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other _____

Depth to pump bowls, cylinder, jet, etc. N/A ft.

14) WELL TESTS:

Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated

Yield: _____ gpm with N/A ft. drawdown after _____ hrs.

15) WATER QUALITY:

Did you knowingly penetrate any strata which contained undesirable constituents?

☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"

Type of water? _____ Depth of strata _____

Was a chemical analysis made? ☐ Yes ☒ No

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103-MDN

ADDRESS PO Box 14278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

The original copy is sent to the Texas Water Commission, P.O. Box 13087, Austin, Texas 78711 — Please use black ink.

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

D 642

State of Texas WELL REPORT

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 (Street or RFD) LAREDO (City) TX. (State) (Zip)

LOCATION OF WELL: County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:

Date Drilling: Started 12/1 19 93 Completed 12/2 19 93

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
4	Surface	90.0

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

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:

☐ Open Hole ☐ Straight Wall ☐ Underreamed ☐ Gravel Packed ☐ Other _____

If Gravel Packed give interval . . . from 88.0 ft. to 65.5 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
2	N	PVC - SCREEN	88.0	68.0	.010
2	N	PVC - RISER	68.0	-2.5	40

9) CEMENTING DATA [Rule 287.44(1)]

Cemented from 65 ft. to 1.0 ft. No. of Sacks Used 12

ft. to ft. No. of Sacks Used _____

Method used POUR BY HAND

Cemented by TEXCOR

10) SURFACE COMPLETION

☒ Specified Surface Slab Installed [Rule 287.44(2)(A)]

☐ Specified Steel Sleeve Installed [Rule 287.44(3)(A)]

☐ Pitless Adapter Used [Rule 287.44(3)(B)]

☐ Approved Alternative Procedure Used [Rule 287.71]

11) WATER LEVEL:

Static level N/A ft. below land surface Date _____

Artesian flow _____ gpm. Date _____

12) PACKERS:

Type	Depth
N/A	

13) TYPE PUMP:

☐ Turbine ☐ Jet N/A ☐ Submersible ☐ Cylinder ☐ Other _____

Depth to pump bowls, cylinder, jet, etc., _____ ft.

14) WELL TESTS:

Type Test: ☐ Pump ☒ Bailer N/A ☐ Jetted ☐ Estimated

Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

15) WATER QUALITY:

Did you knowingly penetrate any strata which contained undesirable constituents?

☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"

Type of water? _____ Depth of strata _____

Was a chemical analysis made? ☐ Yes ☒ No

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - MDN

ADDRESS PO BOX 19278 (Street or RFD) AUSTIN, (City) TX. (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

643

State of Texas WELL REPORT

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

1) OWNER City of LAREDO (Name) ADDRESS HWY 359 (Street or RFD) LAREDO (City) TX. (State) (Zip)

LOCATION OF WELL County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:
Date Drilling: Started 12/3 19 93 Completed 12/3 19 93

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
4	Surface	31.0

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

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☐ Gravel Packed ☐ Other _____
If Gravel Packed give interval ... from 31.0 ft. to 18.0 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
2	N	PVC - SCREEN	31.0	21.0	.010
2	N	PVC - RISER	21.0	-2.5	40

(Use reverse side if necessary)

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 16.0 ft. to 7.0 ft. No. of Sacks Used 3
ft. to ft. No. of Sacks Used
Method used POUR BY HAND
Cemented by TEXCOR

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

11) WATER LEVEL:
Static level _____ ft. below land surface Date _____
Artesian flow N/A gpm. Date _____

12) PACKERS: Type Depth
N/A

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

14) WELL TESTS:
Type Test: ☐ Pump ☐ Bailed ☐ Jetted ☐ Estimated
Yield: _____ gpm with N/A ft. drawdown after _____ hrs.

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

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

COMPANY NAME TEXCOR FIELD SERVICES INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - MDN

ADDRESS PO BOX 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

TD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentially
Privilege Notice on Reverse Side

644 State of Texas WELL REPORT

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 (Street or RFD) LAREDO (City) TX. (State) (Zip)

LOCATION OF WELL County WEBB 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:

Date Drilling: Started 12/3 19 93 Completed 12/3 19 93

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
4	Surface	30.0

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

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:

☐ Open Hole ☐ Straight Wall ☐ Underreamed
☐ Gravel Packed ☐ Other _____

If Gravel Packed give interval ... from 26.0 ft. to 14.0 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC - SCREEN	26.0	16.0	.010
2	N	PVC - RISER	16.6	-2.5	40

9) CEMENTING DATA [Rule 287.44(1)]

Cemented from 16.0 ft. to 1.0 ft. No. of Sacks Used 2

ft. to ft. No. of Sacks Used

Method used POUR BY HAND

Cemented by TEXCOR

10) SURFACE COMPLETION

☒ Specified Surface Slab Installed [Rule 287.44(2)(A)]
☐ Specified Steel Sleeve Installed [Rule 287.44(3)(A)]
☐ Pitless Adapter Used [Rule 287.44(3)(B)]
☐ Approved Alternative Procedure Used [Rule 287.71]

11) WATER LEVEL:

Static level _____ ft. below land surface Date _____

Artesian flow _____ gpm. Date _____

12) PACKERS: Type Depth

13) TYPE PUMP:

☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other _____

Depth to pump bowls, cylinder, jet, etc., _____ ft.

14) WELL TESTS:

Type Test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated

Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

15) WATER QUALITY:

Did you knowingly penetrate any strata which contained undesirable constituents?

☐ Yes ☐ No If yes, submit "REPORT OF UNDESIRABLE WATER"

Type of water? _____ Depth of strata _____

Was a chemical analysis made? ☐ Yes ☐ No

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - MDN

ADDRESS PO BOX 19278 (Street or RFD) AUSTIN, (City) TX. (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

VD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

645

State of Texas WELL REPORT

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 LAREDO TX (Street or RFD) (City) (State) (Zip)

2) LOCATION OF WELL County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:

Date Drilling: Started 12/3 19 93 Completed 12/3 19 93

Dia. (in.)	From (ft.)	To (ft.)
4	Surface	35.'

7) BOREHOLE COMPLETION:

☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 32.0 ft. to 20.0 ft.

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

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
2	N	PVC- SCREEN	32.0	22.5	.010
2	N	PVC- RISER	22.0	-2.5	40

(Use reverse side if necessary)

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 18.0 ft. to 1.0 ft. No. of Sacks Used 4
ft. to ft. No. of Sacks Used
Method used POUR BY HAND
Cemented by TEXCOR

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

11) WATER LEVEL:
Static level _____ ft. below land surface Date _____
Artesian flow _____ gpm. Date _____

12) PACKERS: Type Depth

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

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

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

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

COMPANY NAME TEXCOD FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103 - MDN

ADDRESS PO BOX 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

ATTENTION OWNER: Confidentially
Privilege Notice on Reverse Side

646

State of Texas
WELL REPORT

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

1) OWNER CITY OF LAREDO (Name) ADDRESS HWY 359 LAREDO, TX (Street or RFD) (City) (State) (Zip)

2) LOCATION OF WELL: County WEBB . 3 miles in E (NE, SW, etc.) direction from LAREDO (Town)

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

☐ LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

☒ SEE ATTACHED MAP

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

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

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

6) WELL LOG:
Date Drilling: Started 11/17 19 93 Completed 11/23 19 93

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
4	Surface	197

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

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 95.0 ft. to 70.0 ft.

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

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
2	N	PVC-SCREEN	95.0	75.0	.010
2	N	PVC-RISER	75	-2.5	40

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 197 ft. to 95 ft. No. of Sacks Used 21
68 ft. to 1 ft. No. of Sacks Used 14
Method used POUR BY HAND
Cemented by TEXCON

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

11) WATER LEVEL:
Static level _____ ft. below land surface Date _____
Artesian flow / gpm. Date _____

12) PACKERS: Type Depth

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

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

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

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

COMPANY NAME TEXCOR FIELD SERVICES, INC. (Type or print) WELL DRILLER'S LICENSE NO. 3103-MDN

ADDRESS PO BOX 19278 (Street or RFD) AUSTIN (City) TX (State) 78760 (Zip)

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

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

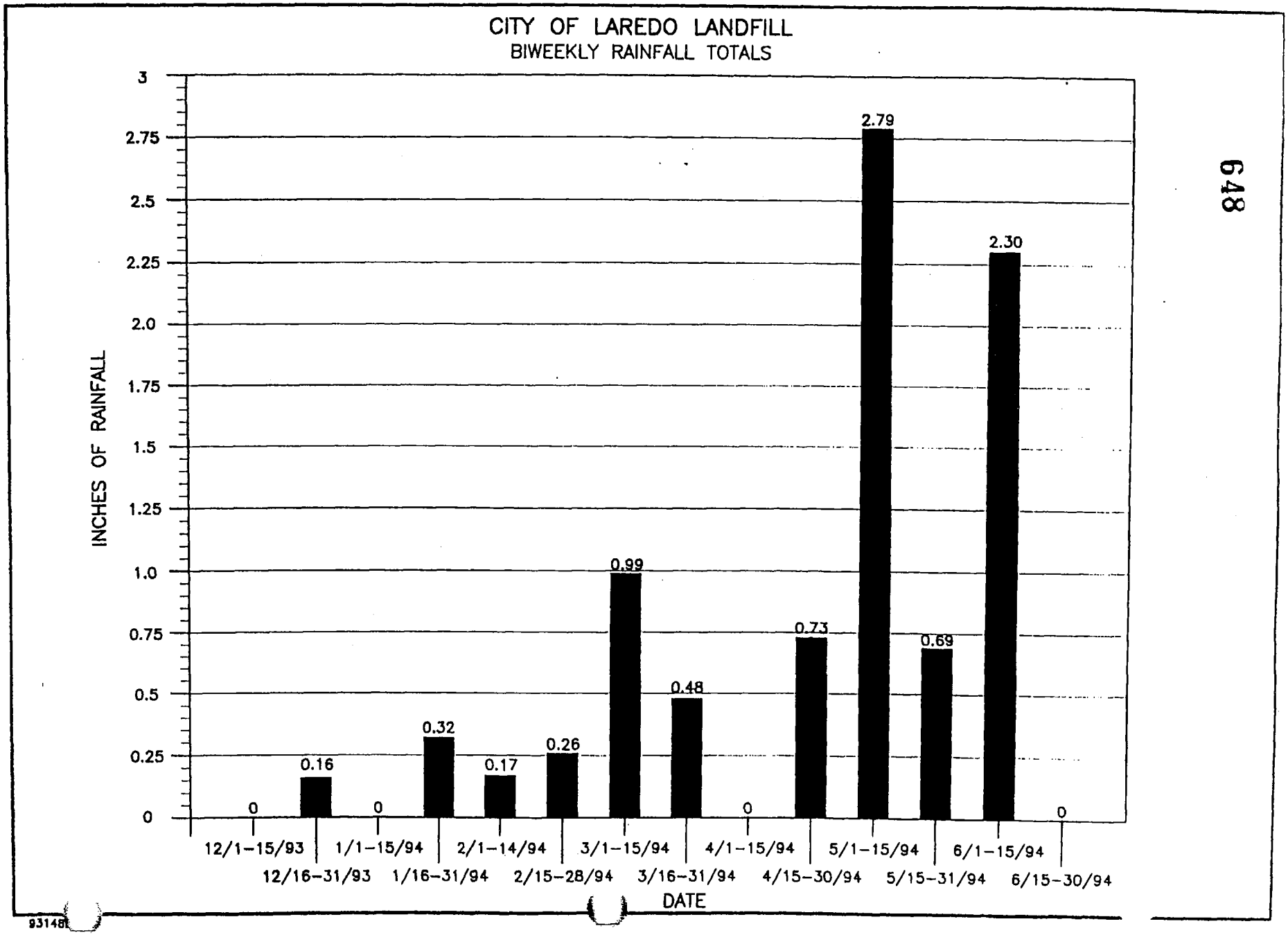
For TWC use only: Well No. _____ Located on map _____

WD-012 (Rev. 05-18-90)

WELL OWNER'S COPY

APPENDIX B

PRECIPITATION AND GROUNDWATER ELEVATION DATA


CITY OF LAREDO LANDFILL
BIWEEKLY RAINFALL TOTALS
INCHES OF RAINFALL
3
2.75
2.5
2.25
2.0
1.75
1.5
1.25
1.0
0.75
0.5
0.25
0
0
0.16
0
0.32
0.17
0.26
0.99
0.48
0
0.73
2.79
0.69
2.30
0
12/1-15/93
12/16-31/93
1/1-15/94
1/16-31/94
2/1-14/94
2/15-28/94
3/1-15/94
3/16-31/94
4/1-15/94
4/15-30/94
5/1-15/94
5/15-31/94
6/1-15/94
6/15-30/94
DATE

93148

649

DEPTH TO WATER MEASUREMENT REPORTING FORM

PROJECT LOCATION LAREDO LANDFILL

SWL PROJECT NO. 93-148

COLLECTED BY M. H.

WELL NO.	TIME	DATE	DEPTH TO WATER (FT)	COMMENTS
P-1		1/11/94	46.60	
P-2			DRY	
P-3			DRY	
P-4			46.36	
P-5			DRY	
P-6			DRY	
P-7			DRY	
P-8			80.83	
P-9			DRY	
P-10			DRY	
P-11			DRY	
P-12			68.00	

650

DEPTH TO WATER MEASUREMENT REPORTING FORM

PROJECT LOCATION CITY of LAREDO LANDFILL

SWL PROJECT NO. 93-148

COLLECTED BY D.W.

WELL NO.	TIME	DATE	DEPTH TO WATER (FT)	COMMENTS
P-1		2/17/94	46.56'	
P-2		"	Dry	
P-3		"	Dry	
P-4		"	46.42'	
P-5		"	Dry	
P-6		"	Dry	
P-7		"	Dry	
P-8		"	80.94'	
P-9		"	Dry	
P-10		"	Dry	
P-11		"	Dry	
P-12		"	68.03	

651

DEPTH TO WATER MEASUREMENT REPORTING FORM

PROJECT LOCATION CITY OF LAREDO LANDFILL

SWL PROJECT NO. 93-148

COLLECTED BY D. W.

WELL NO.	TIME	DATE	DEPTH TO WATER (FT)	COMMENTS
P-1		3/29/94	46.70'	
P-2			Dry	
P-3			Dry	
P-4			46.60'	
P-5			Dry	
P-6			Dry	
P-7			Dry	
P-8			81.19'	
P-9			Dry	
P-10			Dry	
P-11			Dry	
P-12		↓	68.15'	

652

DEPTH TO WATER MEASUREMENT REPORTING FORM

PROJECT LOCATION Lanzo Landfill

SWL PROJECT NO. 93-148

COLLECTED BY M.M.

WELL NO.	TIME	DATE	DEPTH TO WATER (FT)	COMMENTS
P-1		4/27/94	46.28	
P-2		"	Dry	
P-3		"	Dry	
P-4		"	46.11	
P-5		"	Dry	
P-6		"	Dry	
P-7		"	Dry	
P-8		"	80.42	
P-9		"	Dry	
P-10		"	Dry	
P-11		"	Dry	
P-12		"	67.68	

653

DEPTH TO WATER MEASUREMENT REPORTING FORM

PROJECT LOCATION Laredo Landfill

SWL PROJECT NO. 93 - 148

COLLECTED BY M. M.

WELL NO.	TIME	DATE	DEPTH TO WATER (FT)	COMMENTS
P-1		5/27/94	46.43	
P-2			Dry	
P-3			Dry	
P-4			46.29	
P-5			Dry	
P-6			Dry	
P-7			Dry	
P-8			30.65	
P-9			Dry	
P-10			Dry	
P-11			Dry	
P-12			67.90	

654

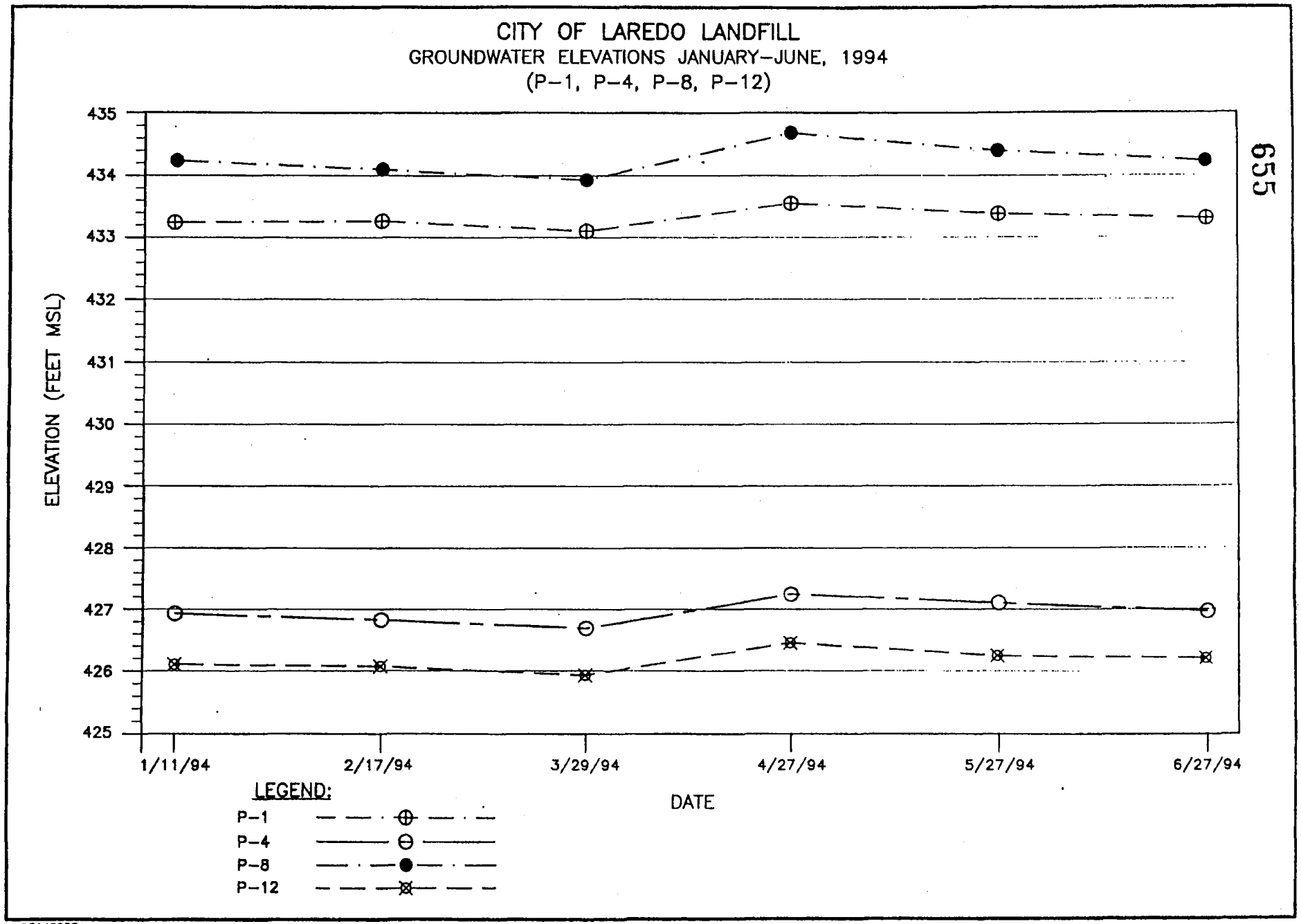
DEPTH TO WATER MEASUREMENT REPORTING FORM

PROJECT LOCATION CITY OF LAREDO LANDFILL

SWL PROJECT NO. 93-148

COLLECTED BY D.W.

WELL NO.	TIME	DATE	DEPTH TO WATER (FT)	COMMENTS
P-1		6/27/94	46.49'	
P-2			Dry	
P-3			Dry	
P-4			46.35'	
P-5			Dry	
P-6			Dry	
P-7			Dry	
P-8			80.84'	
P-9			Dry	
P-10			Dry	
P-11			Dry	
P-12			67.94'	


CITY OF LAREDO LANDFILL
GROUNDWATER ELEVATIONS JANUARY–JUNE, 1994
(P–1, P–4, P–8, P–12)
ELEVATION (FEET MSL)
435
434
433
432
431
430
429
428
427
426
425
1/11/94
2/17/94
3/29/94
4/27/94
5/27/94
6/27/94
DATE
LEGEND:
P–1
P–4
P–8
P–12
655
93148255

APPENDIX C

SLUG TEST RESULTS AND CALCULATION WORKSHEETS

657 SLUG TEST CALCULATION WORKSHEET

FOR PARTIALLY PENETRATING MONITOR WELLS

PROJECT: CITY OF LAREDO LANDFILL DATE: 1/11/94

SwL REF. #: 506593-148

DATA PARAMETERS

WELL ID:	P-1	
LENGTH OF SCREEN THROUGH SATURATED INTERVAL (Le):	20.00	feet
HEIGHT OF WATER COLUMN IN WELL (Lw):	29.15	feet
THICKNESS OF WATER BEARING UNIT (H):	60.00	feet
DIAMETER OF BORING (inches):	8.25	inches
DIAMETER OF CASING (inches):	2.00	inches

Determination of A and B from graph: Le/rw = 58.18

Enter "A" term from graph:	3.25	
Enter "B" term from graph:	0.5	
TIME from slug test (t):	22.50	minutes
Y at time t (Yt):	1.00	feet
Y INTERCEPT FROM SLUG TEST (Yo):	2.70	feet
RADIUS OF BORING (rw):	0.34	feet
RADIUS OF CASING (rc):	0.08	feet
Equation 1 (ln Re/Rw):	2.92	

CALCULATED VALUES

K = 2.24E-05 ft/min

K = 2.41E-01 gal/day/ft^2

EQUATIONS

$$\ln \frac{R_e}{rw} = \left[\frac{1.1}{\ln(L_w/rw)} + \frac{A + B \ln[(H - L_w)/rw]}{L_e/rw} \right]^{-1}$$

$$K = \frac{rc^2 \ln(R_e/rw) \ln(Yo/Yt)}{2 L_e t}$$

Note: The calculation method employed in this worksheet is based on the Bouwer and Rice Method. For further information see; Bouwer, H., 1989, The Bouwer and Rice Slug Test - An Update, Ground Water, Vol. 27, No. 3, pp. 304-309.

658

SLUG TEST CALCULATION WORKSHEET

FOR PARTIALLY PENETRATING MONITOR WELLS

PROJECT: CITY OF LAREDO LANDFILL DATE: 1/12/94

SwL REF. #: 506593-148

DATA PARAMETERS

WELL ID:	P-4	
LENGTH OF SCREEN THROUGH SATURATED INTERVAL (Le):	20.00	feet
HEIGHT OF WATER COLUMN IN WELL (Lw):	49.07	feet
THICKNESS OF WATER BEARING UNIT (H):	60.00	feet
DIAMETER OF BORING (inches):	8.25	inches
DIAMETER OF CASING (inches):	2.00	inches

Determination of A and B from graph: Le/rw= 58.18

Enter "A" term from graph:	3.25	
Enter "B" term from graph:	0.5	
TIME from slug test (t):	1.43	minutes
Y at time t (Yt):	0.30	feet
Y INTERCEPT FROM SLUG TEST (Yo):	1.90	feet
RADIUS OF BORING (rw):	0.34	feet
RADIUS OF CASING (rc):	0.08	feet
Equation 1 (ln Re/Rw):	3.25	

CALCULATED VALUES

K = 7.32E-04 ft/min

K = 7.88E+00 gal/day/ft^2

EQUATIONS

$$\ln \frac{R_e}{rw} = \left[\frac{1.1}{\ln(L_w/rw)} + \frac{A + B \ln[(H - L_w)/rw]}{L_e/rw} \right]^{-1}$$

$$K = \frac{rc^2 \ln(R_e/rw) \ln(Yo/Yt)}{2 L_e t}$$

Note: The calculation method employed in this worksheet is based on the Bouwer and Rice Method. For further information see; Bouwer, H., 1989, The Bouwer and Rice Slug Test - An Update, Ground Water, Vol. 27, No. 3, pp. 304-309.

659

SLUG TEST CALCULATION WORKSHEET

FOR PARTIALLY PENETRATING MONITOR WELLS

PROJECT: CITY OF LAREDO LANDFILL DATE: 1/11/94

SwL REF. #: 506593-148

DATA PARAMETERS

WELL ID:	P-8	
LENGTH OF SCREEN THROUGH SATURATED INTERVAL (Le):	10.03	feet
HEIGHT OF WATER COLUMN IN WELL (Lw):	10.03	feet
THICKNESS OF WATER BEARING UNIT (H):	60.00	feet
DIAMETER OF BORING (inches):	8.25	inches
DIAMETER OF CASING (inches):	2.00	inches

Determination of A and B from graph: Le/rw= 29.18

Enter "A" term from graph:	2.8	
Enter "B" term from graph:	0.4	
TIME from slug test (t):	130.00	minutes
Y at time t (Yt):	0.90	feet
Y INTERCEPT FROM SLUG TEST (Yo):	0.97	feet
RADIUS OF BORING (rw):	0.34	feet
RADIUS OF CASING (rc):	0.08	feet
Equation 1 (ln Re/Rw):	2.04	

CALCULATED VALUES

K = 4.07E-07 ft/min

K = 4.38E-03 gal/day/ft^2

EQUATIONS

$$\ln \frac{R_e}{rw} = \left[\frac{1.1}{\ln(L_w/rw)} + \frac{A + B \ln[(H - L_w)/rw]}{L_e/rw} \right]^{-1}$$

$$K = \frac{rc^2 \ln(R_e/rw) \ln(Yo/Yt)}{2 L_e t}$$

Note: The calculation method employed in this worksheet is based on the Bouwer and Rice Method. For further information see; Bouwer, H., 1989, The Bouwer and Rice Slug Test - An Update, Ground Water, Vol. 27, No. 3, pp. 304-309.

SLUG TEST CALCULATION WORKSHEET

660 FOR PARTIALLY PENETRATING MONITOR WELLS

PROJECT: CITY OF LAREDO LANDFILL DATE: 1/12/94

SwL REF. #: 506593-148

DATA PARAMETERS

WELL ID:	P-12	
LENGTH OF SCREEN THROUGH SATURATED INTERVAL (Le):	20.00	feet
HEIGHT OF WATER COLUMN IN WELL (Lw):	29.02	feet
THICKNESS OF WATER BEARING UNIT (H):	60.00	feet
DIAMETER OF BORING (inches):	8.25	inches
DIAMETER OF CASING (inches):	2.00	inches

Determination of A and B from graph: Le/rw= 58.18

Enter "A" term from graph:	3.25	
Enter "B" term from graph:	0.5	
TIME from slug test (t):	17.50	minutes
Y at time t (Yt):	0.50	feet
Y INTERCEPT FROM SLUG TEST (Yo):	1.40	feet
RADIUS OF BORING (rw):	0.34	feet
RADIUS OF CASING (rc):	0.08	feet
Equation 1 (ln Re/Rw):	2.92	

CALCULATED VALUES

K = 2.98E-05 ft/min

K = 3.21E-01 gal/day/ft^2

EQUATIONS

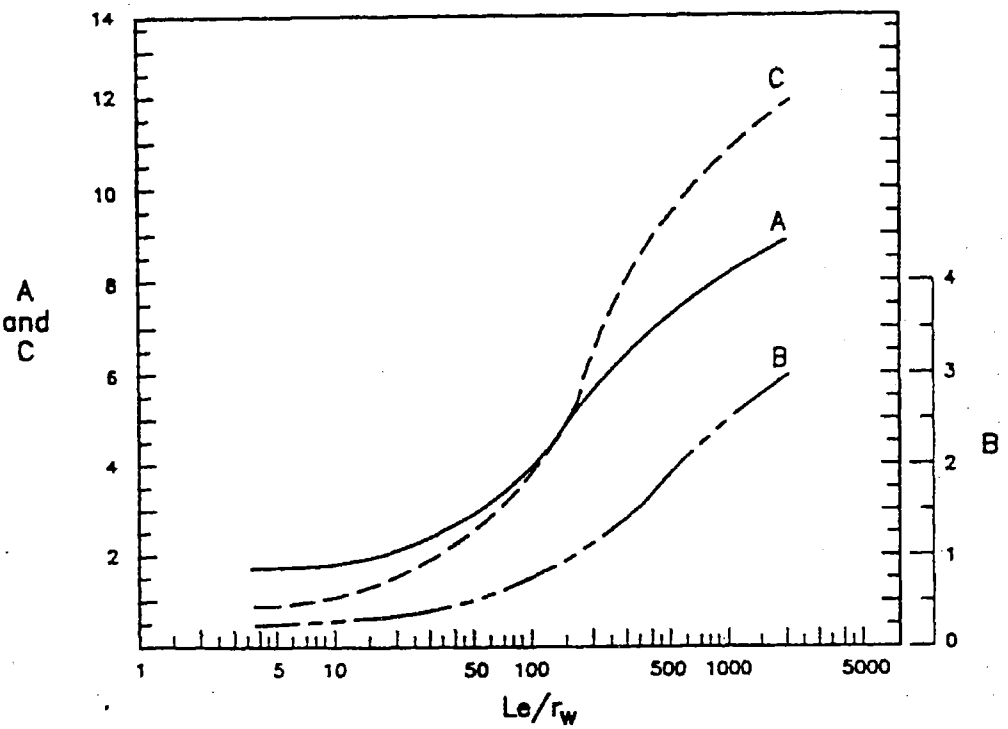
$$\ln \frac{R_e}{rw} = \left[\frac{1.1}{\ln(L_w/rw)} + \frac{A + B \ln[(H - L_w)/rw]}{L_e/rw} \right]^{-1}$$

$$K = \frac{rc^2 \ln(R_e/rw) \ln(Yo/Yt)}{2 L_e t}$$

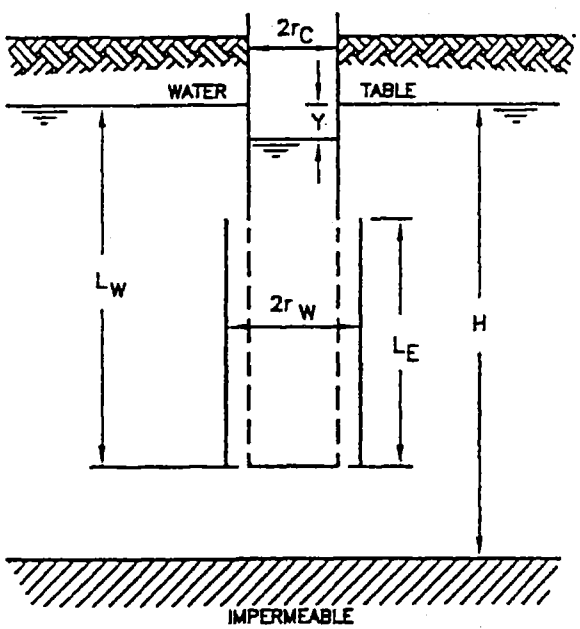
Note: The calculation method employed in this worksheet is based on the Bouwer and Rice Method. For further information see; Bouwer, H., 1989, The Bouwer and Rice Slug Test - An Update, Ground Water, Vol. 27, No. 3, pp. 304-309.

PROJECT NUMBER: _____

661



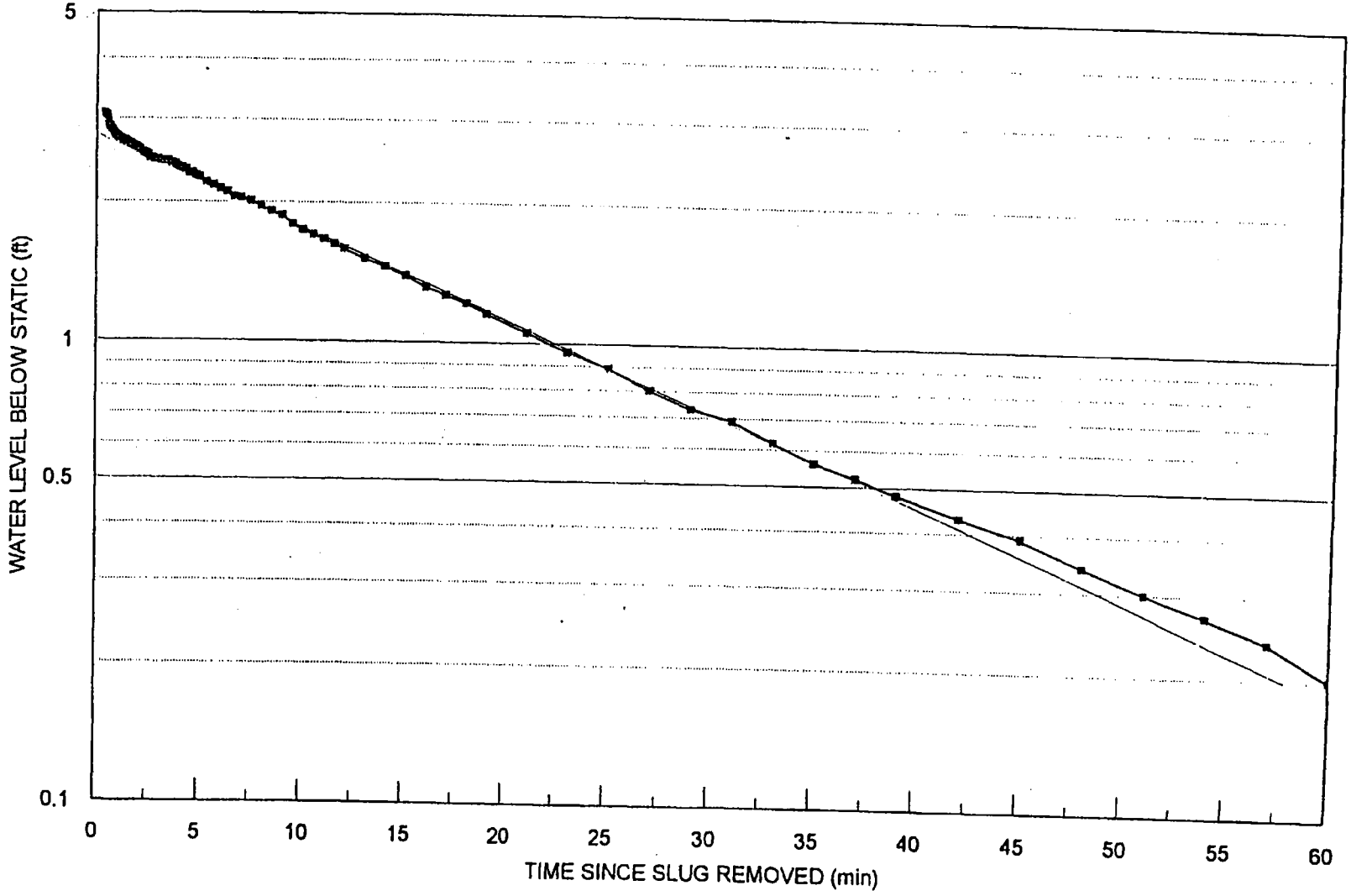
NOTE: Curves relating coefficients A, B, C to Le/r_w.



NOTE: Geometry and symbols of a partially penetrating, partially perforated well in unconfined aquifer with gravel pack or developed zone around perforated section. Re is not shown; it is defined as the effective radius over which Y is dissipated.

SLUG TEST P-1

CITY OF LAREDO LANDFILL



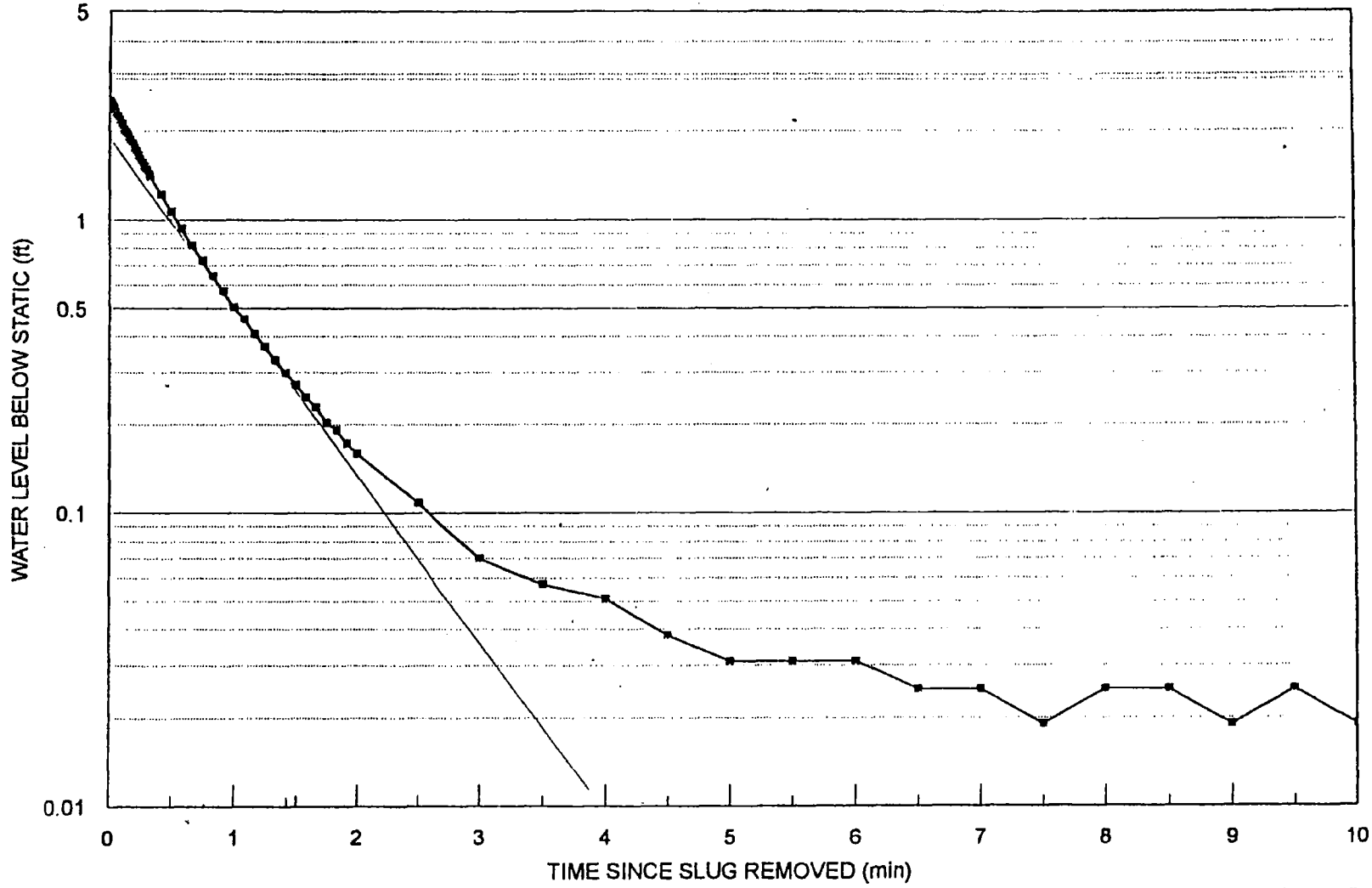
SwL Reference No. 506593-148

Southwestern Laboratories, Inc.

Austin, Texas

SLUG TEST P-4

CITY OF LAREDO LANDFILL



663

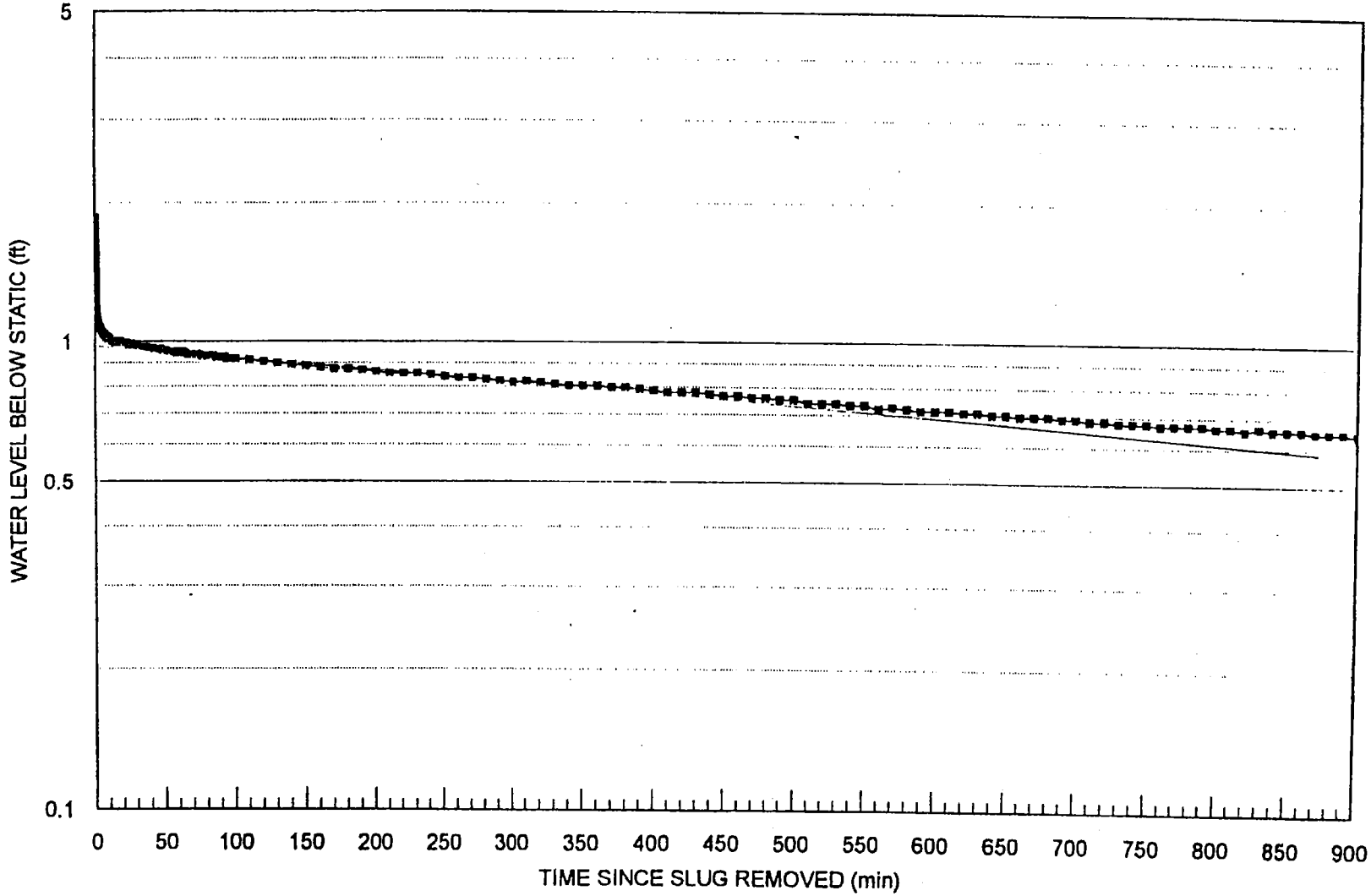
SwL Reference No. 506593-148

Southwestern Laboratories, Inc.

Austin, Texas

SLUG TEST P-8

CITY OF LAREDO LANDFILL



SwL Reference No. 506593-148

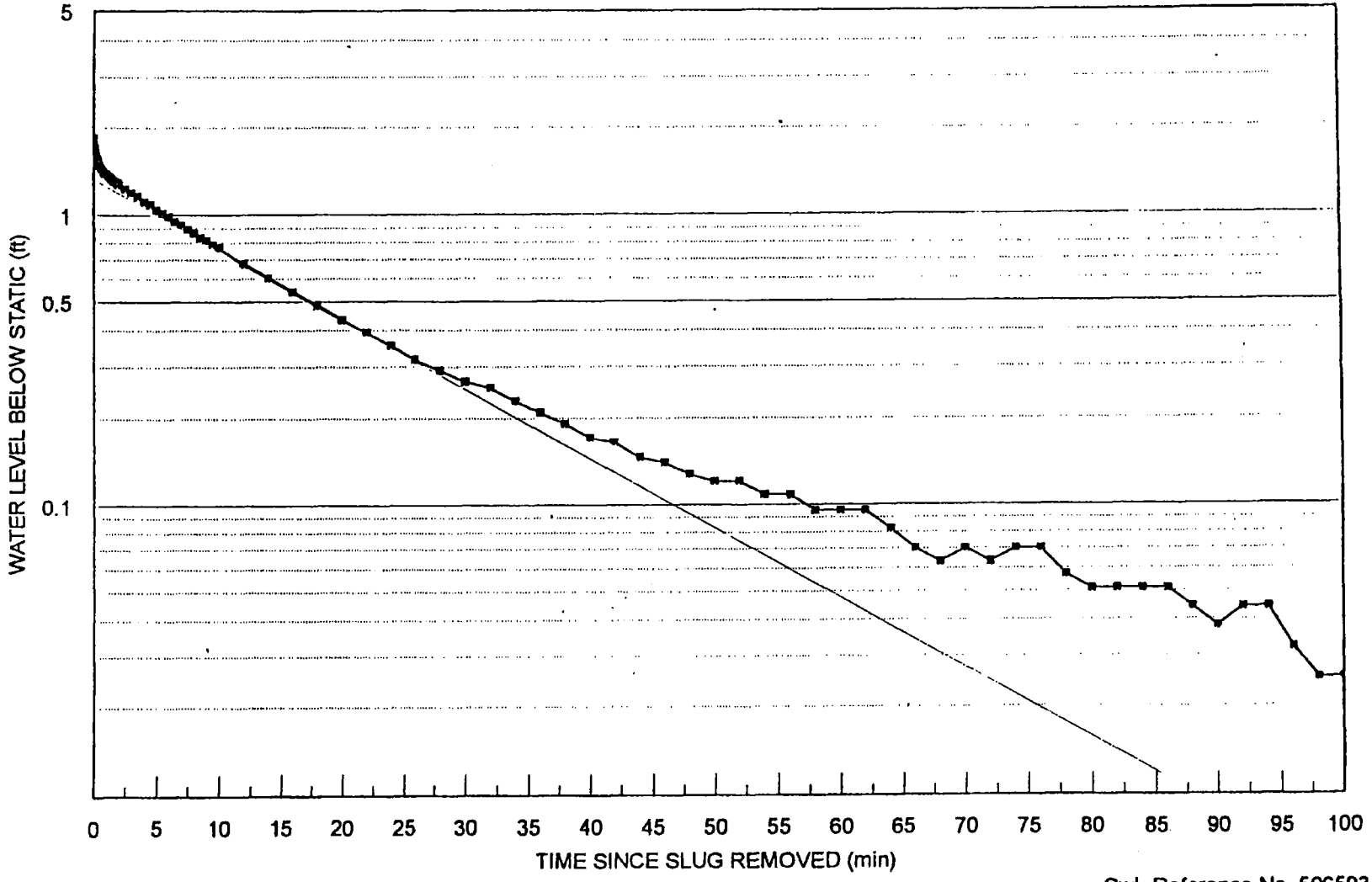
Southwestern Laboratories, Inc

Austin, Texas

664

SLUG TEST P-12

CITY OF LAREDO LANDFILL



SwL Reference No. 506593-148

Southwestern Laboratories, Inc.

Austin, Texas

SLUG TEST DATA P-1

666

TIME (minutes)	TIME (seconds)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
0.0000	0	46.51	46.51	0	0	0
0.4166	25	49.58	46.51	3.07	3.07	1
0.4667	28	49.56	46.51	3.05	3.07	0.99349
0.5167	31	49.55	46.51	3.04	3.07	0.99023
0.5667	34	49.45	46.51	2.94	3.07	0.95765
0.6333	38	49.4	46.51	2.89	3.07	0.94137
0.6833	41	49.39	46.51	2.88	3.07	0.93811
0.7167	43	49.35	46.51	2.84	3.07	0.92508
0.7667	46	49.34	46.51	2.83	3.07	0.92182
0.8	48	49.33	46.51	2.82	3.07	0.91857
0.8333	50	49.31	46.51	2.8	3.07	0.91205
0.8667	52	49.3	46.51	2.79	3.07	0.90879
0.8833	53	49.29	46.51	2.78	3.07	0.90554
0.9167	55	49.28	46.51	2.77	3.07	0.90228
0.95	57	49.27	46.51	2.76	3.07	0.89902
0.9833	59	49.26	46.51	2.75	3.07	0.89577
1.0333	62	49.25	46.51	2.74	3.07	0.89251
1.0833	65	49.24	46.51	2.73	3.07	0.88925
1.1667	70	49.23	46.51	2.72	3.07	0.88599
1.2334	74	49.22	46.51	2.71	3.07	0.88274
1.3	78	49.21	46.51	2.7	3.07	0.87948
1.4	84	49.2	46.51	2.69	3.07	0.87622
1.45	87	49.19	46.51	2.68	3.07	0.87296
1.5	90	49.18	46.51	2.67	3.07	0.86971
1.55	93	49.17	46.51	2.66	3.07	0.86645
1.6333	98	49.16	46.51	2.65	3.07	0.86319
1.7	102	49.15	46.51	2.64	3.07	0.85993
1.7667	106	49.14	46.51	2.63	3.07	0.85668
1.8333	110	49.13	46.51	2.62	3.07	0.85342
1.9167	115	49.12	46.51	2.61	3.07	0.85016
2	120	49.11	46.51	2.6	3.07	0.84691
2.0833	125	49.09	46.51	2.58	3.07	0.84039
2.25	135	49.05	46.51	2.54	3.07	0.82736
2.3333	140	49.04	46.51	2.53	3.07	0.8241
2.4167	145	49.03	46.51	2.52	3.07	0.82085
2.5	150	49.02	46.51	2.51	3.07	0.81759
2.5833	155	48.98	46.51	2.47	3.07	0.80456
2.6667	160	48.98	46.51	2.47	3.07	0.80456
2.75	165	48.98	46.51	2.47	3.07	0.80456
2.8333	170	48.97	46.51	2.46	3.07	0.8013
2.9167	175	48.97	46.51	2.46	3.07	0.8013
3	180	48.97	46.51	2.46	3.07	0.8013
3.1667	190	48.95	46.51	2.44	3.07	0.79479
3.3333	200	48.95	46.51	2.44	3.07	0.79479
3.5	210	48.95	46.51	2.44	3.07	0.79479
3.6667	220	48.93	46.51	2.42	3.07	0.78827
3.8333	230	48.91	46.51	2.4	3.07	0.78176

667

SLUG TEST DATA P-1

TIME (minutes)	TIME (seconds)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
4	240	48.88	46.51	2.37	3.07	0.77199
4.1667	250	48.87	46.51	2.36	3.07	0.76873
4.3333	260	48.85	46.51	2.34	3.07	0.76221
4.5	270	48.81	46.51	2.3	3.07	0.74919
4.6667	280	48.81	46.51	2.3	3.07	0.74919
4.8333	290	48.78	46.51	2.27	3.07	0.73941
5	300	48.77	46.51	2.26	3.07	0.73616
5.3333	320	48.71	46.51	2.2	3.07	0.71661
5.6667	340	48.68	46.51	2.17	3.07	0.70684
6	360	48.64	46.51	2.13	3.07	0.69381
6.3333	380	48.61	46.51	2.1	3.07	0.68404
6.6667	400	48.56	46.51	2.05	3.07	0.66775
7	420	48.55	46.51	2.04	3.07	0.6645
7.5	450	48.52	46.51	2.01	3.07	0.65472
8	480	48.47	46.51	1.96	3.07	0.63844
8.5	510	48.42	46.51	1.91	3.07	0.62215
9	540	48.38	46.51	1.87	3.07	0.60912
9.5	570	48.3	46.51	1.79	3.07	0.58306
10	600	48.25	46.51	1.74	3.07	0.56678
10.5	630	48.21	46.51	1.7	3.07	0.55375
11	660	48.17	46.51	1.66	3.07	0.54072
11.5	690	48.13	46.51	1.62	3.07	0.52769
12	720	48.09	46.51	1.58	3.07	0.51466
13	780	48.02	46.51	1.51	3.07	0.49186
14	840	47.96	46.51	1.45	3.07	0.47231
15	900	47.9	46.51	1.39	3.07	0.45277
16	960	47.82	46.51	1.31	3.07	0.42671
17	1020	47.77	46.51	1.26	3.07	0.41042
18	1080	47.72	46.51	1.21	3.07	0.39414
19	1140	47.66	46.51	1.15	3.07	0.37459
21	1260	47.56	46.51	1.05	3.07	0.34202
23	1380	47.47	46.51	0.96	3.07	0.3127
25	1500	47.4	46.51	0.89	3.07	0.2899
27	1620	47.31	46.51	0.8	3.07	0.26059
29	1740	47.24	46.51	0.73	3.07	0.23779
31	1860	47.2	46.51	0.69	3.07	0.22476
33	1980	47.13	46.51	0.62	3.07	0.20195
35	2100	47.07	46.51	0.56	3.07	0.18241
37	2220	47.03	46.51	0.52	3.07	0.16938
39	2340	46.99	46.51	0.48	3.07	0.15635
42	2520	46.94	46.51	0.43	3.07	0.14007
45	2700	46.9	46.51	0.39	3.07	0.12704
48	2880	46.85	46.51	0.34	3.07	0.11075
51	3060	46.81	46.51	0.3	3.07	0.09772
54	3240	46.78	46.51	0.27	3.07	0.08795
57	3420	46.75	46.51	0.24	3.07	0.07818
60	3600	46.71	46.51	0.2	3.07	0.06515

668

SLUG TEST DATA P-4

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
0	48.852	46.33	2.522	0	0
0.0033	48.833	46.33	2.503	2.522	0.99247
0.0066	48.814	46.33	2.484	2.522	0.98493
0.01	48.807	46.33	2.477	2.522	0.98216
0.0133	48.782	46.33	2.452	2.522	0.97224
0.0166	48.775	46.33	2.445	2.522	0.96947
0.02	48.763	46.33	2.433	2.522	0.96471
0.0233	48.75	46.33	2.42	2.522	0.95956
0.0266	48.731	46.33	2.401	2.522	0.95202
0.03	48.725	46.33	2.395	2.522	0.94964
0.0333	48.699	46.33	2.369	2.522	0.93933
0.05	48.635	46.33	2.305	2.522	0.91396
0.0666	48.565	46.33	2.235	2.522	0.8862
0.0833	48.508	46.33	2.178	2.522	0.8636
0.1	48.438	46.33	2.108	2.522	0.83584
0.1166	48.342	46.33	2.012	2.522	0.79778
0.1333	48.304	46.33	1.974	2.522	0.78271
0.15	48.247	46.33	1.917	2.522	0.76011
0.1666	48.196	46.33	1.866	2.522	0.73989
0.1833	48.145	46.33	1.815	2.522	0.71967
0.2	48.088	46.33	1.758	2.522	0.69707
0.2166	48.037	46.33	1.707	2.522	0.67684
0.2333	47.986	46.33	1.656	2.522	0.65662
0.25	47.935	46.33	1.605	2.522	0.6364
0.2666	47.897	46.33	1.567	2.522	0.62133
0.2833	47.852	46.33	1.522	2.522	0.60349
0.3	47.807	46.33	1.477	2.522	0.58565
0.3166	47.763	46.33	1.433	2.522	0.5682
0.3333	47.731	46.33	1.401	2.522	0.55551
0.4166	47.553	46.33	1.223	2.522	0.48493
0.5	47.4	46.33	1.07	2.522	0.42427
0.5833	47.266	46.33	0.936	2.522	0.37113
0.6666	47.145	46.33	0.815	2.522	0.32316
0.75	47.056	46.33	0.726	2.522	0.28787
0.8333	46.973	46.33	0.643	2.522	0.25496
0.9166	46.903	46.33	0.573	2.522	0.2272
1	46.833	46.33	0.503	2.522	0.19944
1.0833	46.788	46.33	0.458	2.522	0.1816
1.1666	46.737	46.33	0.407	2.522	0.16138
1.25	46.699	46.33	0.369	2.522	0.14631
1.3333	46.661	46.33	0.331	2.522	0.13125
1.4166	46.629	46.33	0.299	2.522	0.11856
1.5	46.603	46.33	0.273	2.522	0.10825
1.5833	46.578	46.33	0.248	2.522	0.09833
1.6666	46.559	46.33	0.229	2.522	0.0908
1.75	46.533	46.33	0.203	2.522	0.08049
1.8333	46.521	46.33	0.191	2.522	0.07573

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SLUG TEST DATA P-4

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
1.9166	46.502	46.33	0.172	2.522	0.0682
2.0000	46.489	46.33	0.159	2.522	0.06305
2.5000	46.438	46.33	0.108	2.522	0.04282
3.0000	46.4	46.33	0.07	2.522	0.02776
3.5000	46.387	46.33	0.057	2.522	0.0226
4.0000	46.381	46.33	0.051	2.522	0.02022
4.5000	46.368	46.33	0.038	2.522	0.01507
5.0000	46.361	46.33	0.031	2.522	0.01229
5.5000	46.361	46.33	0.031	2.522	0.01229
6.0000	46.361	46.33	0.031	2.522	0.01229
6.5000	46.355	46.33	0.025	2.522	0.00991
7.0000	46.355	46.33	0.025	2.522	0.00991
7.5000	46.349	46.33	0.019	2.522	0.00753
8.0000	46.355	46.33	0.025	2.522	0.00991
8.5000	46.355	46.33	0.025	2.522	0.00991
9.0000	46.349	46.33	0.019	2.522	0.00753
9.5000	46.355	46.33	0.025	2.522	0.00991
10.0000	46.349	46.33	0.019	2.522	0.00753
12.0000	46.343	46.33	0.013	2.522	0.00515
14.0000	46.349	46.33	0.019	2.522	0.00753
16.0000	46.336	46.33	0.006	2.522	0.00238
18.0000	46.336	46.33	0.006	2.522	0.00238

SLUG TEST DATA P-8

670

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
1.9166	81.356	80.25	1.106	1.852	0.59719
2.0000	81.356	80.25	1.106	1.852	0.59719
2.5000	81.337	80.25	1.087	1.852	0.58693
3.0000	81.324	80.25	1.074	1.852	0.57991
3.5000	81.318	80.25	1.068	1.852	0.57667
4.0000	81.312	80.25	1.062	1.852	0.57343
4.5000	81.299	80.25	1.049	1.852	0.56641
5.0000	81.299	80.25	1.049	1.852	0.56641
5.5000	81.286	80.25	1.036	1.852	0.5594
6.0000	81.286	80.25	1.036	1.852	0.5594
6.5000	81.28	80.25	1.03	1.852	0.55616
7.0000	81.28	80.25	1.03	1.852	0.55616
7.5000	81.274	80.25	1.024	1.852	0.55292
8.0000	81.268	80.25	1.018	1.852	0.54968
8.5000	81.268	80.25	1.018	1.852	0.54968
9.0000	81.268	80.25	1.018	1.852	0.54968
9.5000	81.261	80.25	1.011	1.852	0.5459
10.0000	81.261	80.25	1.011	1.852	0.5459
12.0000	81.249	80.25	0.999	1.852	0.53942
14.0000	81.242	80.25	0.992	1.852	0.53564
16.0000	81.249	80.25	0.999	1.852	0.53942
18.0000	81.249	80.25	0.999	1.852	0.53942
20.0000	81.242	80.25	0.992	1.852	0.53564
22.0000	81.242	80.25	0.992	1.852	0.53564
24.0000	81.236	80.25	0.986	1.852	0.5324
26.0000	81.236	80.25	0.986	1.852	0.5324
28.0000	81.23	80.25	0.98	1.852	0.52916
30.0000	81.23	80.25	0.98	1.852	0.52916
32.0000	81.223	80.25	0.973	1.852	0.52538
34.0000	81.223	80.25	0.973	1.852	0.52538
36.0000	81.223	80.25	0.973	1.852	0.52538
38.0000	81.217	80.25	0.967	1.852	0.52214
40.0000	81.217	80.25	0.967	1.852	0.52214
42.0000	81.211	80.25	0.961	1.852	0.5189
44.0000	81.211	80.25	0.961	1.852	0.5189
46.0000	81.211	80.25	0.961	1.852	0.5189
48.0000	81.204	80.25	0.954	1.852	0.51512
50.0000	81.204	80.25	0.954	1.852	0.51512
52.0000	81.198	80.25	0.948	1.852	0.51188
54.0000	81.198	80.25	0.948	1.852	0.51188
56.0000	81.198	80.25	0.948	1.852	0.51188
58.0000	81.192	80.25	0.942	1.852	0.50864
60.0000	81.198	80.25	0.948	1.852	0.51188
62.0000	81.198	80.25	0.948	1.852	0.51188
64.0000	81.192	80.25	0.942	1.852	0.50864
66.0000	81.185	80.25	0.935	1.852	0.50486
68.0000	81.185	80.25	0.935	1.852	0.50486

SLUG TEST DATA P-8

671

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
420	81.027	80.25	0.777	1.852	0.41955
430	81.027	80.25	0.777	1.852	0.41955
440	81.021	80.25	0.771	1.852	0.41631
450	81.015	80.25	0.765	1.852	0.41307
460	81.015	80.25	0.765	1.852	0.41307
470	81.008	80.25	0.758	1.852	0.40929
480	81.008	80.25	0.758	1.852	0.40929
490	81.002	80.25	0.752	1.852	0.40605
500	81.002	80.25	0.752	1.852	0.40605
510	80.989	80.25	0.739	1.852	0.39903
520	80.989	80.25	0.739	1.852	0.39903
530	80.989	80.25	0.739	1.852	0.39903
540	80.983	80.25	0.733	1.852	0.39579
550	80.983	80.25	0.733	1.852	0.39579
560	80.97	80.25	0.72	1.852	0.38877
570	80.977	80.25	0.727	1.852	0.39255
580	80.97	80.25	0.72	1.852	0.38877
590	80.964	80.25	0.714	1.852	0.38553
600	80.964	80.25	0.714	1.852	0.38553
610	80.964	80.25	0.714	1.852	0.38553
620	80.958	80.25	0.708	1.852	0.38229
630	80.958	80.25	0.708	1.852	0.38229
640	80.951	80.25	0.701	1.852	0.37851
650	80.951	80.25	0.701	1.852	0.37851
660	80.945	80.25	0.695	1.852	0.37527
670	80.945	80.25	0.695	1.852	0.37527
680	80.945	80.25	0.695	1.852	0.37527
690	80.939	80.25	0.689	1.852	0.37203
700	80.939	80.25	0.689	1.852	0.37203
710	80.932	80.25	0.682	1.852	0.36825
720	80.932	80.25	0.682	1.852	0.36825
730	80.926	80.25	0.676	1.852	0.36501
740	80.926	80.25	0.676	1.852	0.36501
750	80.926	80.25	0.676	1.852	0.36501
760	80.92	80.25	0.67	1.852	0.36177
770	80.92	80.25	0.67	1.852	0.36177
780	80.92	80.25	0.67	1.852	0.36177
790	80.92	80.25	0.67	1.852	0.36177
800	80.914	80.25	0.664	1.852	0.35853
810	80.914	80.25	0.664	1.852	0.35853
820	80.907	80.25	0.657	1.852	0.35475
830	80.914	80.25	0.664	1.852	0.35853
840	80.907	80.25	0.657	1.852	0.35475
850	80.907	80.25	0.657	1.852	0.35475
860	80.907	80.25	0.657	1.852	0.35475
870	80.901	80.25	0.651	1.852	0.35151
880	80.901	80.25	0.651	1.852	0.35151

SLUG TEST DATA P-8

672

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
890	80.901	80.25	0.651	1.852	0.35151
900	80.895	80.25	0.645	1.852	0.34827

673

SLUG TEST DATA P-12

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
1.9166	69.23	67.94	1.29	1.83	0.70492
2.0000	69.217	67.94	1.277	1.83	0.69781
2.5000	69.173	67.94	1.233	1.83	0.67377
3.0000	69.135	67.94	1.195	1.83	0.65301
3.5000	69.097	67.94	1.157	1.83	0.63224
4.0000	69.052	67.94	1.112	1.83	0.60765
4.5000	69.027	67.94	1.087	1.83	0.59399
5.0000	68.982	67.94	1.042	1.83	0.5694
5.5000	68.957	67.94	1.017	1.83	0.55574
6.0000	68.925	67.94	0.985	1.83	0.53825
6.5000	68.887	67.94	0.947	1.83	0.51749
7.0000	68.862	67.94	0.922	1.83	0.50383
7.5000	68.83	67.94	0.89	1.83	0.48634
8.0000	68.804	67.94	0.864	1.83	0.47213
8.5000	68.772	67.94	0.832	1.83	0.45464
9.0000	68.754	67.94	0.814	1.83	0.44481
9.5000	68.728	67.94	0.788	1.83	0.4306
10.0000	68.709	67.94	0.769	1.83	0.42022
12.0000	68.613	67.94	0.673	1.83	0.36776
14.0000	68.544	67.94	0.604	1.83	0.33005
16.0000	68.48	67.94	0.54	1.83	0.29508
18.0000	68.423	67.94	0.483	1.83	0.26393
20.0000	68.372	67.94	0.432	1.83	0.23607
22.0000	68.334	67.94	0.394	1.83	0.2153
24.0000	68.296	67.94	0.356	1.83	0.19454
26.0000	68.258	67.94	0.318	1.83	0.17377
28.0000	68.232	67.94	0.292	1.83	0.15956
30.0000	68.207	67.94	0.267	1.83	0.1459
32.0000	68.194	67.94	0.254	1.83	0.1388
34.0000	68.169	67.94	0.229	1.83	0.12514
36.0000	68.149	67.94	0.209	1.83	0.11421
38.0000	68.131	67.94	0.191	1.83	0.10437
40.0000	68.111	67.94	0.171	1.83	0.09344
42.0000	68.105	67.94	0.165	1.83	0.09016
44.0000	68.086	67.94	0.146	1.83	0.07978
46.0000	68.08	67.94	0.14	1.83	0.0765
48.0000	68.067	67.94	0.127	1.83	0.0694
50.0000	68.06	67.94	0.12	1.83	0.06557
52.0000	68.06	67.94	0.12	1.83	0.06557
54.0000	68.048	67.94	0.108	1.83	0.05902
56.0000	68.048	67.94	0.108	1.83	0.05902
58.0000	68.035	67.94	0.095	1.83	0.05191
60.0000	68.035	67.94	0.095	1.83	0.05191
62.0000	68.035	67.94	0.095	1.83	0.05191
64.0000	68.022	67.94	0.082	1.83	0.04481
66.0000	68.01	67.94	0.07	1.83	0.03825
68.0000	68.003	67.94	0.063	1.83	0.03443

SLUG TEST DATA P-12

674

TIME (minutes)	WATER LEVEL	STATIC WATER LEVEL	CHANGE IN WATER LEVEL	Ho	H/Ho
70.0000	68.01	67.94	0.07	1.83	0.03825
72.0000	68.003	67.94	0.063	1.83	0.03443
74.0000	68.01	67.94	0.07	1.83	0.03825
76.0000	68.01	67.94	0.07	1.83	0.03825
78.0000	67.997	67.94	0.057	1.83	0.03115
80.0000	67.991	67.94	0.051	1.83	0.02787
82.0000	67.991	67.94	0.051	1.83	0.02787
84.0000	67.991	67.94	0.051	1.83	0.02787
86.0000	67.991	67.94	0.051	1.83	0.02787
88.0000	67.984	67.94	0.044	1.83	0.02404
90.0000	67.978	67.94	0.038	1.83	0.02077
92.0000	67.984	67.94	0.044	1.83	0.02404
94.0000	67.984	67.94	0.044	1.83	0.02404
96.0000	67.972	67.94	0.032	1.83	0.01749
98.0000	67.965	67.94	0.025	1.83	0.01366
100.000	67.965	67.94	0.025	1.83	0.01366
110.000	67.965	67.94	0.025	1.83	0.01366

APPENDIX C
SLUG TEST RESULTS AND CALCULATION WORKSHEETS

Groundwater flow gradients were calculated using the following formula:

$$\text{Gradient} = \frac{\text{Difference in head (feet)}}{\text{Length of flow path (feet)}}$$

Based on the change in hydraulic head measured between piezometers P-8 and P-12, the gradient calculated from the 3/29/94 water level measurements was:

$$\text{Gradient} = \frac{433.87 - 425.97 \text{ ft}}{1{,}450 \text{ ft}} = 5.45 \times 10^{-3} \text{ ft/ft}$$

and for the 4/27/94 water level measurements:

$$\text{Gradient} = \frac{434.64 - 426.44 \text{ ft}}{1{,}450 \text{ ft}} = 5.65 \times 10^{-3} \text{ ft/ft}$$

which yields and average gradient toward the northeast of:

$$\text{average gradient} = 5.55 \times 10^{-3} \text{ ft/ft}$$

Based on the change in hydraulic head measured between P-1 and P-12, the gradient calculated from the 3/29/94 water level measurements was:

$$\text{Gradient} = \frac{433.11 - 425.97 \text{ ft}}{2{,}750 \text{ ft}} = 2.60 \times 10^{-3} \text{ ft/ft}$$

and for the 4/27/94 water level measurements:

$$\text{Gradient} = \frac{433.53 - 426.44 \text{ ft}}{2{,}750 \text{ ft}} = 2.58 \times 10^{-3} \text{ ft/ft}$$

which yields an average gradient toward the southeast of:

$$\text{average gradient} = 2.59 \times 10^{-3} \text{ ft/ft}$$

Two groundwater flow velocities were calculated using the following formula:

$$V = \frac{KI}{7.5\ (N)}$$

where: V = Velocity of groundwater flow (ft/day);
K = Hydraulic conductivity (gpd/ft^2);
I = Hydraulic gradient (ft/ft); and
N = Porosity (%).

For groundwater flow toward the northeast, the following velocity was calculated:

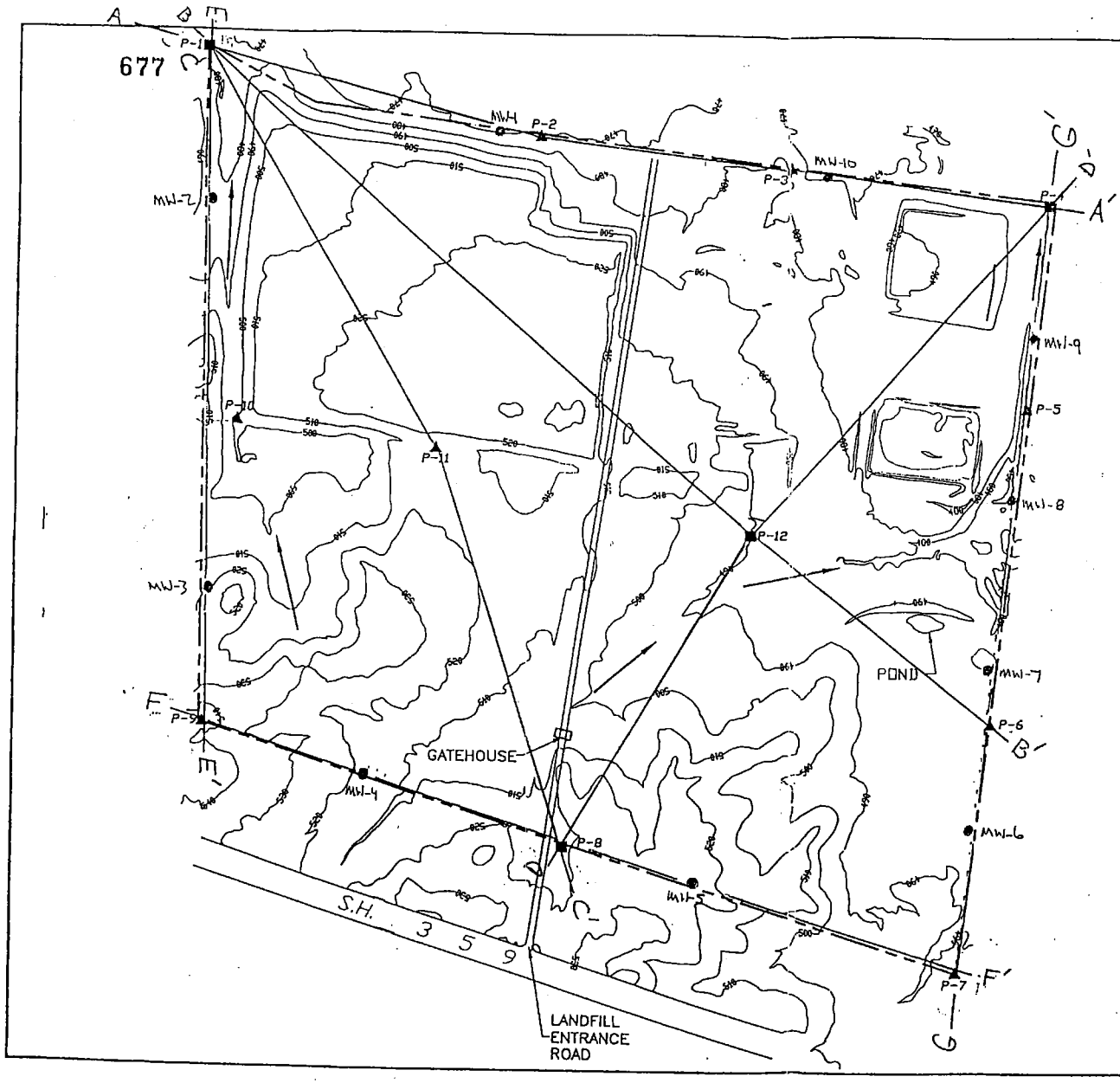
$$V = \frac{(2.11\ gpd/ft^2)(5.55 \times 10^{-3}\ ft/ft)}{7.5\ (.30)}$$

$$V = 5.20 \times 10^{-3}\ ft/day \text{ toward the northeast}$$

For groundwater flow toward the southeast, the following velocity was calculated:

$$V = \frac{(2.11\ gpd/ft^2)(2.59 \times 10^{-3}\ ft/ft)}{7.5\ (.30)}$$

$$V = 2.43 \times 10^{-3}\ ft/day \text{ toward the southeast}$$



N

0 100 200 400
(SCALE IN FEET)

LEGEND:

- PROPERTY LINE
- P-1 DEEP PIEZOMETER LOCATION
- P-2 SHALLOW PIEZOMETER LOCATION
- DIRECTION OF SURFACE DRAINAGE
- SURFACE CONTOURS IN FEET ABOVE MEAN SEA LEVEL (INTERVAL = 10 FT.)
- MW-1 PROPOSED MONITORING WELL LOCATION

REV. NO.	DATE	DESCRIPTION	DR BY	APP BY

PIEZOMETER LOCATION MAP

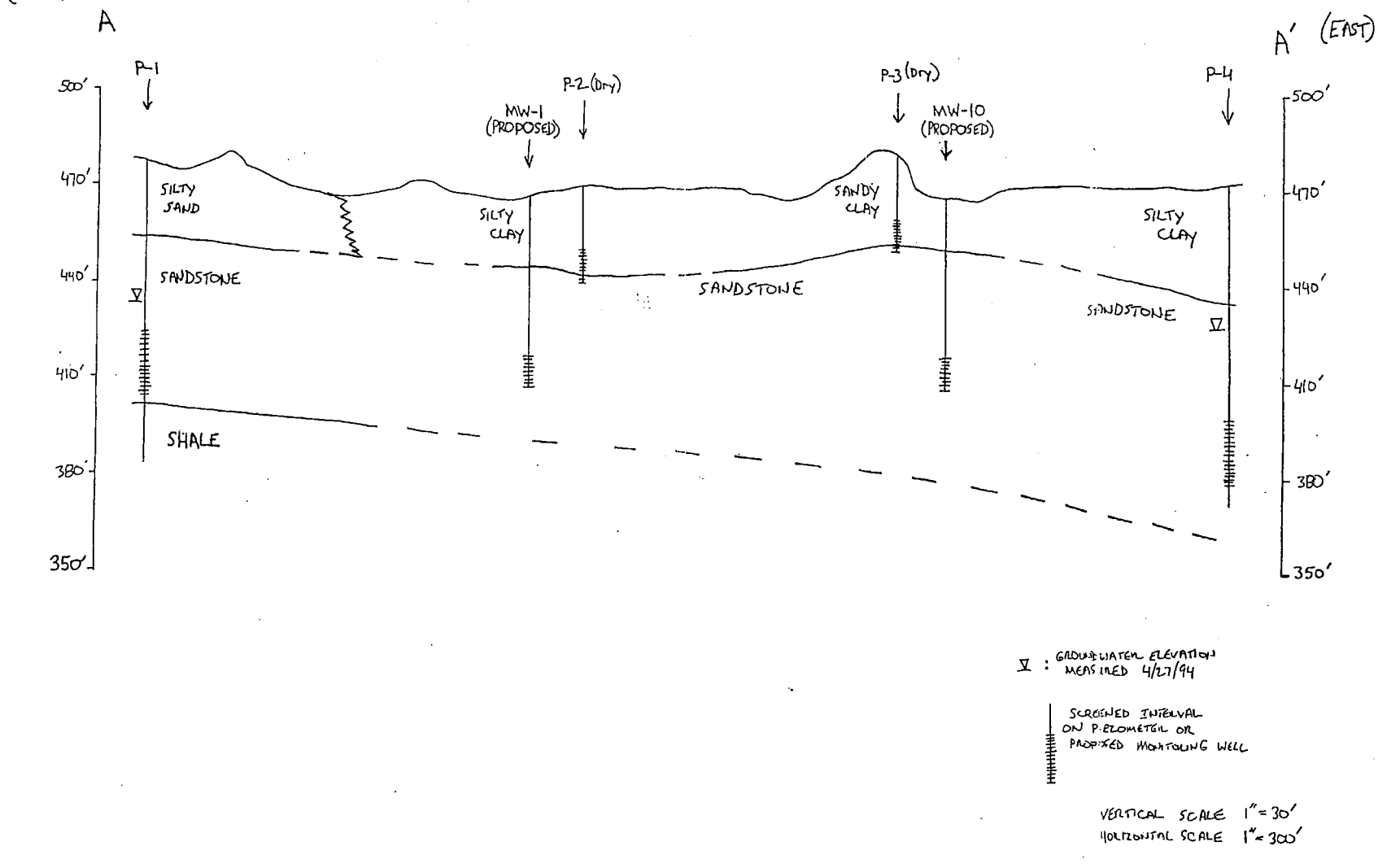
CITY OF LAREDO LANDFILL
CITY OF LAREDO
LAREDO, TEXAS

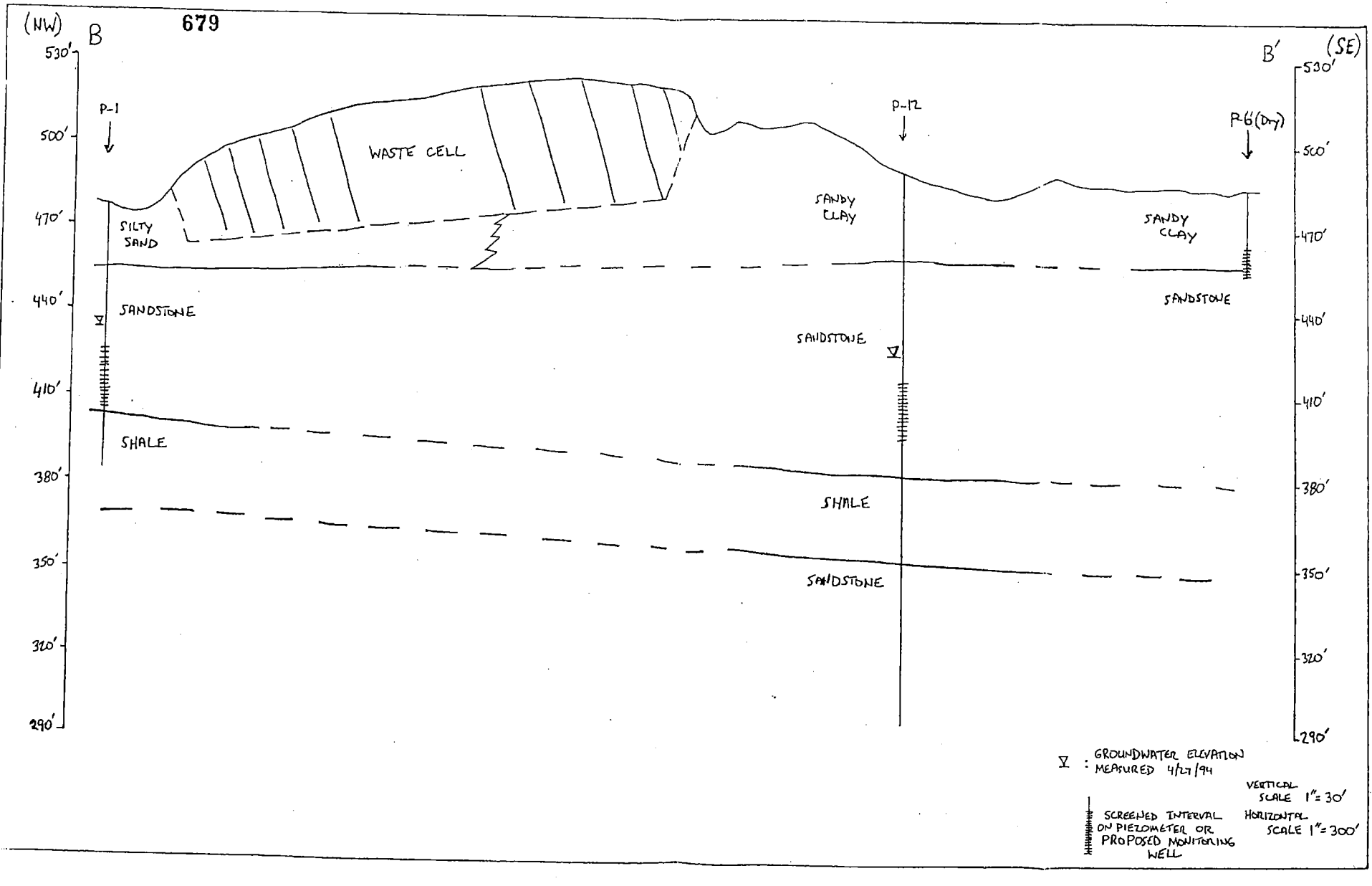
Huntingdon — Huntingdon Engineering & Environmental, Inc.

REFERENCE NO:	506593-148
DRAWING NO:	93148256
DATE ISSUED:	08-19-1994

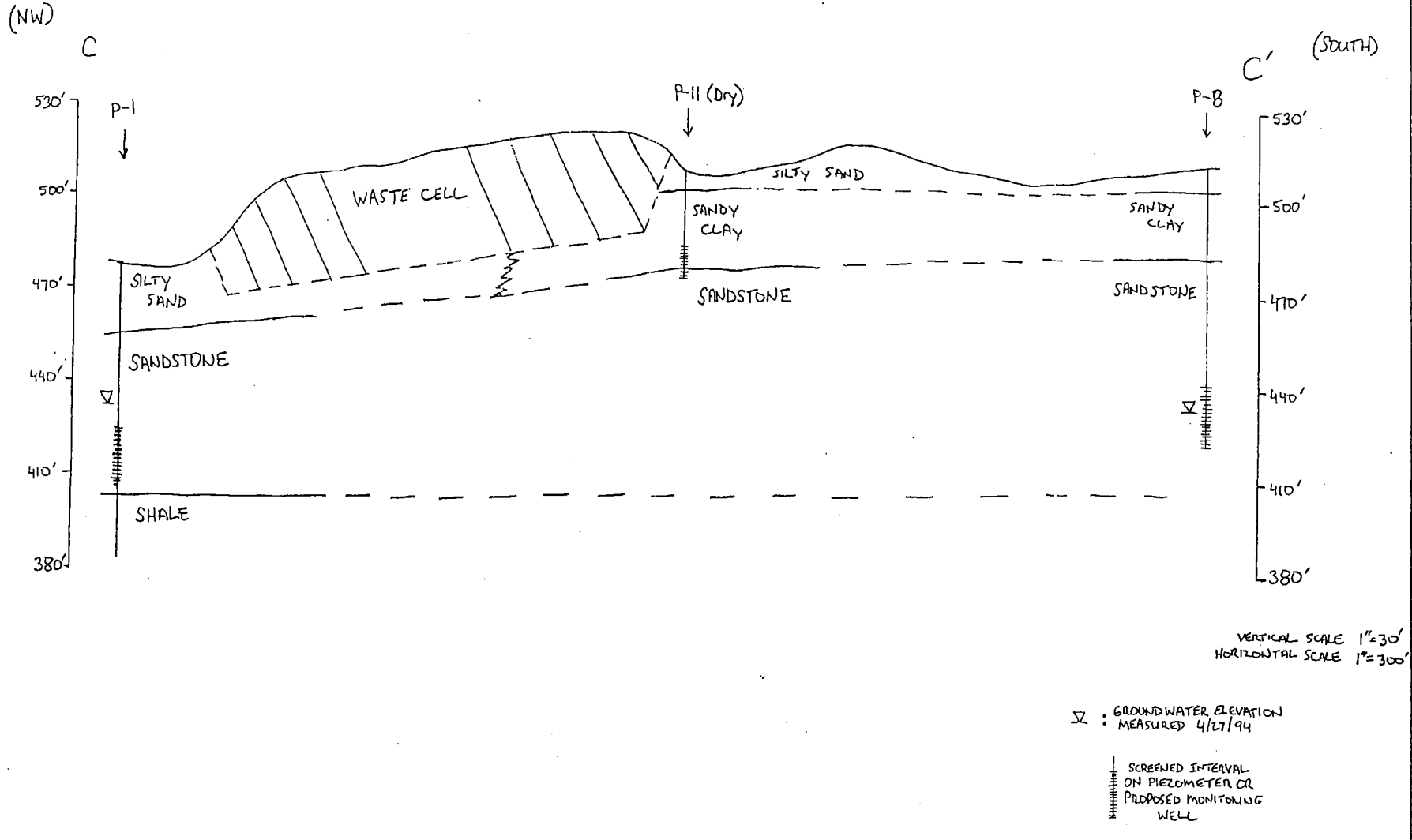
FIGURE NO. 3

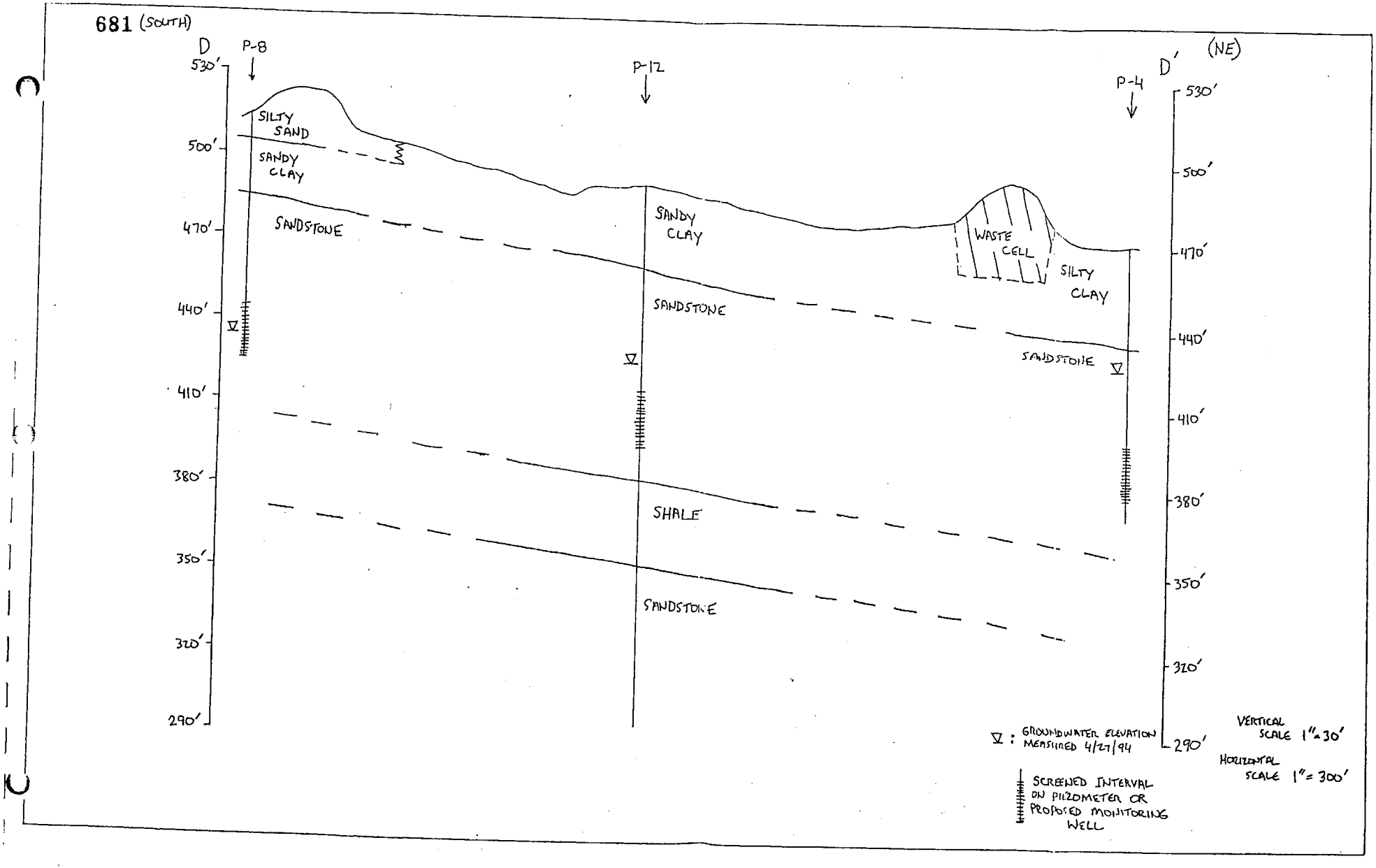
678


(WEST)
A
A' (EAST)
P-1
P-2 (Dry)
MW-1 (PROPOSED)
P-3 (Dry)
MW-10 (PROPOSED)
P-4
500'
470'
440'
410'
380'
350'
SILTY SAND
SILTY CLAY
SANDY CLAY
SILTY CLAY
SANDSTONE
SANDSTONE
SANDSTONE
SHALE
▽ : GROUNDWATER ELEVATION MEASURED 4/27/94
SCREENED INTERVAL ON PIEZOMETER OR PROPOSED MONITORING WELL
VERTICAL SCALE 1" = 30'
HORIZONTAL SCALE 1" = 300'

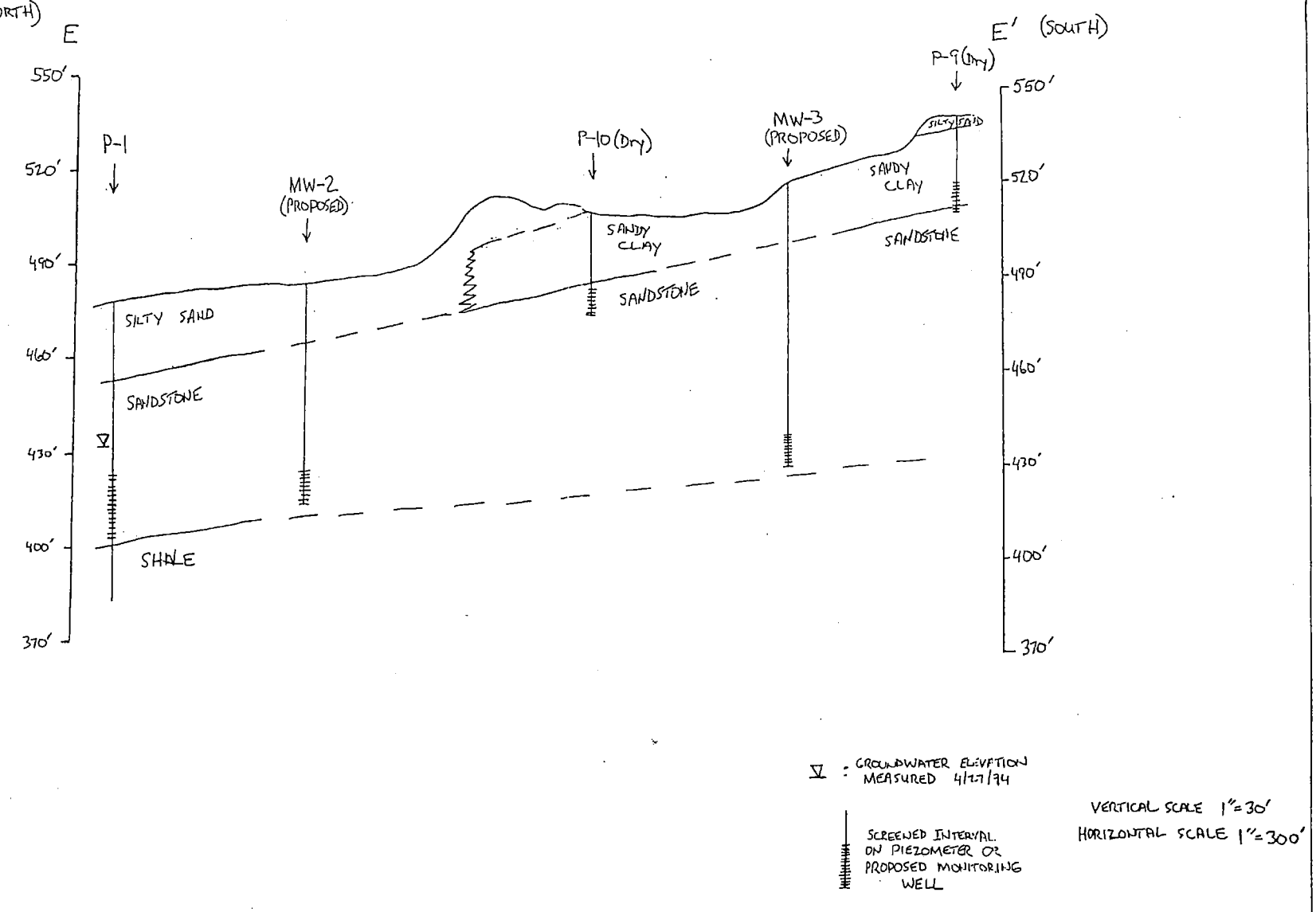

(NW)
B
B'
(SE)
530'
500'
470'
440'
410'
380'
350'
320'
290'
P-1
P-12
P-6 (Dry)
WASTE CELL
SILTY SAND
SANDY CLAY
SANDY CLAY
SANDSTONE
SANDSTONE
SANDSTONE
SHALE
SHALE
SANDSTONE
▽ : GROUNDWATER ELEVATION MEASURED 4/27/94
SCREENED INTERVAL ON PIEZOMETER OR PROPOSED MONITORING WELL
VERTICAL SCALE 1"= 30'
HORIZONTAL SCALE 1"= 300'

680

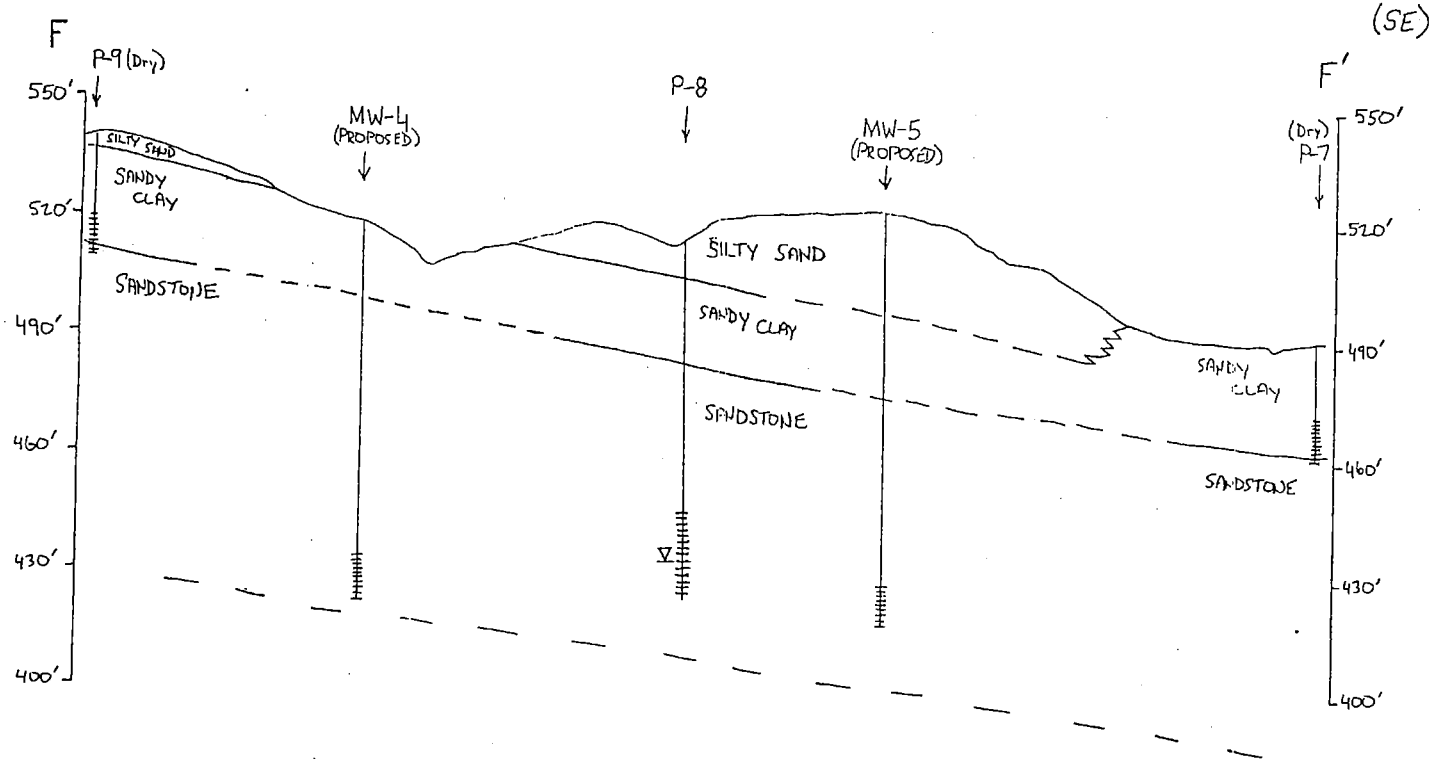

(NW)
C
C'
(SOUTH)
530'
500'
470'
440'
410'
380'
P-1
P-11 (Dry)
P-8
WASTE CELL
SILTY SAND
SANDY CLAY
SILTY SAND
SANDSTONE
SANDY CLAY
SANDSTONE
SANDSTONE
SHALE
VERTICAL SCALE 1"=30'
HORIZONTAL SCALE 1"=300'
▽ : GROUNDWATER ELEVATION MEASURED 4/27/94
SCREENED INTERVAL ON PIEZOMETER OR PROPOSED MONITORING WELL


681 (SOUTH)
D
P-8
P-12
P-4
D'
(NE)
530'
500'
470'
440'
410'
380'
350'
320'
290'
SILTY SAND
SANDY CLAY
SANDSTONE
SANDY CLAY
SANDSTONE
SHALE
SANDSTONE
WASTE CELL
SILTY CLAY
SANDSTONE
▽ : GROUNDWATER ELEVATION MEASURED 4/27/94
SCREENED INTERVAL IN PIEZOMETER OR PROPOSED MONITORING WELL
VERTICAL SCALE 1"=30'
HORIZONTAL SCALE 1"=300'

682


(NORTH)
E
E' (SOUTH)
550'
520'
490'
460'
430'
400'
370'
P-1
MW-2 (PROPOSED)
P-10 (Dry)
MW-3 (PROPOSED)
P-9 (Dry)
SILTY SAND
SANDSTONE
SHALE
SANDY CLAY
SANDSTONE
SILTY SAND
SANDY CLAY
SANDSTONE
▽ : GROUNDWATER ELEVATION MEASURED 4/27/94
SCREENED INTERVAL ON PIEZOMETER OR PROPOSED MONITORING WELL
VERTICAL SCALE 1"=30'
HORIZONTAL SCALE 1"=300'

683



VERTICAL SCALE 1" = 30'
HORIZONTAL SCALE 1" = 300'

▽ : GROUNDWATER ELEVATION MEASURED 4/27/94

SCREENED INTERVAL ON PIEZOMETER OR PROPOSED MONITORING WELL

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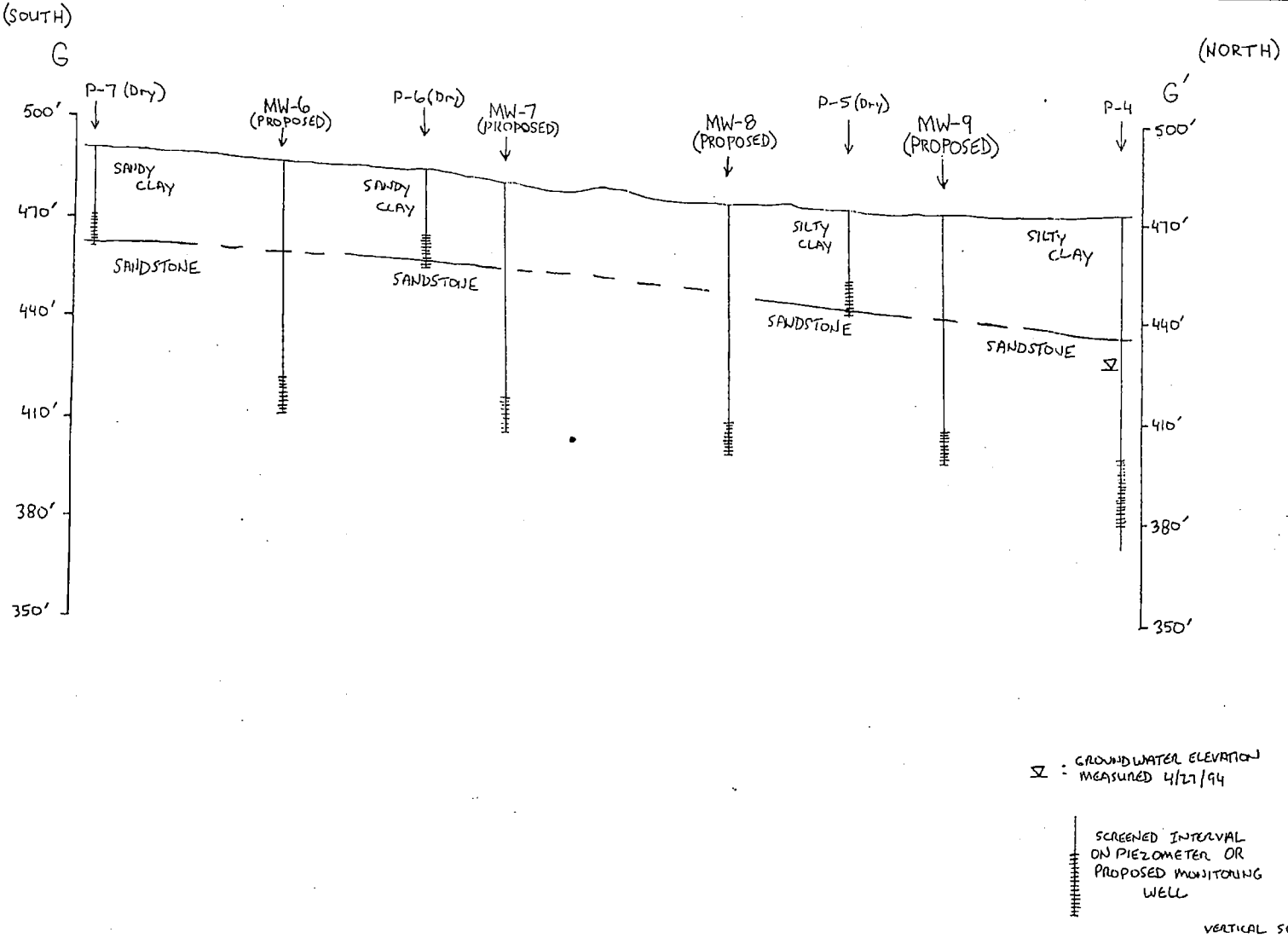
(SOUTH)
G
(NORTH)
G'
P-7 (Dry)
MW-6 (PROPOSED)
P-6 (Dry)
MW-7 (PROPOSED)
MW-8 (PROPOSED)
P-5 (Dry)
MW-9 (PROPOSED)
P-4
500'
470'
440'
410'
380'
350'
SANDY CLAY
SANDY CLAY
SILTY CLAY
SILTY CLAY
SANDSTONE
SANDSTONE
SANDSTONE
SANDSTONE
▽ : GROUNDWATER ELEVATION MEASURED 4/27/94
SCREENED INTERVAL ON PIEZOMETER OR PROPOSED MONITORING WELL
VERTICAL SCALE 1"= 30'
HORIZONTAL SCALE 1"= 300'

Appendix B

Geotechnical Investigation Report

Frank Bryant & Associates, Inc.

November 1983

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GEOTECHNICAL INVESTIGATION
PROPOSED 200-ACRE MUNICIPAL SOLID WASTE FACILITY
U. S. HIGHWAY 359
LAREDO, TEXAS

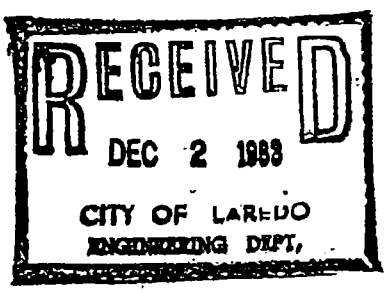
Report for:

City of Laredo
Engineering Department
P. O. Box 2769
Laredo, Texas 78041

Attn: Mr. Amador Escudero, P. E.
City Engineer

and

Gulf Coast Testing Laboratory, Inc.
P. O. Box 1148
Corpus Christi, Texas 78403



November 30, 1983

Submitted by:

FRANK G. BRYANT & ASSOCIATES, INC.

M. Q. Stapp, Jr., P. E.
Executive Vice-President

Distribution: Gulf Coast Testing Laboratory, Inc. (10)

Job No. 4875

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GEOTECHNICAL INVESTIGATION
PROPOSED 200-ACRE MUNICIPAL SOLID WASTE FACILITY
U. S. HIGHWAY 359
LAREDO, TEXAS

INTRODUCTION

General: On September 6, 1983, a geotechnical investigation was initiated at the site of the proposed 200-Acre Municipal Solid Waste Facility on U. S. Highway 359 in Webb County, Texas. The purpose of this investigation has been to determine the suitability of the site for a sanitary landfill operation.

The investigation was authorized by the City of Laredo Engineering Department on August 18, 1983.

Scope of Investigation: The following investigations and engineering studies were performed in connection with the preparation of this report.

1. Core borings were drilled in order to:
   a. Determine subsurface strata present at the site.
   b. Obtain samples and cores of subsurface materials for laboratory analysis.
   c. Investigate existing conditions of subsurface materials by pocket penetrometer tests and field penetration tests.
   d. Investigate groundwater conditions at the site.
   e. Investigate the permeability of subsurface materials by field permeability tests.
2. Auger borings were drilled in order to further investigate groundwater conditions at the site.
3. Samples and cores of subsurface materials were analyzed in the laboratory by:
   a. Visual examination and classification.
   b. Atterberg limits tests.
   c. Minus 200 mesh sieve tests.
   d. Unit dry weight and moisture content tests.
   e. Sieve analyses.

f. Falling head permeability tests.

g. Unconfined compression tests.

3. The information obtained by subsurface exploration and laboratory investigations was used in engineering studies to determine the suitability of the site for a sanitary landfill operation. Details and results of the investigation are discussed in the following paragraphs.

SUBSURFACE EXPLORATION

Subsurface materials at the site were explored by twenty-two core borings ranging in depth from 49.5 to 51.0 ft. and by four auger borings, each drilled to 40.0 ft. below the existing ground surface. The location of the project is shown on attached Plate I, and the locations of the borings are shown on attached Plate II.

The borings were drilled using a Central Mine Equipment (CME-55) core drilling rig equipped with a hydraulic pull-down for thin-walled tube sampling of cohesive soils (ASTM designation D 1587), hoisting gear and hammer for penetration testing and split-barrel sampling of cohesionless soils (ASTM designation D 1586) and double-tube core barrel for diamond core drilling in the primary shale and sandstone formations (ASTM designation D 2113).

The core borings were advanced to depths ranging from 4.6 to 15.6 ft. prior to using drilling fluid and the samples and holes were observed during and after completion of the drilling operations to investigate groundwater conditions at the site. Results of these observations are shown by the notes and symbols on the attached logs of borings.

Four auger borings were drilled to further investigate groundwater conditions at the site. Observations of the auger borings indicated that groundwater was not present above the 40-ft. depth at the four locations.

Pocket penetrometer tests were performed on all undisturbed samples. Results of these tests are shown, along with the results of the standard penetration tests, core

recoveries and Rock Quality Designations (RQD), on the right-hand side of the attached logs of borings.

Short lengths of hollow stem auger were installed in the upper portion of the borings to prevent caving during the coring operations. Upon completion of the coring operations, constant head field permeability tests were conducted on the subsurface materials between the bottom of the hollow stem auger and the bottom of several of the borings. Results of these tests are shown on attached Table III.

A transit and level survey of the boring locations was performed by others to accurately locate the borings and determine mean sea level elevations at the locations. The locations of the borings are shown on attached Plate II and the elevations of the ground surface are shown on the attached logs of borings.

LABORATORY INVESTIGATIONS

All samples and cores of subsurface materials from the borings were examined and classified in the laboratory. Laboratory classifications of the subsurface materials are shown on the attached logs of borings.

Index properties of the subsurface materials were investigated by Atterberg limits tests. Grain-size characteristics of the subsurface materials were investigated by sieve analyses. Results of these tests are shown by the summary on attached Table I.

Existing conditions of the subsurface materials were investigated by unit dry weight and moisture content tests. Strength properties of the subsurface materials were determined by unconfined compression tests. Results of these tests are shown by the summary on attached Table I.

One remolded sample and ten undisturbed samples were trimmed into a Harvard consolidation apparatus for permeability determinations using established procedures for testing under falling head conditions. Results of the laboratory permeability tests are shown on attached Table II.

SUBSURFACE MATERIALS AND CONDITIONS

Specific types and depths of subsurface strata encountered at the twenty-two locations are shown on the attached logs of borings and by the subsurface profiles on attached Plates III through VII. In general, subsurface materials from the ground surface down consist of: 0.3 to 13.4 ft. (average 4.1 ft.) of soil ranging from a minor amount of gravel to highly plastic clay and varying in color from brown and tan to maroon and greenish gray; 0.0 to 32.5 ft. (average 9.1 ft.) of greenish gray, sandy shale with maroon shale layers; 0.0 to 25.0 ft. (average 14.5 ft.) of light greenish gray and tan, shaly limestone; 0.0 to 13.0 ft. (average 6.9 ft.) of gray, shaly sandstone; and, light gray sandstone down to at least the bottom of the borings (average thickness of 14.4 ft.).

The primary sandstone and shale formation is known geologically as the Laredo Formation of the Claiborne Group of Eocene Series of the Tertiary System of the Cenozoic Era. The Laredo Formation is described geologically as sandstone and clay; thick sandstone members in upper and lower part, very fine- to fine-grained, in part glauconitic, micaceous, ferruginous, crossbedded, dominantely red and brown; clay in middle, weathers orange-yellow; dark gray limestone concretions common, some fossiliferous; marine megafossils abundant; thickness about 620.0 ft.[1] The soils have primarily been formed by weathering of the Laredo Formation. The thicker soil zones appear to be deposits of soils eroded from higher elevations.

Observations of the four auger borings (A, B, C and D) indicated that groundwater was not present above the 40.0-ft. depth. Observations of several of the other borings indicated that groundwater was not present above depths of 41.0 ft., 48.8 ft., 44.7 ft., 40.5 ft., 44.0 ft., 47.5 ft., 43.5 ft. and 42.2 ft. in borings B-5, B-9, B-11,

---

[1]Geologic Atlas of Texas, Laredo Sheet, Julia Gardner Memorial Addition, 1976.

B-12, B-16, B-17, B-18 and B-22, respectively. It appears that groundwater was not present above the bottom of the borings.

Pocket penetrometer tests on undisturbed samples indicate that the relative consistency of the cohesive soils and shale ranges from very stiff to hard based on a soil consistency description.

Field permeability tests in the borings determined permeability coefficients in the range of 1.08×10^{-5} to 8.98×10^{-5} cm./sec. Laboratory permeability tests on selected, undisturbed samples of the soil, shale and sandstone indicated permeability coefficients in the range of 1.53×10^{-7} to 2.27×10^{-8}. Based on considerations of the types and conditions of the subsurface materials, the lower permeability coefficients determined in the laboratory are considered more representative of the subsurface materials than the field permeability tests.

INFORMATION REGARDING AREA FAULTS

No faults were detected at the proposed landfill site and the Geologic Atlas of Texas, Laredo Sheet, prepared by the Bureau of Economic Geology in 1976, shows no fault in the proposed landfill area. The nearest fault to the site is approximately two miles northeast of the landfill site and is located in a northwest/southeast direction, approximately parallel to the site.

INFORMATION REGARDING SUBSIDENCE AT THE SITE

During the field exploration operations, no indication of subsidence was detected. A review of published geologic information does not indicate that subsidence has occurred or that sufficient quantites of water or oil and gas have been removed from the area so that subsidence is likely to become a problem in the future.

EXCAVATION FOR LANDFILL

Results of the pocket penetrometer tests indicate that the soils and upper shale (that were penetrated by thin walled Shelby tube samplers) will excavate similar to a hard soil. The difficulty in excavating the subsurface materials will increase with depth. However, it appears that a major portion of the sandy shale and shaly

sandstone above the fossil zone can be excavated without excessive difficulty. The surface of the fossil zone was encountered at the following depths.

Boring No.	Depth to Surface of Fossil Zone, Ft.
B-1	27.2
B-2	12.5
B-3	35.9
B-4	36.0
B-5	33.5
B-6	31.0
B-7	34.0
B-8	30.7
B-9	27.5
B-10	35.8
B-11	31.9
B-12	22.1
B-13	47.4
B-14	37.5
B-15	36.8
B-16	26.6
B-17	17.2
B-18	25.9
B-19	36.7
B-20	——
B-21	16.7
B-22	23.5

Depending on the type of hauling and loading equipment, it may be desirable to break some of the harder subsurface materials with a heavy-duty rooter blade prior to loading and hauling the materials. Depending on the depth of the excavation and on the proposed use of the excavated materials, it will probably be desirable to stockpile the various subsurface materials separately, according to the way they beak down during the excavation operations.

Minor zones (pockets of sand and gravel) will likely be encountered in some areas. Groundwater pockets may be present in the sand and gravel zones, particularly during wet seasons. However, with the proper drainage of surface water around the area, it does not appear that groundwater will be a problem.

COVER MATERIAL

Based on the results of the laboratory tests and Atterberg limits tests, the CH clays, CL clays and sandy shales are sufficiently impevious for construction of impervious cover material and liners. It is the writers opinion that the sandy shales and shaly sandstones below the soil are sufficiently impervious so that a bottom liner will not be required. Where sand and gravel layers are encountered in the soils above the shale and sandstone, these materials are sufficiently pervious that they could permit water to enter and exist from the landfill. Therefore, it is recommended that the sides of the trenches be lined in the areas where the sand and gravel strata are encountered. The liner should be at least 3.0 ft. thick on the slope and should extend at least 3.0 ft. above the sand and gravel zones on the slopes. Depending on the construction procedures, it may be desirble to consider using a thicker liner to permit using standard hauling and rolling equipment during the construction operations.

All of the subsurface materials will be suitable for use in the 6-inch layer of subsurface materials over the individual layers of solid waste fill. The CL and CH clays and the maroon shale will be more desirable for the 2.0 ft. of impervious material above the top layer of solid waste material. The upper layer of cover material should be sloped for proper surface drainage. A soil berm should be constructed around the excavation areas in order to prevent outside surface water from draining into the excavation.

EROSION CONTROL

Assuming that the CH clays and high plasticity shale will be used as cover material on top of the landfill, nonscouring velocities of 4.5 ft. per second and 6.0 ft. per second can be used for clearwater and suspended load water, respectively. Depending on the vegetation, significant erosion is likely to occur with velocities greater than these values.

SLOPE STABILITIES

Depending on the height of the slopes, the soils, sandy shale and shaly sandstone will generally stand on slopes of one vertical to one horizontal for short periods of time. Based on considerations of stabilities, it appears desirable to use slopes of two horizontal to one vertical for areas where the slopes are to be exposed for an extended period of time. Based on considerations of maintenance of vegetation on the slopes, it is desirable that the slopes be at least a three horizontal to one vertical.

SOIL AND LINER QUALITY CONTROL PROGRAM

A proposed soil and liner quality program is discussed by a letter to the City of Laredo attached to this report.

CONCLUSIONS

Based on the results of the field exploration, laboratory investigations and engineering studies, it is concluded that the subsurface materials and conditions in the proposed area are suitable for the operation of a sanitary landfill.

Since some variation was found in subsurface conditions at boring locations, all parties involved should take notice that even more variation may be encountered between boring locations. Statements in the report as to subsurface variation over given areas, along with the subsurface profiles, are intended only as estimations from the data obtained at specific boring locations.

The professional services that form the basis for this report have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in the same locality. No other warranty, express or implied, is made as to the professional advice set forth.

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FRANK G. BRYANT & ASSOCIATES, INC.
1107 W. GIBSON • AUSTIN, TEXAS 78704 • 512/444-3233
GEOTECHNICAL CONSULTANTS

November 30, 1983

City of Laredo
Engineering Department
P. O. Box 2769
Laredo, Texas 78041

Attn: Mr. Amador Escudero, P. E.
City Engineer

PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
U. S. HIGHWAY 359
WEBB COUNTY, TEXAS

Gentlemen:

The Texas Department of Health requires that you supply a quality control plan to provide operating personnel adequate procedural guidance for assuring continuous compliance with established groundwater protection requirements. These requirements are specified in Section E-3.2e (4)(c) of "Municipal Solid Waste Management Regulations." The following program is recommended to meet the requirements of the Texas Department of Health.

1. After an excavation is opened and prior to receiving solid wastes, the soils engineer should inspect the sides and bottom for zones that contain granular soils or open fracture planes in the clays, shales, or sandstone.

2. Where granular soils or materials with open fracture planes are identified, the area should be lined with 3.0 ft. of soil with a permeability coefficient not greater than 1×10^{-7} cm./sec. when it is properly compacted.

3. Compaction of liner soils should be accomplished in maximum 8 inch loose lifts to a minimum of 95% of the maximum density as determined by ASTM designation D-698 laboratory compaction tests. The field density tests should be taken in each lift with tests being taken on a grid system with 100.0 ft. centers on the floor and 200.0 ft. centers on the side walls. The plasticity of the liner material should be checked by Atterberg limits tests on samples taken adjacent to density test locations at the rate of at least one set of Atterberg limits tests to every ten field

density tests. Laboratory permeability tests should be performed on undisturbed samples of the compacted liner material at the rate of one for each trench area.

4. The depth of the completed liner should be verified by at least three cross sections with level surveys being performed prior to and after construction of the liner.

5. The separation of solid waste from groundwater or perched water can be effectively accomplished by placing a 3.0 ft. thick liner of soil with a permeability coefficient not greater than 1 X 10^{-7}cm./sec. in the isolated areas where granular soils and/or open fracture planes are encountered.

6. A minimum of three representative samples should be obtained from each area which exposes soil strata that have not been previously tested for compliance. Each sample should be checked for Atterberg limits, percent passing the No. 200 mesh sieve, and if the plasticity index is below 25, laboratory permeability coefficient determinations.

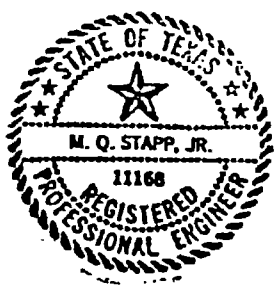
7. Following each inspection, the soils engineer shall submit a completed Texas Department of Health Municipal Solid Waste Landfill Site Soils and Liner Evaluation Questionnaire bearing a registered professional engineer's signature and seal. Reports of all field and laboratory test data obtained between the inspections will be forwarded, along with the questionnaire, for the documentation and permanent record purposes.

We appreciate the opportunity of working with you on this project and if we can be of further assistance, please let us know.

Very truly yours,

FRANK G. BRYANT & ASSOCIATES, INC.

M. Q. Stapp, Jr., P. E.
Executive Vice President



MQS/sg

TABLE I
SUMMARY OF LABORATORY TEST RESULTS
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

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Job No. 4875

Boring No. & GS Elev.	Sample Depth ft.	Sample Elev. ft.	(1) LL, %	(2) PI, %	(3) Percent of Soil Finer Than Sieve #4	#40	#200	(4) Water Content, %	(5) Unconfined Compressive Strength, tsf	(6 & 7) Description & Classification
B-2 504.26	0.5	503.8	41	23	79	73	46	7.6		Brown to tan sandy CLAY. CL
	5.0	499.3	58	30	100	99	97	15.6		Brown to tan CLAY. CH
	10.0	494.3	71	42	99	94	93	19.1		Brown to tan CLAY. CH
B-3 512.72	21.5	491.2							20.6	Light greenish gray and tan shaly SANDSTONE.
	30.5	482.2							31.2	Gray shaly SANDSTONE.
	44.5	468.2							88.1	Light gray SANDSTONE.
B-6 480.41	0.5	479.9	41	23	79	73	46	7.6		Brown clayey SAND. SC
	5.0	475.4	58	30	100	99	97	15.6		Maroon sandy SHALE.
	7.5	472.9	71	42	99	94	93	19.1		Maroon sandy SHALE.
	9.5	470.9							4.2	Light greenish gray and tan shaly SANDSTONE.
	28.5	451.9							15.0	Dark greenish gray shaly SANDSTONE.
	41.5	438.9							108.8	Greenish gray SANDSTONE.
B-8 469.94	5.0	464.9	49	30	88	80	57	11.3		Brown silty CLAY. CL
	11.0	458.9	41	17	100	99	62	13.0		Greenish gray tan and brown shaly SANDSTONE.
B-10 497.32	6.0	491.3	71	40				25.2		Greenish gray tan and brown shaly SANDSTONE.

TABLE I (CONTINUED)
SUMMARY OF LABORATORY TEST RESULTS
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

Job No. 4875

698

Boring No. & GS Elev.	Sample Depth ft.	Sample Elev. ft.	(1) LL, %	(2) PI, %	(3) Percent of Soil Finer Than Sieve #4	#40	#200	(4) Water Content, %	(5) Unconfined Compressive Strength, tsf	(6 & 7) Description & Classification
B-19 491.91	22.5	469.4			100	100	39			Light greenish gray and tan shaly SANDSTONE.
	31.5	460.4			99	98	43			Dark greenish gray shaly SANDSTONE.
	45.5	446.4			100	100	16			Greenish gray SANDSTONE.
B-20 492.94	8.5	484.4	66	35				20.8		Light greenish gray sandy SHALE.
	35.0	457.9			100	99	40			Light greenish gray and tan shaly SANDSTONE.
	39.5	453.4			100	99	46			Light greenish gray and tan shaly SANDSTONE.
	46.0	446.9			100	99	32			Dark greenish gray shaly SANDSTONE.
B-21 476.55	5.5	471.1			99	97	49			Tan & light greenish gray shaly SANDSTONE.

NOTES: (1) ASTM D 423-72 (3) ASTM D 422-72 (5) ASTM D 2938-79 (7) ASTM D 2487-75
(2) ASTM D 424-71 (4) ASTM D 2216-80 (6) ASTM D 2488-75

TABLE II
SUMMARY OF LABORATORY PERMEABILITY TESTS
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

Job No. 4875

699

Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-2	0.0-10.5*	123.3	13.3	109	1.99×10^{-8}	Brown to tan sandy CLAY. CL
B-3	4.0- 5.0	126.5	19.1	106	5.22×10^{-8}	Greenish gray sandy SHALE.
B-4	4.0- 4.5	125.1	22.4	102	2.27×10^{-8}	Maroon sandy SHALE.
B-6	4.5- 5.5	128.5	14.9	112	6.60×10^{-8}	Maroon sandy SHALE.
B-8	0.0- 1.5	109.3	13.7	96	1.54×10^{-7}	Brown silty CLAY. CL
	10.0-11.5	140.2	11.1	126	4.13×10^{-8}	Greenish gray, tan and brown shaly SANDSTONE.
B-13	4.0- 5.0	123.3	17.5	105	7.32×10^{-8}	Maroon sandy SHALE.
B-14	9.0-10.0	136.6	16.6	117	1.53×10^{-7}	Light greenish gray and tan sandy SHALE.
B-16	9.0-10.0	124.9	13.3	110	1.40×10^{-7}	Greenish gray and tan shaly SANDSTONE.
B-17	0.0- 1.0	124.1	13.5	109	1.01×10^{-7}	Brown sandy CLAY. CL

TABLE II (CONTINUED)
SUMMARY OF LABORATORY PERMEABILITY TESTS
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

Job No. 4875

Boring No.	Depth ft.	Wet Unit Wt., pcf	Water Content, %	Dry Unit Wt., pcf	Permeability Coefficient, cm/sec	Remarks
B-18	4.5- 5.5	128.9	16.9	110	1.43×10^{-7}	Light greenish gray and tan SANDSTONE.
B-22	3.0- 4.0	125.5	16.1	110	2.51×10^{-8}	Greenish gray and tan shaly SANDSTONE.

* Combined from three samples, depths 0.5, 5.0 and 10.0 ft., remolded and recompacted.

TABLE III
SUMMARY OF FIELD PERMEABILITY TESTS
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

Job No. 4875

Boring No.	Test Depth ft.	Water Head ft.	Permeability Coefficient, cm/sec
B-1	5.0 - 49.6	27.3	3.04×10^{-5}
			5.60×10^{-6}
B-4	5.0 - 49.6	27.3	3.16×10^{-5}
			2.20×10^{-5}
B-6	5.0 - 50.2	27.6	1.45×10^{-5}
			2.42×10^{-5}
B-8	10.0 - 50.7	21.4	5.02×10^{-5}
			1.93×10^{-5}
B-10	4.2 - 50.6	27.4	2.35×10^{-5}
			2.70×10^{-5}
B-12	4.9 - 50.1	27.5	5.22×10^{-6}
			6.51×10^{-5}
B-13	4.3 - 50.4	27.4	3.30×10^{-5}
			1.94×10^{-5}
B-15	4.9 - 49.8	27.4	1.36×10^{-5}
			1.08×10^{-5}
B-16	9.0 - 50.3	29.7	8.98×10^{-5}
			7.14×10^{-5}
B-19	4.7 - 50.2	27.4	1.84×10^{-5}
			1.37×10^{-5}
B-20	4.5 - 50.6	27.6	2.58×10^{-5}
			8.84×10^{-6}
B-21	4.3 - 50.0	27.2	3.94×10^{-5}
			4.61×10^{-5}

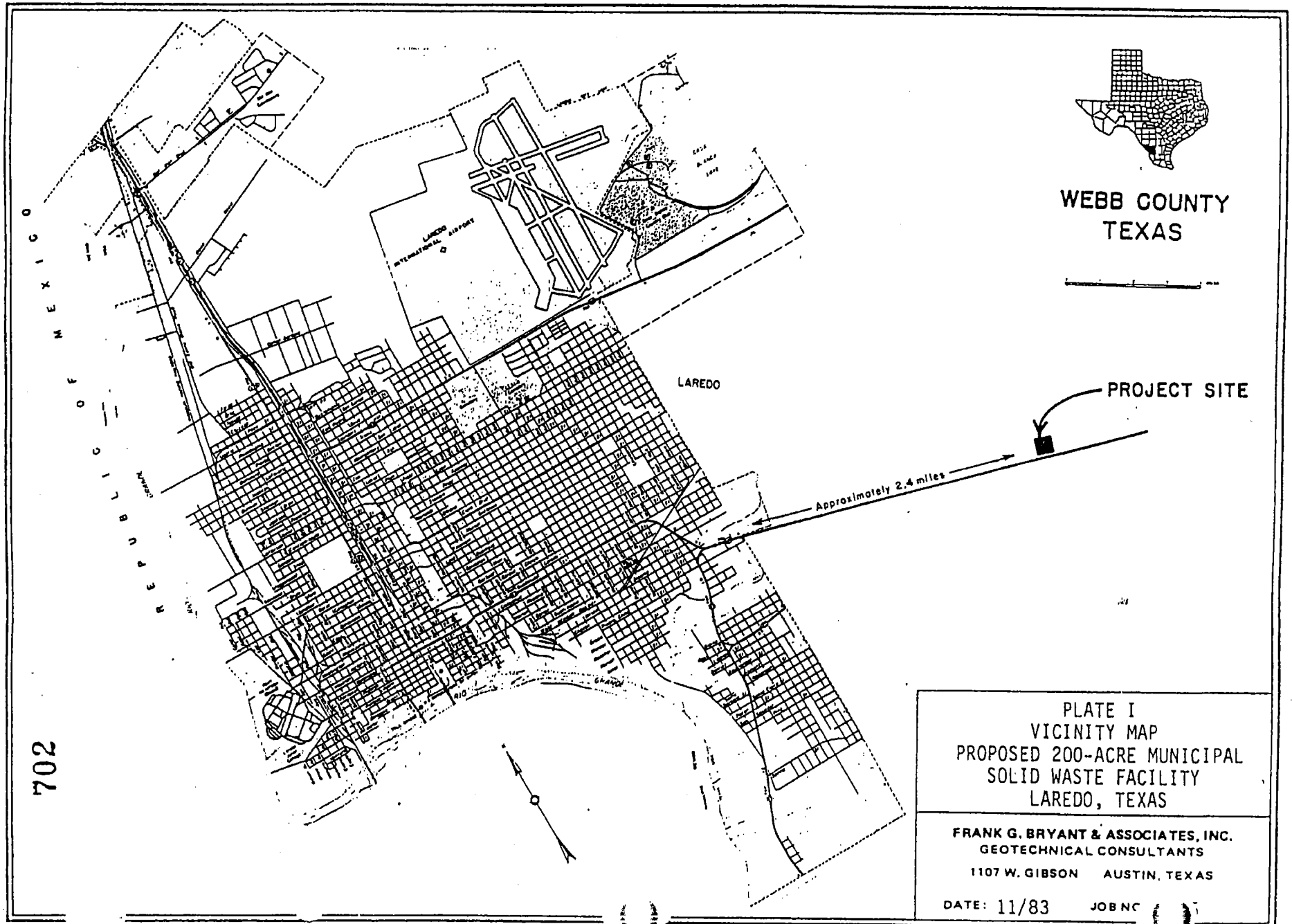


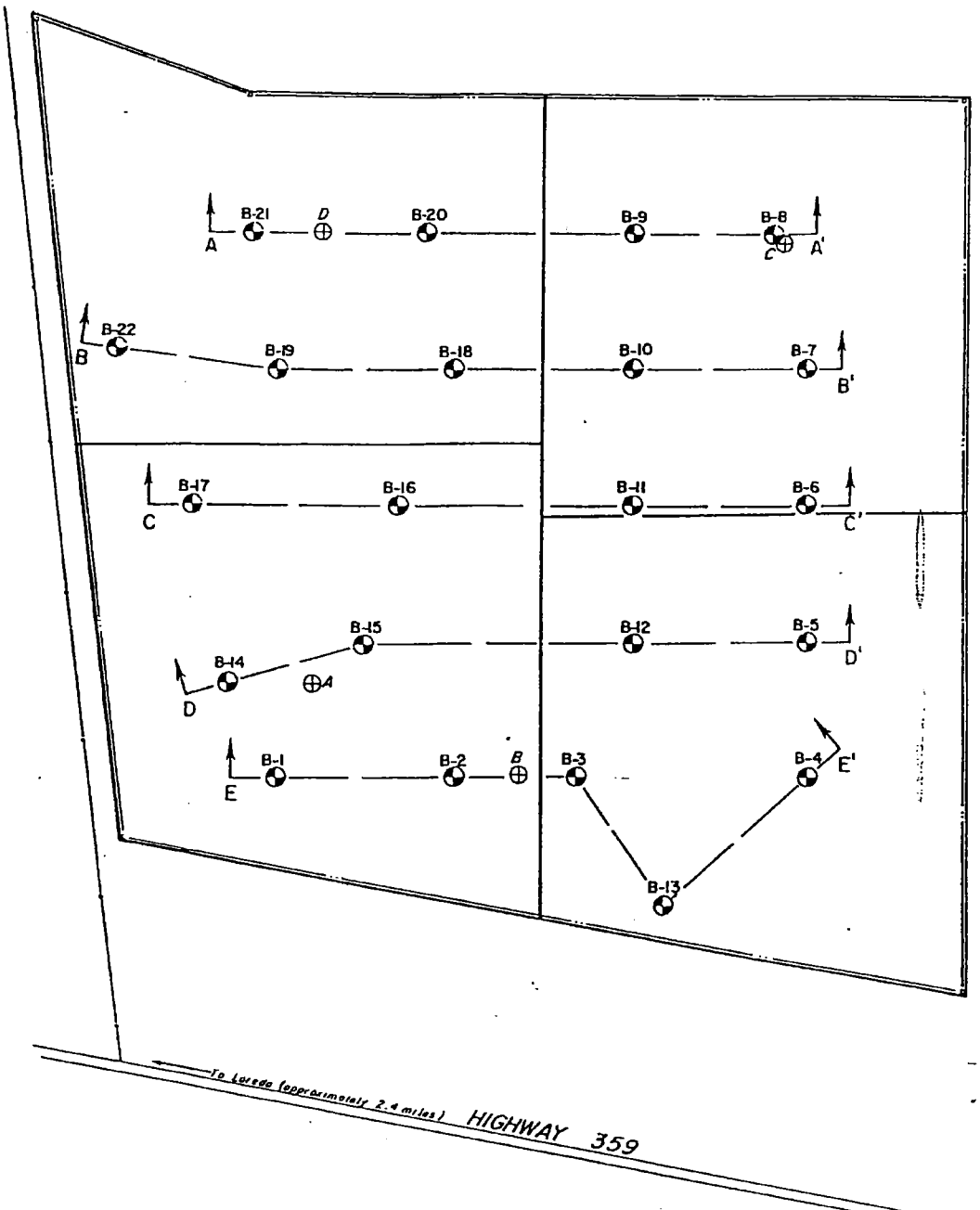
PLATE I
VICINITY MAP
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

FRANK G. BRYANT & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS
1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO.

702

703



LEGEND

Core Borings

Auger Borings

PLATE II

BORING AND PROFILE LOCATION PLAN

PROPOSED 200-ACRE MUNICIPAL SOLID WASTE FACILITY

LAREDO, TEXAS

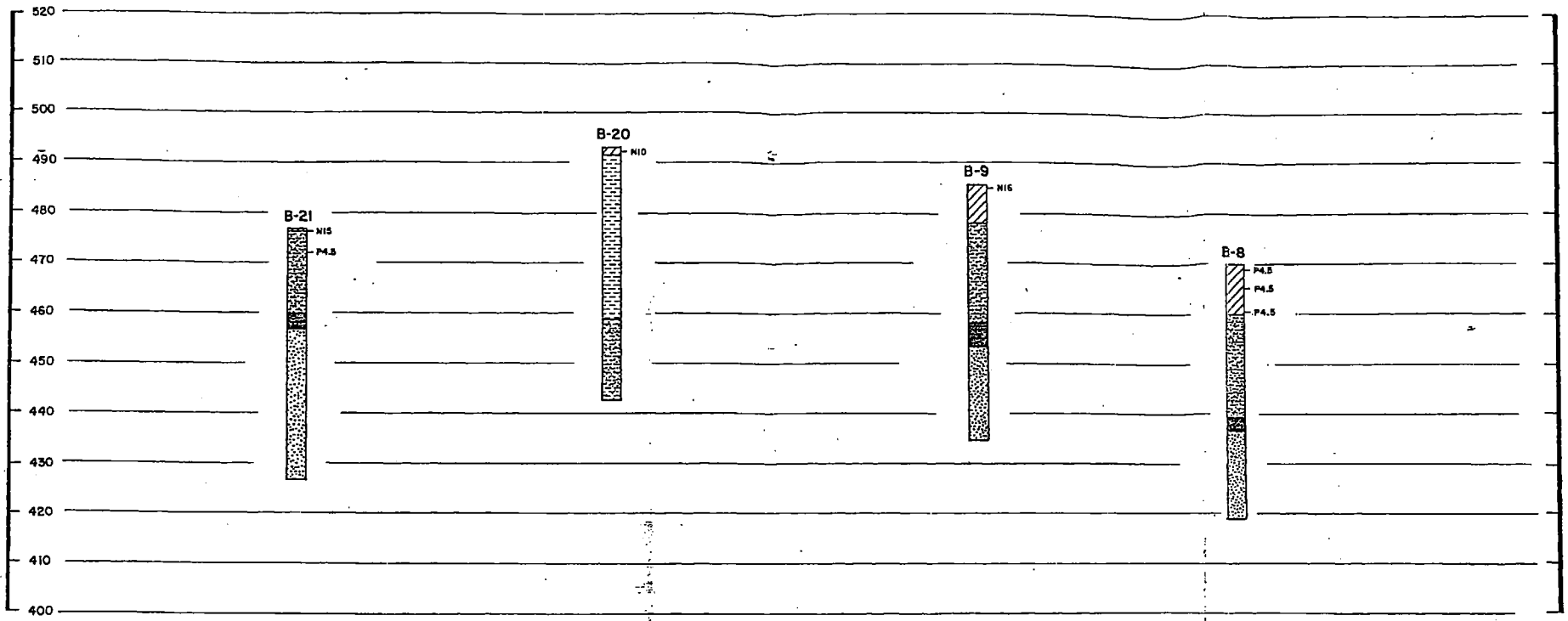
FRANK G. BRYANT & ASSOCIATES, INC.

GEOTECHNICAL CONSULTANTS

1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO: 4875

704



L E G E N D

- SAND. (SP)
- CLAYS of high plasticity. (CH)
- GRAVEL. (GP)
- SHALE
- Shaly fossiliferous SANDSTONE
- CLAYS of low to medium plasticity. (CL)
- Clayey SANDS. (SC)
- SILT. (ML)
- Shaly SANDSTONE
- SANDSTONE

N – Penetration Resistance Blows/ft. ASTM D1586-74

P – Pocket Penetrometer tsf ASTM D2486-75

qu: Unconfined Compressive Strength tsf ASTM D 2938-79

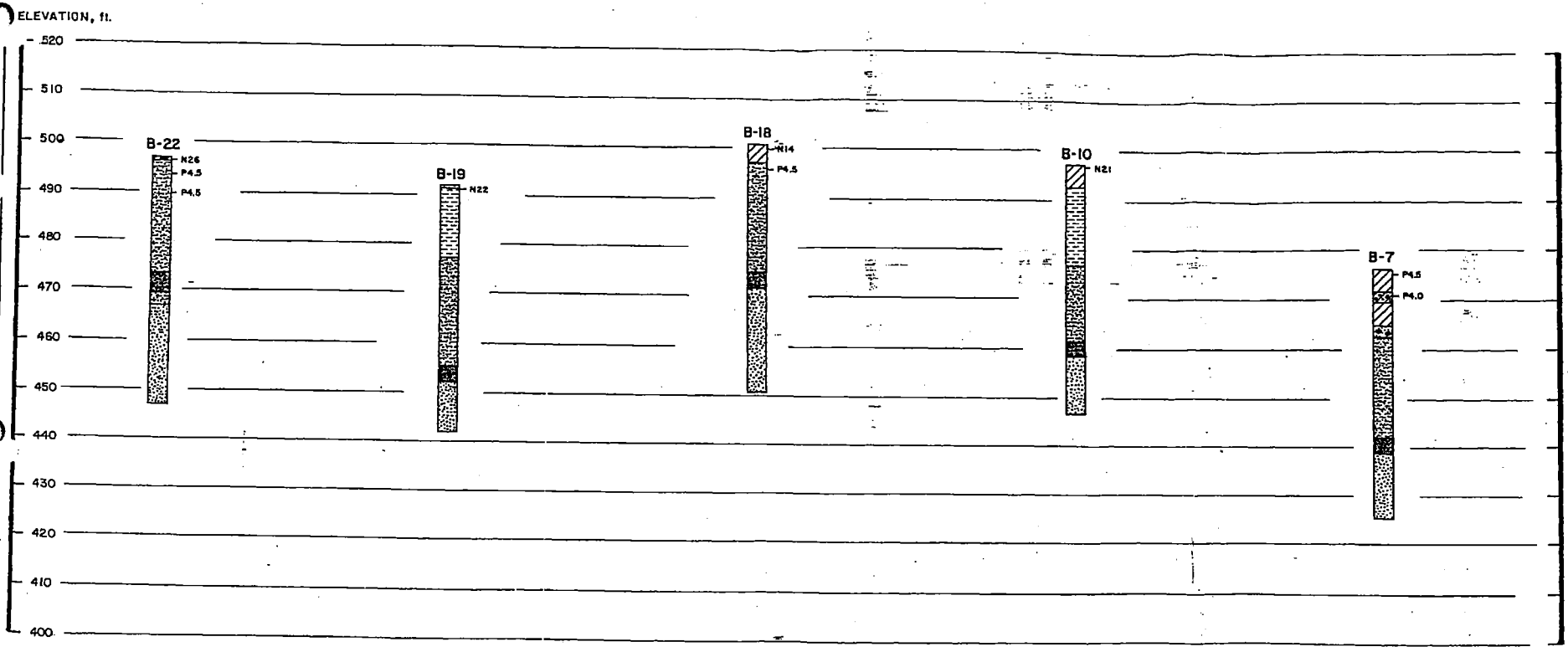
Horizontal SCALE : 1" = 200'

PLATE III
SUBSURFACE PROFILE A-A'
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

FRANK G. BRYANT & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS
1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO.: 4875

705

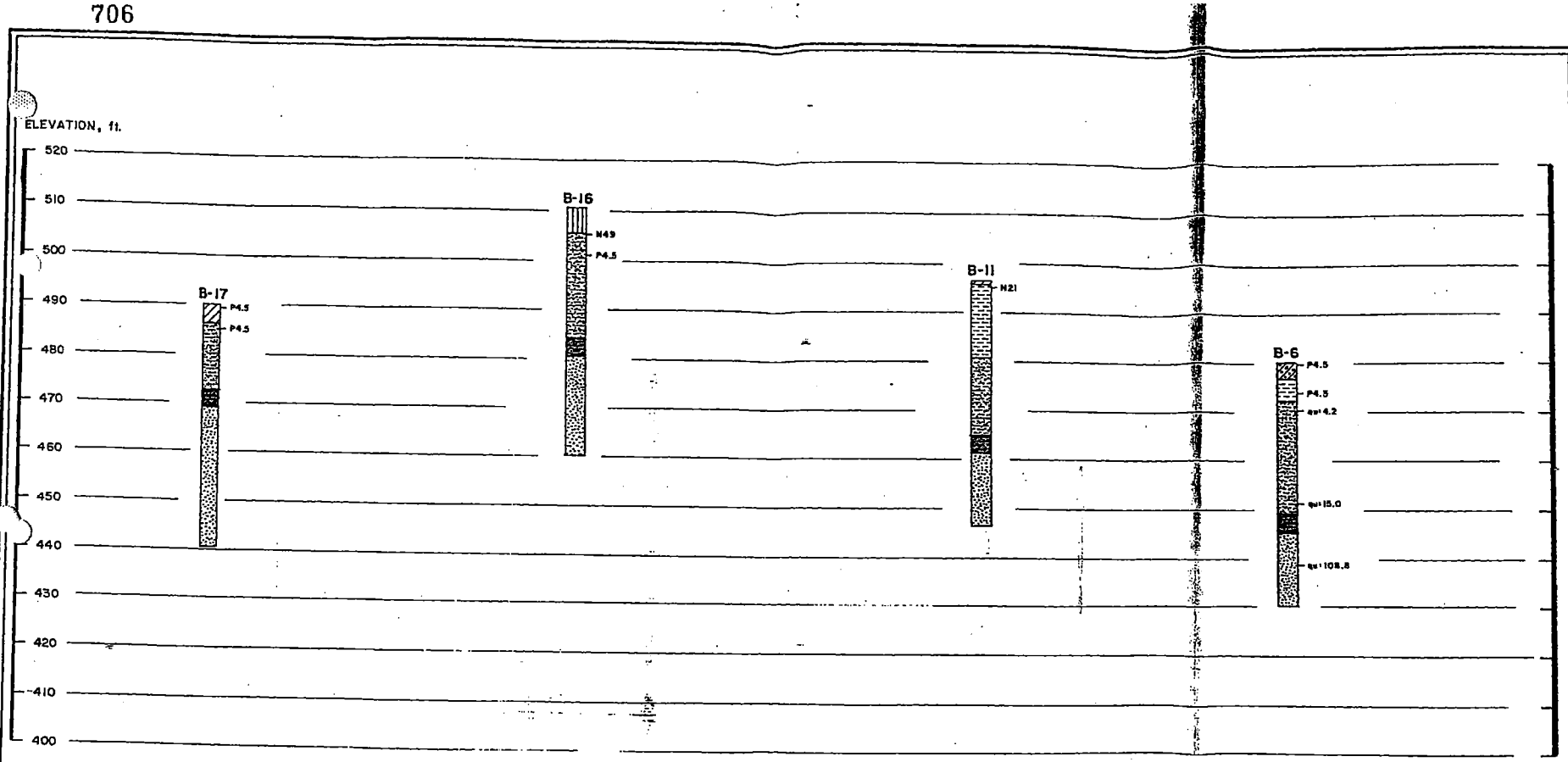


Note: For Legend see PLATE III

PLATE IV
SUBSURFACE PROFILE B-B'
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

FRANK G. BRYANT & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS
1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO.: 4875

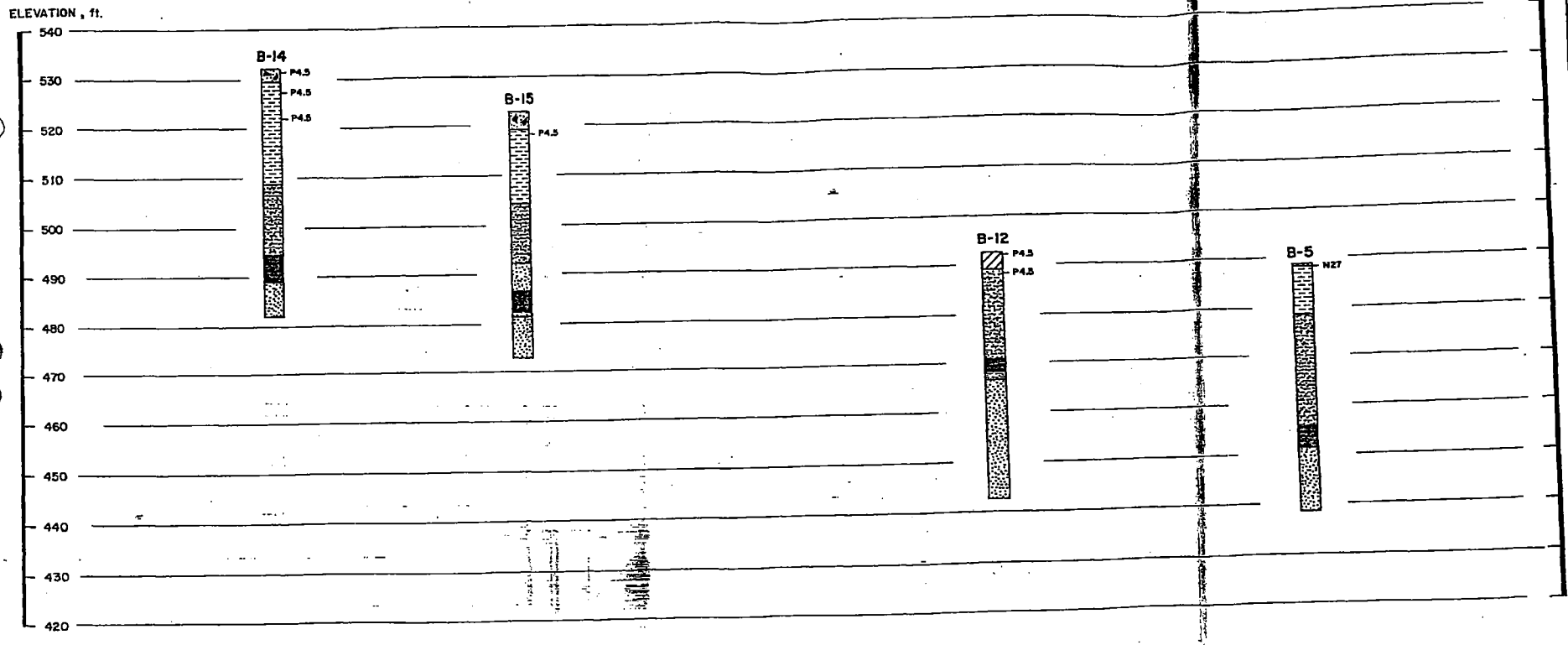


Note : For Legend see PLATE III.

PLATE V
SUBSURFACE PROFILE C-C'
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

FRANK G. BRYANT & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS
1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO.: 4875



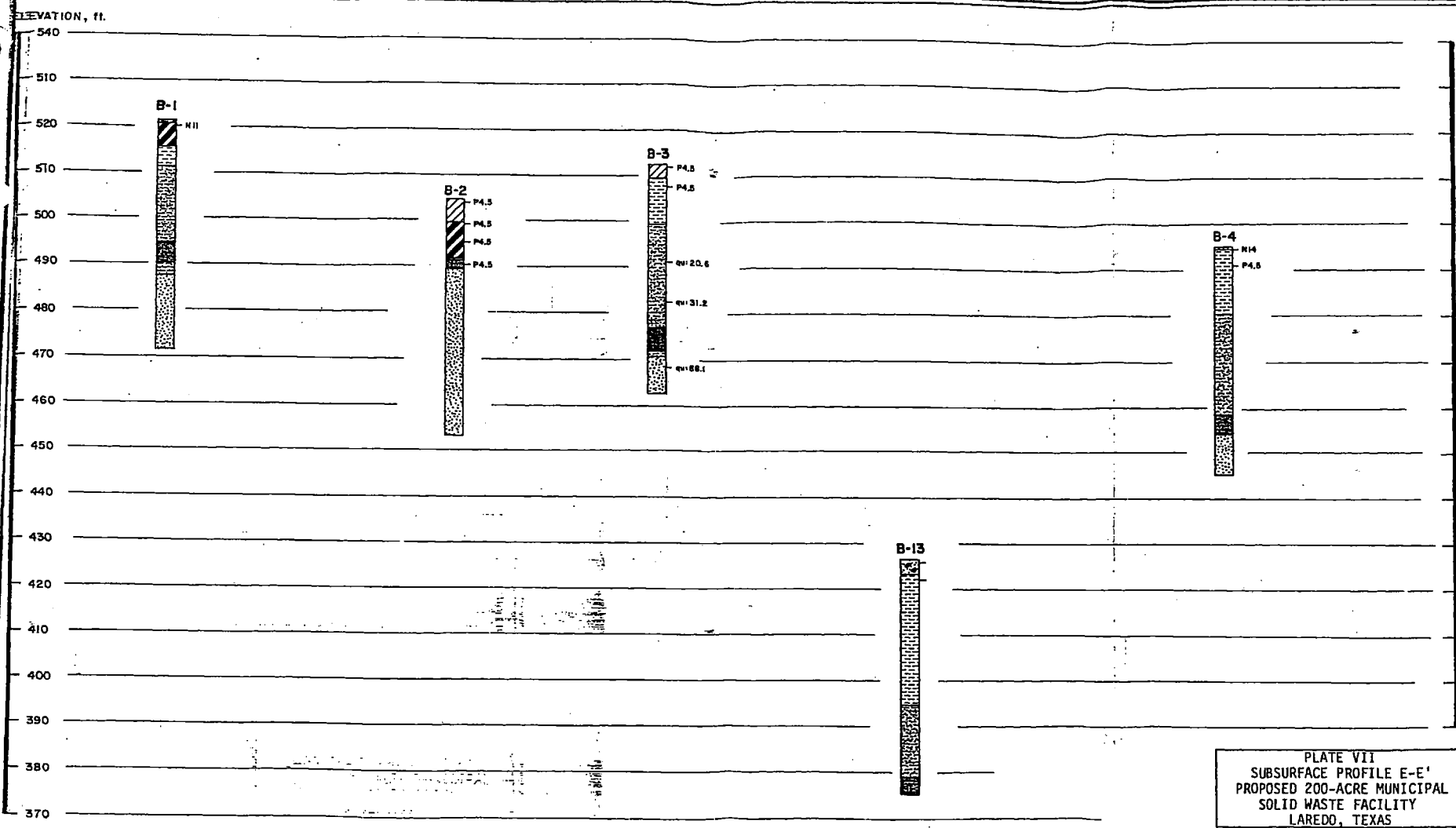
Note: For Legend see PLATE III.

PLATE VI
SUBSURFACE PROFILE D-D'
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

FRANK G. BRYANT & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS
1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO.: 4875

708



Note: For Legend see PLATE III.

PLATE VII
SUBSURFACE PROFILE E-E'
PROPOSED 200-ACRE MUNICIPAL
SOLID WASTE FACILITY
LAREDO, TEXAS

FRANK G. BRYANT & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS
1107 W. GIBSON AUSTIN, TEXAS

DATE: 11/83 JOB NO.: 4875

SUBSURFACE EXPLORATION LOG

709 PROJECT Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas

TYPE OF BORING Core

BORING NO. B-1
DATE 9/21/83
JOB NO. 4875
SURFACE ELEV. 521.30 ft.

LEGEND — ▼ groundwater table
sample type
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(521.0)	1		GRAVEL. GP	N11
			Maroon and greenish gray CLAY. CH	
5 (515.9)	2		Greenish gray, sandy SHALE w/shale lenses.	R81 RQD79
(511.7) 10	3		Light greenish gray and tan, shaly SANDSTONE w/iron stained joint planes.	R76 RQD73
15	4			R96 RQD93
20	5			R100 RQD100
25	6		— scattered fossils from 27.2 to 31.0 ft.	R100 RQD100
30	7		— maroon layers from 30.6 to 34.0 ft.	R76 RQD70
(487.3) 35	8		Tan to brown SANDSTONE.	R96 RQD83
	9			R100 RQD100

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

710 JOB NO. 4875 DATE 9/21/83 BORING NO. B-1

40	8		Tan to brown SANDSTONE. (continued)	cont.
	9			R100 RQD100
45	10			R100 RQD100
(471.8)				
50			Total depth of boring = 49.5 ft.	
			NOTES: (1) Boring was advanced dry to the 5.4-ft. depth.	
55			(2) The hole was noted open to 31.0-ft. and the water surface (probably drilling fluid) was noted at the 26.0-ft. depth on 9/22/83 and at the 29.0-ft. depth on 9/24/83.	
60				
65				
70				
75				
80				
85				

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

711 PROJECT Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas

TYPE OF BORING Core

BORING NO. B-2
DATE 9/21/83
JOB NO. 4875
SURFACE ELEV. 504.26 ft.

LEGEND — ▼ groundwater table
sample type
◪ thin-walled tube ◧ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH (ELEV.) FT.	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen, tsf RQD—rock qual. desig.
	1		Brown to tan, sandy CLAY. (calcareous) CL	P4.5
(499.8)				
5	2		Brown to tan CLAY. (calcareous) CH	P4.5
			gravel from 7.0 to 8.5 ft.	
10	3		gravel from 11.0 to 12.5 ft.	P4.5
(491.8)				
			Tan, shaly SANDSTONE, fossiliferous.	P4.5
15	4			
(488.8)	5		Tan to brown SANDSTONE.	R83 RQD83
20	6			R96 RQD96
25	7			R98 RQD98
30	8			R100 RQD100
35	9			R100 RQD100

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Austin, Texas

SUBSURFACE EXPLORATION LOG

712 JOB NO. 4875 DATE 9/21/83 BORING NO. B-2

40	9		Tan to brown SANDSTONE. (continued)	cont.
	10			R100 RQD62
45	11		scattered lenses containing lignite particles from 47.0 to 49.5 ft.	R96 RQD96
50 (453.8)				
			Total depth of boring = 50.5 ft.	
55			NOTES: (1) Boring was advanced dry to the 15.0-ft. depth.	
			(2) The hole was noted open to the 6.0-ft. depth and dry on 9/22/83.	
60				
65				
70				
75				
80				
85				

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

713

PROJECT: Proposed 200-Acre Municipal Solid Waste Facility, Laredo, Texas

TYPE OF BORING: Core

BORING NO. B-3
DATE 9/22/83
JOB NO. 4875
SURFACE ELEV. 512.72 ft.

LEGEND — ▼ groundwater table
sample type
◪ thin-walled tube ◪ penetration test ⊠ no recovery
■ double tube core barrel ◪ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows/ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
	1		Maroon, sandy CLAY w/scattered small gravel. CL	P4.5
(509.7)				
5	2		Greenish gray, sandy SHALE, jointed.	P4.5
	3			R96 RQD78
(504.7)			Maroon, sandy SHALE, jointed w/greenish gray, sandy shale layers.	
10				
	4			R95 RQD95
(499.3)				
15			Light greenish gray and tan, shaly SANDSTONE w/iron stained joint planes.	
	5			R100 RQD86
20				
	6			R100 RQD100
25				
	7			R100 RQD100
30				
(482.6)	8		Gray, shaly SANDSTONE.	R100 RQD100
35				
	9		fossiliferous from 35.9 to 40.2 ft.	R100 RQD100

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714

SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/22/83 BORING NO. B-3

40 (471.0)	9	Gray, shaly SANDSTONE. (continued)	cont.
	10	Light gray SANDSTONE.	R100 RQD100
45	11		R100 RQD100
50 (462.7)		Total depth of boring = 50.0 ft.	

NOTES: (1) Boring was advanced dry to the 5.0-ft. depth.

(2) The hole was noted open to the 3.5-ft. depth and dry on 9/23/83.

55 60 65 70 75 80 85

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

PROJECT 715 — Proposed 200-Acre Municipal Solid Waste Facility, Laredo, Texas

TYPE OF BORING: Core

BORING NO. B-4
DATE 9/22/83
JOB NO. 4875
SURFACE ELEV. 494.86 ft.

LEGEND — sample type: ▣ thin-walled tube; ■ double tube core barrel; ▨ penetration test; ▨ disturbed; ⊠ no recovery; ☐ ; ▼ groundwater table

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows/ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(494.6)	1		Tan, sandy SILT. ML	N14
			Maroon, sandy SHALE.	
	2			P4.5
5 (489.9)	3		Greenish gray, sandy SHALE, jointed w/purple shale layers.	R89 RQD89
10	4			R86 RQD85
(480.3)				
15	5		Greenish gray and tan, shaly SANDSTONE w/scattered fossils.	R100 RQD100
20	6			R100 RQD100
25	7			R100 RQD100
30				
(463.1)	8		Dark gray, shaly SANDSTONE w/scattered fossils.	R100 RQD100
35	9		fossiliferous from 36.0 to 39.6 ft.	R100 RQD100
	10			R100 RQD17

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Austin, Texas

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/22/83 BORING NO. B-4

40	9		Dark gray, shaly SANDSTONE w/scattered fossils. (cont.)	R100 RQD100
(454.5)	10		Gray SANDSTONE.	R100 RQD17
45	11			R100 RQD100
(445.4)				
50			Total depth of boring = 49.5 ft.	
			NOTES: (1) Boring was advanced dry to the 4.9-ft. depth.	
55			(2) The hole was open to 4.2 ft. and the water surface (probably drilling fluid) was noted at the 4.0-ft. depth on 9/23/83.	
60				
65				
70				
75				
80				
85				

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

PROJECT 717 — Proposed 200-Acre Municipal Solid Waste Facility, Laredo, Texas

TYPE OF BORING: Core

BORING NO. B-5
DATE 9/19/83
JOB NO. 4875
SURFACE ELEV. 488.73 ft.

LEGEND — sample type: ▨ thin-walled tube; ■ double tube core barrel; ▽ groundwater table; ▨ penetration test; ▨ disturbed; ⊠ no recovery; □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(488.2)	1		Tan SILT w/gravel. ML	N27
(486.7)			Maroon, sandy SHALE.	
			Greenish gray, sandy SHALE w/maroon shale layers.	
5	2			R87 RQD85
10				
(478.2)	3		Greenish gray and tan, shaly SANDSTONE.	R94 RQD92
15	4			R96 RQD93
20	5			R94 RQD92
25	6			R96 RQD93
30				
(458.7)	7		Dark gray, shaly SANDSTONE w/scattered fossils. — fossiliferous from 33.5 to 37.5 ft.	R100 RQD100
35				
(451.2)	8		Gray SANDSTONE.	R100 RQD100

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Austin, Texas

718

SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/19/83 BORING NO. B-5

40	8		Gray SANDSTONE. (continued)	cont.
	9			R100 RQD100
45	10			R100 RQD100
50				
(438.7)			Total depth of boring = 50.0 ft.	
			NOTES: (1) Boring was advanced dry to the 4.5-ft. depth.	
55			(2) The hole was open to 41.5 ft. and the water surface (probably drilling fluid) was noted at the 41.0-ft. depth on 9/20/83.	
60				
65				
70				
75				
80				
85				

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Austin, Texas

SUBSURFACE EXPLORATION LOG

PROJECT Proposed 200-Acre Municipal Solid Waste Facility
719 Laredo, Texas
TYPE OF BORING Core

BORING NO. B-6
DATE 9/13/83
JOB NO. 4875
SURFACE ELEV. 480.41 ft.

LEGEND — sample type
- thin-walled tube
- double tube core barrel
- groundwater table
- penetration test
- disturbed
- no recovery

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
	1		Brown, clayey SAND w/gravel. SC	P4.5
(476.9)				
5	2		Maroon, sandy SHALE, jointed.	P4.5
	3			R100 RQD100
(472.6)			Light greenish gray and tan, shaly SANDSTONE.	
10				
	4			R100 RQD100
15				
	5			R88 RQD87
20				
	6			R100 RQD100
25				
	7			R100 RQD100
(452.4)			Dark greenish gray, shaly SANDSTONE.	
30			fossiliferous from 31.0 to 34.6 ft.	
	8			R100 RQD100
(445.8)				
35			Greenish gray SANDSTONE.	
	9			R100 RQD100
	10			R100 RQD100

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Austin, Texas

SUBSURFACE EXPLORATION LOG

720

JOB NO. 4875 DATE 9/13/83 BORING NO. B-6

40	9		Greenish gray SANDSTONE. (continued)	cont.
	10			R100 RQD100
45	11			R94 RQD94
50 (430.4)			Total depth of boring = 50.0 ft.	
55			NOTES: (1) Boring was advanced dry to the 5.6-ft. depth.	
			(2) The hole was open to 7.5 ft. and the water surface (probably drilling fluid) was noted at the 5.5-ft. depth on 9/14/83.	
60				
65				
70				
75				
80				
85				

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

PROJECT 721 Proposed 200-Acre Municipal Solid Waste Facility Laredo, Texas

TYPE OF BORING Core

BORING NO. B-7
DATE 9/11/83
JOB NO. 4875
SURFACE ELEV. 476.02 ft.

LEGEND — ▼ groundwater table
sample type
☑ thin-walled tube ▨ penetration test ☒ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
	1		Brown, sandy CLAY. CL	P4.5
			— scattered gravel from 2.0 to 4.5 ft.	
(471.5)				
5	2		Tan, clayey SAND w/gravel. SC	P4.0
(469.5)			Brown, sandy CLAY. CL	
10				
(464.7)	3		Brown, sandy GRAVEL. GP	R49 RQD19
(462.6)			Greenish gray, tan and brown, shaly SANDSTONE.	
15	4			R96 RQD90
20	5			R100 RQD100
25	6			R100 RQD100
(447.7)			Dark greenish gray, shaly SANDSTONE.	
30	7			R100 RQD100
			— fossiliferous from 34.0 to 37.3 ft.	
35				
(438.7)	8		Greenish gray SANDSTONE.	R100 RQD100

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/11/83 BORING NO. B-7

40	8		Greenish gray SANDSTONE. (continued)	cont.
	9			R96 RQD93
45	10			R100 RQD100
50 (425.5)				
			Total depth of boring = 50.5 ft.	
55			NOTES: (1) Boring was advanced dry to the 9.2=ft. depth.	
			(2) The hole was open to 13.2 ft. and the water surface (probably drilling fluid) was noted at the 13.0-ft. depth on 9/12/83.	
60			(3) A hole, close to B-7, was advanced dry to the 15.0-ft. depth, and no groundwater was encountered.	
65				
70				
75				
80				
85				

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SUBSURFACE EXPLORATION LOG

PROJECT 723 Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas
TYPE OF BORING Core

BORING NO. B-8
DATE 9/14/83
JOB NO. 4875
SURFACE ELEV. 469.94 ft.

LEGEND — sample type
- thin-walled tube
- double tube core barrel
- groundwater table
- penetration test
- disturbed
- no recovery

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen, tsf RQD—rock qual. desig.
	1		Brown, silty CLAY w/gravel. CL	P4.5
5	2		quantity of gravel increases below 5.3 ft.	P4.5
	3			
10 (459.9)	4			P4.5
	5		Greenish gray, tan and brown, shaly SANDSTONE.	R96 RQD85
15				
	6			R96 RQD85
20				
(447.7)	7			R98 RQD98
25			Dark greenish gray, shaly SANDSTONE.	
	8			R100 RQD100
30			fossiliferous from 30.7 to 33.5 ft.	
	9			R100 RQD100
(436.4) 35			Greenish gray SANDSTONE.	
	10			R86 RQD86

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SUBSURFACE EXPLORATION LOG

724 JOB NO. 4875 DATE 9/14/83 BORING NO. B-8

40	10	Greenish gray SANDSTONE. (continued)	cont.
	11		R92 RQD90
45			
	12		R96 RQD90
50 (418.9)			
		Total depth of boring = 51.0 ft.	
55		NOTES: (1) Boring was advanced dry to the 11.5-ft. depth.	
		(2) The hole was open to 26.0 ft. and the water surface (probably drilling fluid) was noted at the 22.5-ft. depth on 9/26/83.	
60		(3) A hole, close to B-8, was advanced dry to the 40.0-ft. depth and no groundwater was encountered.	
65			
70			
75			
80			
85			

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SUBSURFACE EXPLORATION LOG

725 JOB NO. 4875 DATE 9/10/83 BORING NO. B-9

40	8		Greenish gray SANDSTONE. (continued)	cont.
	9			R100 RQD100
45				
	10			R90 RQD83
50 (435.0)				
			Total depth of boring = 50.5 ft.	
55			NOTES: (1) Boring was advanced dry to the 9.5-ft. depth.	
			(2) The hole was noted open to the 48.8-ft. depth and dry on 9/12/83.	
60				
65				
70				
75				
80				
85				

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SUBSURFACE EXPLORATION LOG

PROJECT 726
Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas
TYPE OF BORING Core

BORING NO. B-10
DATE 9/11/83
JOB NO. 4875
SURFACE ELEV. 497.32 ft.

LEGEND — sample type
▼ groundwater table
☑ thin-walled tube ☑ penetration test ☒ no recovery
■ double tube core barrel ☑ disturbed ☐

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(495.8)	1		Brown, sandy CLAY w/gravel. CL	N21
	2		Tan, sandy CLAY. CL	
(492.7) 5	3		Greenish gray, tan and brown, sandy SHALE, jointed.	R90 RQD89
10	4			R100 RQD100
15	5			R70 RQD50
20 (476.6)	6		Greenish gray and tan, shaly SANDSTONE.	R100 RQD50
25	7			R100 RQD100
30 (467.3)	8		Dark greenish gray, shaly SANDSTONE.	R100 RQD100
35	9		fossiliferous from 35.8 to 39.1 ft.	R100 RQD100
(458.2)			Greenish gray SANDSTONE.	

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/11/83 BORING NO. B-10

40	9		Dark greenish gray, shaly SANDSTONE. (continued)	cont.
	10		Greenish gray SANDSTONE.	R50 RQD30
45				
	11			R80 RQD28
50				
(446.8)			Total depth of boring = 50.5 ft.	
55			NOTES: (1) Boring was advanced dry to the 4.6-ft. depth.	
			(2) The hole was noted open to the 6.0-ft. depth and dry on 9/13/83.	
60				
65				
70				
75				
80				
85				

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SUBSURFACE EXPLORATION LOG

PROJECT 728 Proposed 200-Acre Municipal Solid Waste Facility Laredo, Texas
TYPE OF BORING Core

BORING NO. B-11
DATE 9/13/83
JOB NO. 4875
SURFACE ELEV. 496.49 ft.

LEGEND — ▼ groundwater table
sample type
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(495.5)	1		Brown, silty CLAY w/gravel, CL	N21
(491.8)			Greenish gray, sandy SHALE, jointed.	
5	2		Maroon, sandy SHALE, jointed.	R88 RQD88
(488.1)				
10			Greenish gray, sandy SHALE, jointed.	
	3			R96 RQD93
15				
(481.0)	4		Greenish gray and tan, shaly SANDSTONE.	R100 RQD100
20				
	5			R100 RQD100
25				
(469.1)	6		Dark gray, shaly SANDSTONE.	R96 RQD93
30				
	7		fossiliferous from 31.9 to 34.9 ft.	R100 RQD100
(461.6)				
35			Greenish gray SANDSTONE.	
	8			R98 RQD96

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/13/83 BORING NO. B-11

40	8		Greenish gray SANDSTONE. (continued)	cont.
	9			R100 RQD100
45	10			R100 RQD100
50 (446.5)			Total depth of boring = 50.0 ft.	
55			NOTES: (1) Boring was advanced dry to the 4.7-ft. depth.	
60			(2) The hole was noted open to the 44.7-ft. depth and dry on 9/14/83.	
65				
70				
75				
80				
85				

SUBSURFACE EXPLORATION LOG

PROJECT 730 — Proposed 200-Acre Municipal Solid Waste Facility, Laredo, Texas

TYPE OF BORING: Core

BORING NO.: B-12
DATE: 9/20/83
JOB NO.: 4875
SURFACE ELEV.: 492.54 ft.

LEGEND — sample type
- thin-walled tube
- double tube core barrel
- penetration test
- disturbed
- no recovery
- groundwater table

DEPTH (ELEV.) FT.	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen, tsf RQD—rock qual. desig.
	1		Brown and tan, sandy CLAY w/gravel. CL	P4.5
(489.0)				
5	2		Greenish gray, tan and brown, shaly SANDSTONE.	P4.5
	3			R11 RQD0
10	4			R62 RQD20
15	5			R100 RQD100
20	6		— fossiliferous from 22.1 to 24.0 ft.	R98 RQD98
(468.5)				
25			Gray fossiliferous SANDSTONE.	
(466.6)	7		Greenish gray SANDSTONE.	R100 RQD100
30	8			R96 RQD93
35	9			R100 RQD100

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SUBSURFACE EXPLORATION LOG

731 JOB NO. 4875 DATE 9/20/83 BORING NO. B-12

40	9		Greenish gray SANDSTONE. (continued)	cont.
	10			R100 RQD100
45	11			R100 RQD100
50			Total depth of boring = 50.0 ft.	
			NOTES: (1) Boring was advanced dry to the 5.5-ft. depth.	
55			(2) The hole was noted open to the 40.5-ft. depth and dry on 9/21/83.	
60				
65				
70				
75				
80				
85				

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SUBSURFACE EXPLORATION LOG

PROJECT Proposed 200-Acre Municipal Solid Waste Facility
732 Laredo, Texas
TYPE OF BORING Core

BORING NO. B-13
DATE 9/23/83
JOB NO. 4875
SURFACE ELEV. 426.34 ft.

LEGEND — sample type
- thin-walled tube
- double tube core barrel
- penetration test
- disturbed
- no recovery
- groundwater table

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
	1		Reddish tan, sandy GRAVEL. GP	P4.5
(423.3)				
	2		Maroon, sandy SHALE, jointed.	P4.5
5				
	3			R98 RQD96
10				
	4			R86 RQD85
15				
(411.3)			Light greenish gray, sandy SHALE, jointed.	
	5			R88 RQD87
20				
	6			R100 RQD100
(402.8)			Maroon, sandy SHALE, jointed.	
25				
(400.8)				
	7		Light greenish gray, sandy SHALE, jointed.	R96 RQD93
30				
(394.9)				
	8		Light greenish gray, tan and brown, shaly SANDSTONE.	R100 RQD100
35				
	9			R100 RQD100

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SUBSURFACE EXPLORATION LOG

733
JOB NO. 4875 DATE 9/23/83 BORING NO. B-13

40	9	Light greenish gray, tan and brown, shaly SANDSTONE. (continued)	cont.
	10		R100 RQD100
45			
(381.0)	11	Dark greenish gray, shaly SANDSTONE. fossiliferous from 47.4 to 50.4 ft.	R100 RQD100
50			
(375.8)		Total depth of boring = 50.5 ft.	
		NOTES: (1) Boring was advanced dry to the 5.8-ft. depth.	
55		(2) The hole was noted open to the 5.5-ft. depth and dry on 9/24/83.	
60			
65			
70			
75			
80			
85			

SUBSURFACE EXPLORATION LOG

PROJECT 734 — Proposed 200-Acre Municipal Solid Waste Facility, Laredo, Texas
TYPE OF BORING: Core
BORING NO.: B-14
DATE: 9/24/83
JOB NO.: 4875
SURFACE ELEV.: 532.01 ft.

LEGEND — sample type: ▨ thin-walled tube; ■ double tube core barrel; ▨ penetration test; ▨ disturbed; ⊠ no recovery; ▼ groundwater table

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
	1		Tan, sandy GRAVEL. GP	P4.5
(529.5)			Light greenish gray and tan, sandy SHALE, jointed.	
5	2			P4.5
	3			P4.5
10				
(520.5)			Maroon, sandy SHALE, jointed	
	4			
15				
(516.4)	5		Light greenish gray and tan, sandy SHALE, jointed.	R100 RQD100
20				
	6			R64 RQD50
(509.0)			Light greenish gray, tan and brown, shaly SANDSTONE.	
25				
	7			R100 RQD100
30				
	8			R90 RQD88
(498.5)			Dark greenish gray, shaly SANDSTONE w/tan layers.	
35			selenite lense from 34.0 to 34.1 ft.	
	9			R100 RQD100
(494.5)			Dark greenish gray, shaly fossiliferous SANDSTONE.	

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/24/83 BORING NO. B-14

40	9		Dark greenish gray, shaly fossiliferous SANDSTONE. (continued)	cont.
(490.8)			Tan, shaly fossiliferous SANDSTONE.	
(489.6)	10		Tan SANDSTONE.	R100 RQD100
45				
	11			R70 RQD68
50				
(482.0)			Total depth of boring = 50.0 ft.	
			NOTE: Boring was advanced dry to the 15.6-ft. depth, and no groundwater was encountered above that depth.	
55				
60				
65				
70				
75				
80				
85				

SUBSURFACE EXPLORATION LOG

PROJECT 736 Proposed 200-Acre Municipal Solid Waste Facility Laredo, Texas

TYPE OF BORING Core

BORING NO. B-15

DATE 9/23/83

JOB NO. 4875

SURFACE ELEV. 523.34 ft.

LEGEND — sample type: thin-walled tube; double tube core barrel; penetration test; disturbed; groundwater table; no recovery

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
	1		Brown, sandy GRAVEL. GP	
(519.3)				
5	2		Greenish gray, sandy SHALE, jointed	P4.5
	3			R72 RQD71
10	4			R100 RQD99
(511.3)			Maroon, sandy SHALE, jointed w/light greenish gray, sandy shale lenses.	R100 RQD100
(509.3)	5			
15	6		Greenish gray, sandy SHALE, jointed.	R100 RQD100
(504.5)			Tan and light greenish gray, shaly SANDSTONE.	
20	7			R100 RQD100
25	8			R100 RQD100
30				
(492.1)	9		Dark gray SANDSTONE w/scattered fossils and tan sandstone lenses.	R96 RQD96
35				R100 RQD100
(486.5)	10		Gray, shaly SANDSTONE.	
	11		fossiliferous from 36.8 to 40.8 ft.	R96 RQD93

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SUBSURFACE EXPLORATION LOG

737
JOB NO. 4875 DATE 9/23/83 BORING NO. B-15

40	10	Gray, shaly SANDSTONE. (continued)	cont.
(481.5)	11	Greenish gray and tan SANDSTONE.	R96 RQD93
45	12		R100 RQD100
50			
(473.3)		Total depth of boring = 50.0 ft.	
		NOTE: Boring was advanced dry to the 5.1-ft. depth, and no groundwater was encountered above that depth.	
55			
60			
65			
70			
75			
80			
85			

SUBSURFACE EXPLORATION LOG

PROJECT 738 Proposed 200-Acre Municipal Solid Waste Facility Laredo, Texas
TYPE OF BORING Core

BORING NO. B-16
DATE 9/24/83
JOB NO. 4875
SURFACE ELEV. 510.72 ft.

LEGEND — ▼ groundwater table
sample type
☑ thin-walled tube ☑ penetration test ☒ no recovery
■ double tube core barrel ☑ disturbed ☐

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen, tsf RQD—rock qual. desig.
	1		Tan, sandy SILT w/gravel. ML	
5	2			N49
(505.4)			Greenish gray and tan, shaly SANDSTONE.	
	3			P4.5
10	4			R20 RQD0
15	5			R86 RQD85
20	6			R100 RQD100
25	7		— fossiliferous from 26.6 to 30.3 ft. — gray from 28.0 to 30.3 ft.	R100 RQD100
30				
(480.4)	8		Greenish gray SANDSTONE.	R100 RQD100
35	9			R100 RQD100

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/24/83 BORING NO. B-16

40	9	Greenish gray SANDSTONE. (continued)	cont.
	10		R100 RQD100
45			
	11		R100 RQD100
50			
(460.2)		Total depth of boring = 50.5 ft.	
		NOTES: (1) Boring was advanced dry to the 9.8-ft. depth.	
55		(2) The hole was noted open to the 44.0-ft. depth and dry on 9/25/83.	
60			
65			
70			
75			
80			
85			

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SUBSURFACE EXPLORATION LOG

PROJECT 740 Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas
TYPE OF BORING Core

BORING NO. B-17
DATE 9/24/83
JOB NO. 4875
SURFACE ELEV. 489.97 ft.

LEGEND — ▼ groundwater table
sample type
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen, tsf RQD—rock qual. desig.
	1		Brown, sandy CLAY. CL	P4.5
(486.0)				P4.5
5	2		Greenish gray, tan and brown, shaly SANDSTONE.	R57 RQD55
	3			
10	4			R96 RQD93
15	5			R96 RQD93
(472.8)			Gray, shaly, fossiliferous SANDSTONE.	
20	6		Greenish gray SANDSTONE.	R100 RQD100
(469.0)				
25	7			R96 RQD93
30	8			R98 RQD95
35	9			R96 RQD95
	10			R100 RQD100

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/24/83 BORING NO. B-17

40	9		Greenish gray SANDSTONE. (continued)	cont.
	10			R100 RQD100
45	11			R100 RQD100
(440.5)				
50			Total depth of boring = 49.5 ft.	
			NOTES: (1) Boring was advanced dry to the 4.8-ft. depth.	
55			(2) The hole was open to 48.0 ft., and the water surface (probably drilling fluid) was noted at the 47.5-ft. depth on 9/25/83.	
60				
65				
70				
75				
80				
85				

SUBSURFACE EXPLORATION LOG

PROJECT 742 Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas
TYPE OF BORING Core

BORING NO. B-18
DATE 9/9/83
JOB NO. 4875
SURFACE ELEV. 500.77 ft.

LEGEND — ▽ groundwater table
sample type
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen, tsf RQD—rock qual. desig.
	1		Tan, sandy CLAY w/gravel. CL	N14
(497.3)				
5	2		Light greenish gray and tan, shaly SANDSTONE.	P4.5
	3			R95 RQD95
10	4			R60 RQD60
15	5			R100 RQD100
20	6			R100 RQD100
25	7		fossiliferous from 25.9 to 29.0 ft.	R100 RQD100
(471.8)				
30	8		Tan and greenish gray SANDSTONE.	R81 RQD70
35	9			R98 RQD96

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SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/9/83 BORING NO. B-18

40	9	Tan and greenish gray SANDSTONE. (continued)	cont.
	10		R92 RQD90
45	11		R94 RQD94
50 (450.8)		Total depth of boring = 50.0 ft.	
		NOTES: (1) Boring was advanced dry to the 5.5-ft. depth.	
55		(2) The hole was noted open to the 43.5-ft. depth and dry on 9/10/83.	
60			
65			
70			
75			
80			
85			

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SUBSURFACE EXPLORATION LOG

PROJECT Proposed 200-Acre Municipal Solid Waste Facility
744
Laredo, Texas
TYPE OF BORING Core

BORING NO. B-19
DATE 9/8/83
JOB NO. 4875
SURFACE ELEV. 491.91 ft.

LEGEND — ▼ groundwater table
sample type
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(491.4)	1		Tan SAND w/gravel. SP	N22
(490.4)			Maroon, sandy SHALE.	
			Light greenish gray and tan, sandy SHALE.	
5	2			R82 RQD82
10				
(477.2)	3			R100 RQD100
15			Light greenish gray and tan, shaly SANDSTONE.	
20	4			R100 RQD100
25				
(465.2)			Dark greenish gray, shaly SANDSTONE.	
30	5			R89 RQD89
35				
	6		fossiliferous from 36.7 to 39.7 ft.	R100 RQD100
(452.2)			Greenish gray SANDSTONE.	

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SUBSURFACE EXPLORATION LOG

745

JOB NO. 4875 DATE 9/8/83 BORING NO. B-19

40	6		Dark greenish gray, shaly SANDSTONE. (continued)	cont.
	7		Greenish gray SANDSTONE.	R78 RQD78
45	8			R100 RQD100
50 (441.9)			Total depth of boring = 50.0 ft.	
			NOTES: (1) Boring was advanced dry to the 4.7-ft. depth.	
55			(2) The hole was noted open to the 8.0-ft. depth and dry on 9/9/83.	
60				
65				
70				
75				
80				
85				

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SUBSURFACE EXPLORATION LOG

PROJECT 746 Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas
TYPE OF BORING Core

BORING NO. B-20
DATE 9/10/83
JOB NO. 4875
SURFACE ELEV. 492.94 ft.

LEGEND — ▼ groundwater table
sample type
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(491.4)	1		Tan, silty CLAY w/gravel. CL	N10
			Light greenish gray, sandy SHALE, jointed.	
5	2			R100 RQD100
(484.1)			Maroon, sandy SHALE, jointed.	
10 (482.1)	3		Light greenish gray, sandy SHALE, jointed.	R98 RQD87
(478.9)			Maroon, sandy SHALE, jointed.	
15	4			R85 RQD83
20 (472.4)	5		Light greenish gray and tan, sandy SHALE, jointed.	R100 RQD93
25	6			R100 RQD99
30	7			R100 RQD100
(458.9) 35	8		Light greenish gray and tan, shaly SANDSTONE.	R100 RQD100

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Austin, Texas

747

SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/10/83 BORING NO. B-20

40	8		Light greenish gray and tan, shaly SANDSTONE. (continued)	cont.
(449.5)	9			R96 RQD93
45			Dark greenish gray, shaly SANDSTONE.	
	10			R100 RQD100
50				
(442.4)			Total depth of boring = 50.5 ft.	
55			NOTES: (1) Boring was advanced dry to the 4.6-ft. depth.	
			(2) The hole was noted open to the 5.5-ft. depth and dry on 9/11/83.	
60				
65				
70				
75				
80				
85				

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SUBSURFACE EXPLORATION LOG

PROJECT 748 Proposed 200-Acre Municipal Solid Waste Facility Laredo, Texas
TYPE OF BORING Core

BORING NO. B-21
DATE 9/9/83
JOB NO. 4875
SURFACE ELEV. 476.55 ft.

LEGEND — sample type
▽ groundwater table
▨ thin-walled tube ▨ penetration test ⊠ no recovery
■ double tube core barrel ▨ disturbed □

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pack. pen, tsf RQD—rock qual. desig.
(476.1)	1		Tan SAND w/gravel. SP	N15
			Tan and light greenish gray, shaly SANDSTONE.	P4.5
5	2			
	3			R85 RQD85
10	4			R100 RQD100
15				
(459.9)	5		- Dark greenish gray, shaly, fossiliferous SANDSTONE.	R100 RQD100
20				
(456.5)	6		Greenish gray SANDSTONE.	R94 RQD92
25	7			R100 RQD100
30	8			R52 RQD50
35	9			R93 RQD93

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Austin, Texas

SUBSURFACE EXPLORATION LOG

JOB NO. 749 4875 DATE 9/9/83 BORING NO. B-21

40	9	Greenish gray SANDSTONE. (continued)	cont.
	10		R94 RQD92
45	11		92 RQD90
50 (426.6)			
		Total depth of boring = 50.0 ft.	
		NOTES: (1) Boring was advanced dry to the 4.7-ft. depth.	
55		(2) The hole was open to 40.0 ft., and the water surface (probably drilling fluid) was noted at the 39.0-ft. depth on 9/11/83.	
60			
65			
70			
75			
80			
85			

FRANK G. BRYANT & ASSOCIATES, INC.
Austin, Texas

SUBSURFACE EXPLORATION LOG

PROJECT 750 Proposed 200-Acre Municipal Solid Waste Facility
Laredo, Texas

TYPE OF BORING Core

BORING NO. B-22
DATE 9/7/83
JOB NO. 4875
SURFACE ELEV. 496.86 ft.

LEGEND — ▼ groundwater table
sample type
☑ thin-walled tube ☑ penetration test ☒ no recovery
■ double tube core barrel ☑ disturbed ☐

DEPTH FT. (ELEV.)	SAMPLE NO. & TYPE	SYMBOL	DESCRIPTION OF STRATA	N—blows / ft. R—recovery % P—pock. pen. tsf RQD—rock qual. desig.
(495.9)	1		Maroon CLAY w/gravel. CH	N26
			Greenish gray and tan, shaly SANDSTONE.	
	2			P4.5
5				
	3			P4.5
10	4			R100 RQD99
15				
(479.9)			Dark greenish gray, shaly SANDSTONE.	
	5		– scattered fossils from 19.2 to 27.0 ft.	R100 RQD100
20				
			– fossiliferous from 23.5 to 27.5 ft.	
25				
	6		– lignite lense at 27.0 ft.	R94 RQD92
30				
(466.9)			Greenish gray SANDSTONE.	
35	7			R79 RQD79

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Austin, Texas

751

SUBSURFACE EXPLORATION LOG

JOB NO. 4875 DATE 9/7/83 BORING NO. B-22

40	7	Greenish gray SANDSTONE. (continued)	cont.
	8		R100 RQD100
45	9		R90 RQD90
50 (446.9)		Total depth of boring = 50.0 ft.	
		NOTES: (1) Boring was advanced dry to the 9.3-ft. depth.	
		(2) The hole was noted open to the 42.2-ft. depth and dry on 9/8/83.	
55			
60			
65			
70			
75			
80			
85			

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Austin, Texas

Appendix 4C
Settlement Analysis for Phase 4

Prepared By Terracon Consultants, Inc.
Certificate of Authorization # TX F3272

9.3.14

Terracon	Made By:	RSG	Date:	9/2/14	Sheet:	1 of 5
	Checked By:	DCM	Date:	9/3/14	Job No.:	355137109
	Calculations For:	City of Laredo Landfill Phase IV Settlement Analysis				

Purpose:

In this calculation package, liner system settlements for the City of Laredo Landfill Phase IV are evaluated. Liner system settlements were calculated considering short-term primary consolidation and long-term secondary compression of existing construction and demolition (C&D) waste expected under the piggyback cover over the Phase IV Cell 1 C&D waste. Settlement analysis area also covered the bottom liners of Phase IV, Cells 2 and 3, however because of the absence of C&D waste in this area, no settlement is expected. The foundation soil underlying the remainder of Phase IV and below the existing C&D waste is assumed to be incompressible when compared to the compressibility of waste. This assumption is reasonable because a significant portion of the landfill will be excavated to the Laredo Formation, while remainder is founded on relatively stiff overburden soils. The settlement induced tensile strains in the liner system were also calculated to evaluate their potential effect on the liner integrity.

Method of Analysis:

Settlements

The compression settlement of C&D waste can be analyzed at various analysis points using the one-dimensional consolidation theory, commonly used for cohesive soils. Based on this theory, waste settlement has two components: settlement due to primary consolidation and settlement due to secondary consolidation.

The primary settlement component is related to the increase in effective vertical stresses resulting from the proposed liner system, proposed waste, and proposed final cover system. Settlements resulting from primary consolidation of the waste were calculated using the general form of the 1-D consolidation theory settlement equation as given below [Qian, Koerner, and Gray, 2002]:

$$\Delta H_c = \frac{C_{ce}}{1+e_0} * H_0 * log\left(\frac{\sigma'_0 + \Delta\sigma}{\sigma_0}\right)$$

where:
- ΔH_c = primary settlement
- C_{ce} = primary compression index
- e_0 = initial void ratio
- H_0 = initial thickness of layer
- σ'_0 = initial effective stress at the mid-point of the layer, and
- $\Delta\sigma$ = additional overburden pressure applied at the mid-point of the layer

The mechanisms for secondary settlement are mechanical creep, chemical reactions, and biodegradation. This type of compression is dependent on time, not applied loads. Settlements resulting from secondary settlement of the waste were calculated according to the following equation [Qian, Koerner, and Gray, 2002]:

$$\Delta H_\alpha = \frac{C_{\alpha e}}{1+e_0} * H_0 * log\left(\frac{t_2}{t_1}\right)$$

where:
- ΔH_α = secondary settlement
- $C_{\alpha e}$ = secondary compression index
- e_0 = initial void ratio
- t_2 = ending time of the time period for which long-term settlement of the layer is desired, and

t_1 = ending time of the time period for which long-term settlement of the layer is desired

Tensile Strains

Because of the settlement of the underlying C&D waste, the liner is expected deforms in a three dimensional manner. This three dimensional deformation will cause strains in the liner system (both compressive and tensile). The planar stains in the liner system (i.e., change in length divided by original length) were estimated by the following general equation:

$$\varepsilon_{tens} = 1 - \sqrt{\frac{1-s_f^2}{1-s_0^2}}$$

where: ε_{tens}= strain in the liner (tension is negative)
s_0 = initial slope of liner at the analysis point, and
s_f = slope of liner at analysis point after settlement has occurred

Material Parameters:

The material properties of C&D waste were conservatively selected based on information for municipal solid waste (MSW) reported in the literature (Table 1). The total unit weight for waste was assumed to be 70 pcf based on typical municipal solid waste as reported by Fasset et al. [1994]. Values of the primary compression index (C_{ce}) were reported in the range of 0.08 to 0.5. For the analyses presented herein, the median value of C_{ce} = 0.21 was used for primary settlement calculations. Values of the secondary compression index ($C_{\alpha e}$) were reported in the range of 0.001 to 0.7. For the analyses presented herein, the median value of $C_{\alpha e}$ = 0.02 was used for secondary settlement calculations.

Table 1 - Waste Compressibility Parameters
Compiled from Fassett, et. al., (1994), and Landva, et. al., (2000)

Reference	Year	Primary Compression Index C_{ce}		Secondary Compression Index $C_{\alpha e}$	
Sowers	1973	0.100	0.410	0.02	0.07
Zoino	1974	0.150	0.330	0.013	0.03
Converse	1975	0.250	0.300	0.7	
Chang & Hannon	1976	---		0.013	
Rao, et. al.	1977	0.160	0.235	0.012	0.046
York, et. al.	1977	0.080	0.210	0.02	0.04
Landva, et, al.	1984	0.200	0.500	0.0005	0.029
Burlingame	1985	0.150	0.350	0.04	
Oweis & Khera	1986	0.080	0.217	---	
Bjarngarrd & Edgers	1990	---		0.004	0.04
Lukas	1992	---		0.001	0.024
Wall & Zeiss	1995	0.210	0.250	0.033	0.056
Gabr & Valero	1995	0.200	0.230	0.015	0.023
Boutwell & Fiore	1995	0.090	0.190	0.006	0.012
Stulgis, et, al.	1995	0.160		0.02	
Green & Jamenjad	1997	---		0.01	0.08
Landva, et, al.	2000	0.170	0.240	0.01	0.016
Anderson, et. al.	2000	0.170	0.240	0.01	0.016

The unit weights of proposed liner system, cover system, and MSW waste in Phase IV were conservatively selected based on those reported in the literature, and are shown in Table 2.

Table 2 - Material Properties

Material	Unit Weight (pcf)
Liner System	120
MSW Waste	70
Cover System	120

Analysis Parameters:

The settlement was analyses at multiple locations on a grid pattern, with a spacing of 25 feet, as shown superimposed on the existing ground, proposed liner and existing C&D base grades, and proposed final cover grades (Figures 1 through 3). At each analysis location, the thickness of the compressible stratum (i.e., existing C&D waste), if any, was estimated based on the difference in elevation of the base grades for the C&D landfill and existing ground. In the area of the existing C&D waste, it was assumed that the proposed liner grades would closely match existing ground elevations. The additional overburden pressure due to Phase IV landfill was calculated using the proposed thicknesses of liner, and cover system, and the difference in elevations between the proposed liner and final cover grades. For the purpose of analysis, the existing C&D waste stratum was subdivided in multiple layers, up to 5 feet thick. The secondary compression was estimated to begin 1 year after closure of Phase IV, and end at 30 years post-closure.

Results: Results of the analysis are provided as a spreadsheet, with details of the settlement analysis at each location. The pre- and post-settlement slope at each analysis location was measured in AutoCAD Civil 3D 2014, and utilized to compute the post-settlement liner system strains. The estimated tensile strains were compared to conservative allowable tensile strains of 5 percent for the geomembrane [Berg & Bonaparte, 1993], and 10 percent for the GCL [LaGatta, 1992; Boardman, 1993]. As indicated the post-settlement liner tensile strains are well within acceptable limits.

Summary and Conclusions: In this calculation package, liner system settlements for the City of Laredo Landfill, Phase IV are evaluated. Liner system settlements were calculated considering short-term primary compression and long-term secondary compression of existing C&D waste underlying a portion of the landfill. The other foundation soil is assumed to be incompressible when compared to the compressibility of the C&D waste. The effects of settlement on the strains in the liner system barrier components (i.e. geomembrane and GCL) were evaluated.

Settlements were evaluated at multiple locations on a 25' grid pattern. The initial stresses in the geomembrane (i.e. immediately after construction are assumed to be zero. Results indicate that the maximum calculated post-settlement tensile strains that are expected to develop in the liner system due to compression of the underling C&D waste to be within an acceptable range.

References:

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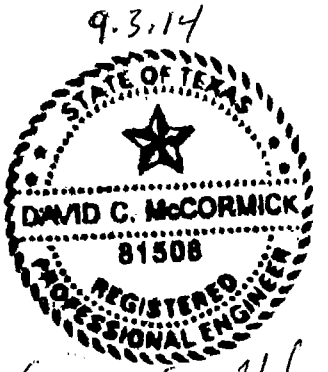
9.3.14



Firm Reg. F3272

EXISTING C&D WASTE

75 0 75 150

SCALE IN FEET

Project Mngr:	DCM
Drawn By:	RSG
Checked By:	DCM
Approved By:	DCM

Project No.	35137109
Scale:	AS SHOWN
File No.	N/A
Date:	06/03/13

Terracon
Consulting Engineers and Scientists
240 Heritage Walk, Suite 103 Woodstock, GA 30188
(770) 924-9799 (770) 924-7666

EXISTING CONDITIONS

PHASE IV SETTLEMENT CALCULATIONS
CITY OF LAREDO LANDFILL
6912 STATE HIGHWAY 359
LAREDO, TEXAS 78043

FIG 1

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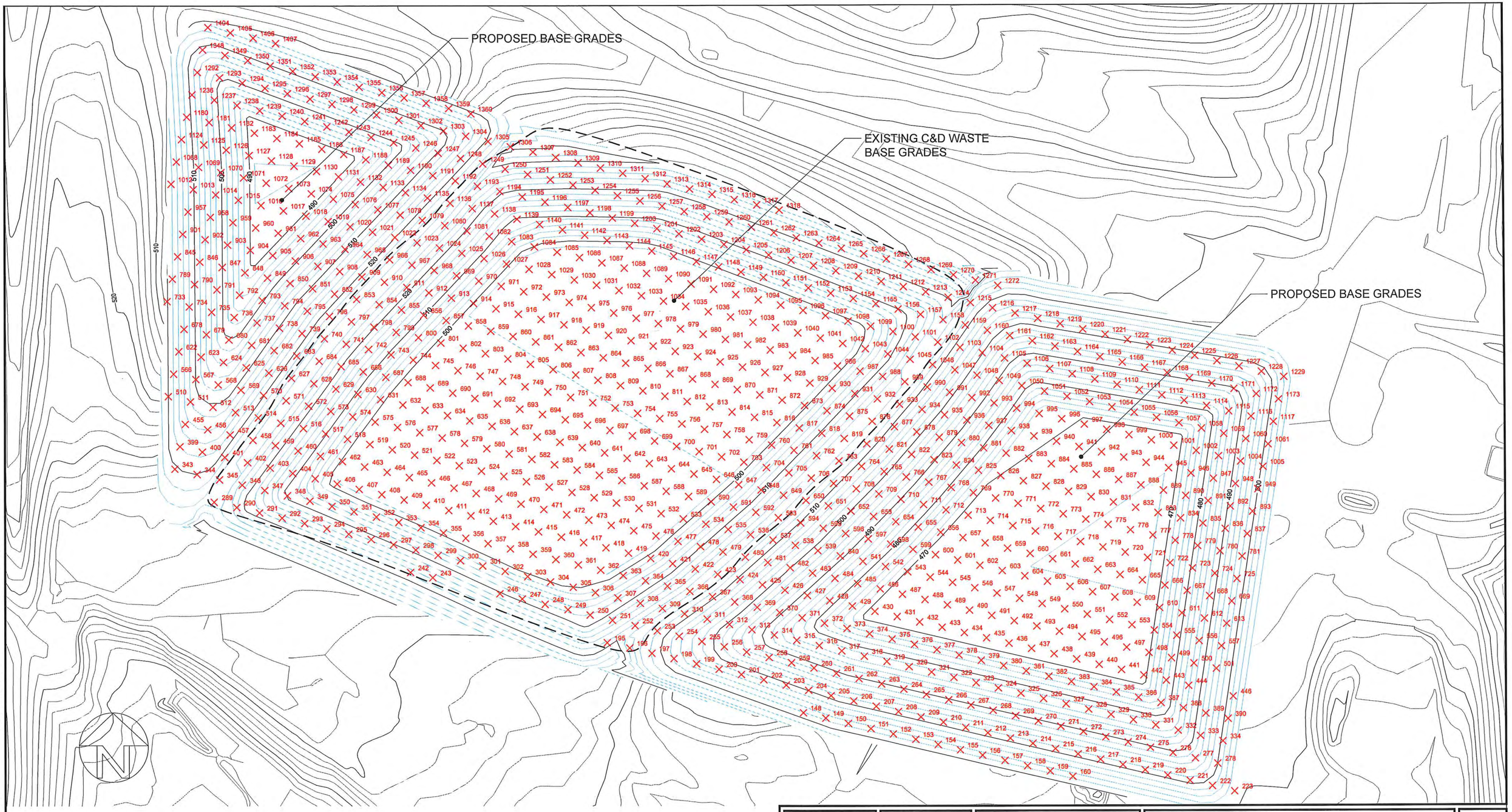

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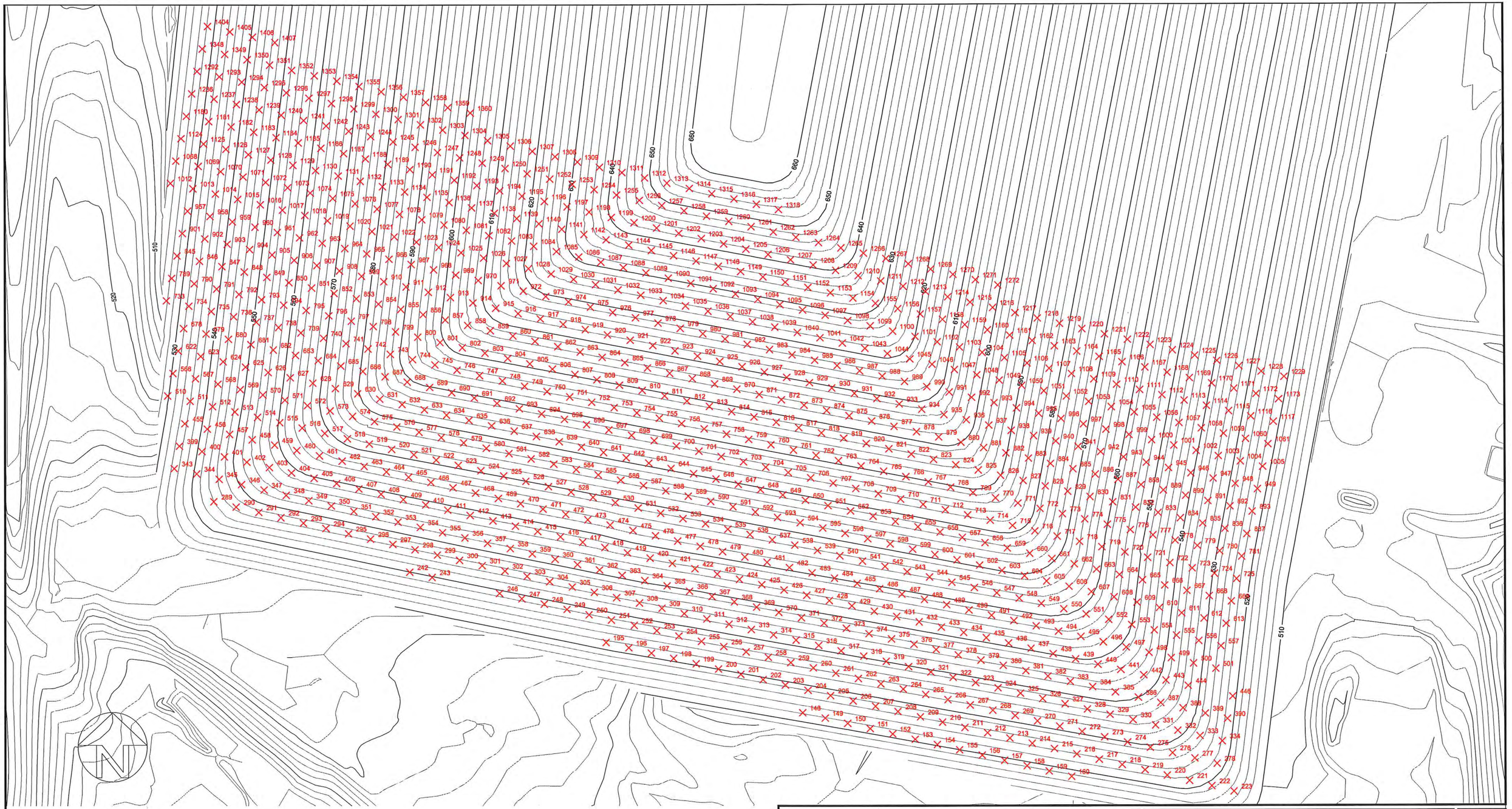
Project Mngr: DCM	Project No. 35137109	Terracon Consulting Engineers and Scientists	BASE GRADES
Drawn By: RSG	Scale: AS SHOWN	240 Heritage Walk, Suite 103 Woodstock, GA 30188	PHASE IV SETTLEMENT CALCULATIONS
Checked By: DCM	File No. N/A	(770) 924-9799 (770) 924-7866	CITY OF LAREDO LANDFILL
Approved By: DCM	Date: 06/03/13		6912 STATE HIGHWAY 359
			LAREDO, TEXAS 78043

FIG 2



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SCALE IN FEET

Project Mngr:	DCM
Drawn By:	RSG
Checked By:	DCM
Approved By:	DCM

Project No.	35137109
Scale:	AS SHOWN
File No.	N/A
Date:	06/03/13

Terracon
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240 Heritage Walk, Suite 103 Woodstock, GA 30188
(770) 924-9799 (770) 924-7866

FINAL GRADES

PHASE IV SETTLEMENT CALCULATIONS
CITY OF LAREDO LANDFILL
6912 STATE HIGHWAY 359
LAREDO, TEXAS 78043

FIG 3

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Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
148	17068941.80	688457.98	509.51	---	508.17	33.33%	522.22	0.00	506.17	2.00	12.05	2.00	1323.47
149	17068936.01	688482.30	509.74	---	507.24	33.33%	521.87	0.00	505.24	2.00	12.63	2.00	1364.04
150	17068930.22	688506.62	510.39	---	506.94	33.33%	521.53	0.00	504.94	2.00	12.59	2.00	1361.02
151	17068924.43	688530.94	511.59	---	506.97	33.33%	521.22	0.00	504.97	2.00	12.25	2.00	1337.53
152	17068918.64	688555.26	512.00	---	506.99	33.33%	520.91	0.00	504.99	2.00	11.91	2.00	1313.95
153	17068912.85	688579.58	511.12	---	507.02	33.33%	520.59	0.00	505.02	2.00	11.57	2.00	1289.93
154	17068907.06	688603.90	510.21	---	507.04	33.33%	520.28	0.00	505.04	2.00	11.24	2.00	1266.52
155	17068901.27	688628.22	509.99	---	507.07	33.33%	519.95	0.00	505.07	2.00	10.88	2.00	1241.59
156	17068895.48	688652.54	510.66	---	507.09	33.33%	519.41	0.00	505.09	2.00	10.32	2.00	1202.32
157	17068889.69	688676.86	511.36	---	507.11	33.33%	518.86	0.00	505.11	2.00	9.75	2.00	1162.53
158	17068883.90	688701.18	512.00	---	507.14	33.33%	518.32	0.00	505.14	2.00	9.18	2.00	1122.73
159	17068878.11	688725.50	512.00	---	507.16	33.33%	517.83	0.00	505.16	2.00	8.67	2.00	1086.86
160	17068872.32	688749.82	513.29	---	507.19	33.33%	517.46	0.00	505.19	2.00	8.27	2.00	1059.18
195	17069018.23	688244.88	525.28	518.56	527.28	12.20%	531.54	6.71	525.28	2.00	2.26	2.00	638.15
196	17069012.44	688269.21	522.23	516.87	524.23	12.62%	531.23	5.36	522.23	2.00	5.00	2.00	829.73
197	17069006.65	688293.53	519.24	---	511.77	18.78%	530.92	0.00	509.77	2.00	17.15	2.00	1680.21
198	17069000.86	688317.85	515.39	---	507.90	19.83%	530.62	0.00	505.90	2.00	20.71	2.00	1929.90
199	17068995.07	688342.17	509.95	---	504.83	25.91%	530.32	0.00	502.83	2.00	23.49	2.00	2124.37
200	17068989.28	688366.49	508.00	---	503.60	33.33%	530.05	0.00	501.60	2.00	24.45	2.00	2191.28
201	17068983.49	688390.81	508.00	---	502.67	33.33%	529.61	0.00	500.67	2.00	24.93	2.00	2225.28
202	17068977.70	688415.13	508.00	---	501.75	33.33%	529.10	0.00	499.75	2.00	25.36	2.00	2255.09
203	17068971.91	688439.45	508.00	---	500.82	33.33%	528.59	0.00	498.82	2.00	25.78	2.00	2284.34
204	17068966.12	688463.77	508.00	---	499.89	33.33%	528.08	0.00	497.89	2.00	26.19	2.00	2313.60
205	17068960.33	688488.09	508.00	---	498.96	33.33%	527.70	0.00	496.96	2.00	26.74	2.00	2351.65
206	17068954.54	688512.41	508.77	---	498.61	33.33%	527.34	0.00	496.61	2.00	26.73	2.00	2351.28
207	17068948.75	688536.73	512.00	---	498.63	33.33%	527.02	0.00	496.63	2.00	26.38	2.00	2326.80
208	17068942.96	688561.05	510.58	---	498.66	33.33%	526.66	0.00	496.66	2.00	26.01	2.00	2300.38
209	17068937.17	688585.37	511.14	---	498.68	33.33%	526.30	0.00	496.68	2.00	25.61	2.00	2272.88
210	17068931.38	688609.69	510.08	---	498.71	33.33%	525.93	0.00	496.71	2.00	25.23	2.00	2245.80
211	17068925.59	688634.01	509.75	---	498.73	33.33%	525.60	0.00	496.73	2.00	24.87	2.00	2220.63
212	17068919.80	688658.33	509.91	---	498.76	33.33%	525.25	0.00	496.76	2.00	24.49	2.00	2194.43
213	17068914.01	688682.65	511.25	---	498.78	33.33%	524.92	0.00	496.78	2.00	24.14	2.00	2169.95
214	17068908.22	688706.97	514.87	---	498.81	33.33%	524.60	0.00	496.81	2.00	23.79	2.00	2145.48
215	17068902.43	688731.29	517.66	---	498.83	33.33%	524.27	0.00	496.83	2.00	23.44	2.00	2121.09
216	17068896.65	688755.61	518.26	---	498.85	33.33%	523.95	0.00	496.85	2.00	23.10	2.00	2096.87
217	17068890.86	688779.93	520.00	---	498.88	33.33%	523.63	0.00	496.88	2.00	22.75	2.00	2072.72
218	17068885.07	688804.25	511.12	---	498.90	33.33%	523.31	0.00	496.90	2.00	22.41	2.00	2048.57
219	17068879.28	688828.57	510.54	---	498.93	33.33%	522.99	0.00	496.93	2.00	22.06	2.00	2024.43
220	17068873.49	688852.89	510.26	---	498.95	33.33%	522.51	0.00	496.95	2.00	21.56	2.00	1989.06
221	17068867.70	688877.21	509.91	---	499.06	27.25%	521.47	0.00	497.06	2.00	20.41	2.00	1908.71
222	17068861.91	688901.53	509.31	---	502.06	23.58%	518.68	0.00	500.06	2.00	14.62	2.00	1503.20
223	17068856.12	688925.86	509.68	---	508.00	28.01%	515.04	0.00	506.00	2.00	5.04	2.00	832.63

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
242	17069094.65	688031.79	535.64	517.08	537.64	4.97%	539.93	18.55	535.64	2.00	0.29	2.00	500.48
243	17069088.86	688056.11	534.59	515.45	536.59	4.55%	539.69	19.14	534.59	2.00	1.10	2.00	557.09
246	17069071.50	688129.07	532.13	510.53	534.13	3.03%	538.96	21.60	532.13	2.00	2.83	2.00	678.18
247	17069065.71	688153.39	531.15	509.27	533.15	4.23%	538.72	21.88	531.15	2.00	3.58	2.00	730.25
248	17069059.92	688177.71	530.14	508.18	532.14	3.77%	538.46	21.96	530.14	2.00	4.32	2.00	782.39
249	17069054.13	688202.03	528.89	507.29	530.89	5.03%	538.16	21.60	528.89	2.00	5.27	2.00	849.12
250	17069048.34	688226.35	527.51	508.16	529.51	6.33%	537.89	19.35	527.51	2.00	6.38	2.00	926.54
251	17069042.55	688250.67	526.01	512.58	528.01	6.17%	537.62	13.43	526.01	2.00	7.61	2.00	1012.83
252	17069036.76	688274.99	523.09	517.45	525.09	13.33%	537.33	5.63	523.09	2.00	10.24	2.00	1197.06
253	17069030.97	688299.32	519.85	---	512.48	25.24%	536.96	0.00	510.48	2.00	22.48	2.00	2053.57
254	17069025.18	688323.64	517.30	---	507.06	24.34%	536.59	0.00	505.06	2.00	27.53	2.00	2407.21
255	17069019.39	688347.96	513.49	---	502.23	17.51%	536.19	0.00	500.23	2.00	31.96	2.00	2717.34
256	17069013.60	688372.28	508.84	---	497.82	20.19%	535.85	0.00	495.82	2.00	36.03	2.00	3002.11
257	17069007.81	688396.60	508.00	---	494.60	23.51%	535.50	0.00	492.60	2.00	38.90	2.00	3203.16
258	17069002.02	688420.92	508.00	---	493.46	33.33%	535.11	0.00	491.46	2.00	39.64	2.00	3255.06
259	17068996.23	688445.24	508.00	---	492.54	33.33%	534.71	0.00	490.54	2.00	40.18	2.00	3292.56
260	17068990.44	688469.56	508.00	---	491.61	33.33%	534.32	0.00	489.61	2.00	40.71	2.00	3329.97
261	17068984.65	688493.88	508.00	---	490.68	33.33%	533.94	0.00	488.68	2.00	41.27	2.00	3368.60
262	17068978.86	688518.20	508.00	---	490.28	33.33%	533.58	0.00	488.28	2.00	41.30	2.00	3371.08
263	17068973.07	688542.52	510.81	---	490.30	33.33%	533.21	0.00	488.30	2.00	40.91	2.00	3343.71
264	17068967.28	688566.84	510.00	---	490.33	33.33%	532.84	0.00	488.33	2.00	40.52	2.00	3316.25
265	17068961.49	688591.16	510.48	---	490.35	33.33%	532.47	0.00	488.35	2.00	40.12	2.00	3288.37
266	17068955.70	688615.48	510.17	---	490.37	33.33%	532.11	0.00	488.37	2.00	39.74	2.00	3261.53
267	17068949.91	688639.80	509.83	---	490.40	33.33%	531.81	0.00	488.40	2.00	39.42	2.00	3239.08
268	17068944.12	688664.12	509.87	---	490.42	33.33%	531.55	0.00	488.42	2.00	39.12	2.00	3218.65
269	17068938.33	688688.44	516.79	---	490.45	33.33%	531.28	0.00	488.45	2.00	38.83	2.00	3198.30
270	17068932.54	688712.76	524.69	---	490.47	33.33%	531.02	0.00	488.47	2.00	38.54	2.00	3178.13
271	17068926.76	688737.08	520.80	---	490.50	33.33%	530.76	0.00	488.50	2.00	38.27	2.00	3158.75
272	17068920.97	688761.40	516.86	---	490.52	33.33%	530.51	0.00	488.52	2.00	37.99	2.00	3139.05
273	17068915.18	688785.72	511.98	---	490.55	33.33%	530.26	0.00	488.55	2.00	37.71	2.00	3119.83
274	17068909.39	688810.04	509.67	---	490.57	33.33%	530.01	0.00	488.57	2.00	37.44	2.00	3100.61
275	17068903.60	688834.36	509.53	---	490.60	33.33%	528.98	0.00	488.60	2.00	36.39	2.00	3027.11
276	17068897.81	688858.68	509.27	---	490.62	33.33%	527.17	0.00	488.62	2.00	34.55	2.00	2898.70
277	17068892.02	688883.00	509.02	---	493.65	24.51%	524.49	0.00	491.65	2.00	28.84	2.00	2498.81
278	17068886.23	688907.32	508.83	---	500.19	33.33%	521.27	0.00	498.19	2.00	19.08	2.00	1815.62
289	17069171.08	687818.70	538.80	525.09	540.80	2.39%	543.99	13.70	538.80	2.00	1.19	2.00	563.45
290	17069165.29	687843.02	539.11	522.66	541.11	2.39%	546.59	16.44	539.11	2.00	3.48	2.00	723.78
291	17069159.50	687867.34	539.10	518.73	541.10	3.47%	547.40	20.36	539.10	2.00	4.30	2.00	781.19
292	17069153.71	687891.66	539.23	517.02	541.23	4.93%	547.26	22.21	539.23	2.00	4.03	2.00	762.37
293	17069147.92	687915.98	539.35	515.67	541.35	5.52%	547.03	23.67	539.35	2.00	3.68	2.00	737.91
294	17069142.13	687940.30	539.51	514.33	541.51	6.80%	546.83	25.18	539.51	2.00	3.32	2.00	712.11
295	17069136.34	687964.62	539.44	512.98	541.44	6.76%	546.64	26.46	539.44	2.00	3.20	2.00	703.97

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
296	17069130.55	687988.94	538.71	511.62	540.71	5.42%	546.46	27.10	538.71	2.00	3.74	2.00	742.09
297	17069124.76	688013.26	537.26	510.24	539.26	7.05%	546.27	27.02	537.26	2.00	5.01	2.00	830.74
298	17069118.97	688037.58	535.67	508.87	537.67	4.61%	546.08	26.80	535.67	2.00	6.41	2.00	928.53
299	17069113.19	688061.90	534.52	507.29	536.52	4.61%	545.89	27.23	534.52	2.00	7.37	2.00	995.80
300	17069107.40	688086.22	533.58	505.65	535.58	3.08%	545.70	27.93	533.58	2.00	8.12	2.00	1048.36
301	17069101.61	688110.54	532.83	503.97	534.83	2.99%	545.47	28.86	532.83	2.00	8.64	2.00	1084.98
302	17069095.82	688134.86	532.10	502.35	534.10	3.02%	545.23	29.75	532.10	2.00	9.13	2.00	1118.79
303	17069090.03	688159.18	531.41	501.05	533.41	3.84%	544.98	30.35	531.41	2.00	9.57	2.00	1150.10
304	17069084.24	688183.50	530.61	500.08	532.61	4.30%	544.73	30.52	530.61	2.00	10.12	2.00	1188.71
305	17069078.45	688207.82	529.49	500.13	531.49	6.31%	544.48	29.36	529.49	2.00	11.00	2.00	1249.94
306	17069072.66	688232.14	528.18	502.39	530.18	6.07%	544.24	25.80	528.18	2.00	12.05	2.00	1323.77
307	17069066.87	688256.46	526.76	507.33	528.76	8.84%	543.99	19.43	526.76	2.00	13.23	2.00	1405.75
308	17069061.08	688280.78	524.39	512.91	526.39	13.36%	543.74	11.48	524.39	2.00	15.35	2.00	1554.44
309	17069055.29	688305.10	521.73	517.17	523.73	15.37%	543.38	4.55	521.73	2.00	17.65	2.00	1715.63
310	17069049.50	688329.43	518.64	---	511.54	31.13%	542.89	0.00	509.54	2.00	29.35	2.00	2534.54
311	17069043.71	688353.75	516.40	---	505.39	31.27%	542.50	0.00	503.39	2.00	35.11	2.00	2937.51
312	17069037.92	688378.07	511.68	---	499.11	32.59%	542.14	0.00	497.11	2.00	41.03	2.00	3351.93
313	17069032.13	688402.39	508.00	---	492.79	22.70%	541.82	0.00	490.79	2.00	47.03	2.00	3772.39
314	17069026.34	688426.71	508.00	---	487.59	19.01%	541.53	0.00	485.59	2.00	51.94	2.00	4115.90
315	17069020.55	688451.03	508.00	---	484.25	33.33%	541.23	0.00	482.25	2.00	54.98	2.00	4328.50
316	17069014.76	688475.35	508.00	---	483.55	22.22%	540.93	0.00	481.55	2.00	55.38	2.00	4356.82
317	17069008.97	688499.67	508.00	---	482.93	22.22%	540.64	0.00	480.93	2.00	55.71	2.00	4379.62
318	17069003.18	688523.99	508.00	---	482.63	22.22%	540.37	0.00	480.63	2.00	55.74	2.00	4381.74
319	17068997.39	688548.31	509.71	---	482.64	22.22%	540.10	0.00	480.64	2.00	55.45	2.00	4361.59
320	17068991.60	688572.63	510.01	---	482.66	22.22%	539.68	0.00	480.66	2.00	55.01	2.00	4330.99
321	17068985.81	688596.95	510.13	---	482.68	22.22%	539.11	0.00	480.68	2.00	54.43	2.00	4290.38
322	17068980.02	688621.27	510.17	---	482.69	22.22%	538.44	0.00	480.69	2.00	53.75	2.00	4242.19
323	17068974.23	688645.59	509.59	---	482.71	22.22%	537.92	0.00	480.71	2.00	53.21	2.00	4204.88
324	17068968.44	688669.91	509.18	---	482.73	22.22%	537.56	0.00	480.73	2.00	52.84	2.00	4178.61
325	17068962.65	688694.23	513.18	---	482.74	22.22%	537.20	0.00	480.74	2.00	52.46	2.00	4152.33
326	17068956.87	688718.55	522.35	---	482.76	22.22%	536.85	0.00	480.76	2.00	52.09	2.00	4126.07
327	17068951.08	688742.87	517.78	---	482.78	22.22%	536.49	0.00	480.78	2.00	51.71	2.00	4099.80
328	17068945.29	688767.19	509.68	---	482.79	22.22%	536.13	0.00	480.79	2.00	51.34	2.00	4073.53
329	17068939.50	688791.51	509.50	---	482.81	22.22%	535.77	0.00	480.81	2.00	50.96	2.00	4047.27
330	17068933.71	688815.83	509.03	---	482.82	22.22%	535.01	0.00	480.82	2.00	50.19	2.00	3993.10
331	17068927.92	688840.15	508.80	---	482.84	22.22%	533.35	0.00	480.84	2.00	48.51	2.00	3875.58
332	17068922.13	688864.47	508.54	---	485.29	25.09%	530.89	0.00	483.29	2.00	43.61	2.00	3532.36
333	17068916.34	688888.79	509.15	---	492.57	33.33%	526.69	0.00	490.57	2.00	32.12	2.00	2728.46
334	17068910.55	688913.11	508.27	---	500.88	33.33%	521.79	0.00	498.88	2.00	18.92	2.00	1804.25
343	17069206.98	687775.85	534.19	---	520.47	12.69%	534.79	0.00	518.47	2.00	12.32	2.00	1342.25
344	17069201.19	687800.17	536.31	---	520.16	17.77%	540.84	0.00	518.16	2.00	18.68	2.00	1787.80
345	17069195.40	687824.49	538.26	524.72	540.26	5.40%	546.33	13.54	538.26	2.00	4.07	2.00	764.68

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
346	17069189.61	687848.81	539.29	523.37	541.29	4.89%	550.29	15.92	539.29	2.00	6.99	2.00	969.60
347	17069183.82	687873.13	539.89	516.15	541.89	3.32%	552.59	23.74	539.89	2.00	8.69	2.00	1088.57
348	17069178.03	687897.45	540.04	509.89	542.04	0.41%	553.48	30.14	540.04	2.00	9.45	2.00	1141.24
349	17069172.24	687921.77	540.06	508.11	542.06	0.50%	553.31	31.96	540.06	2.00	9.24	2.00	1127.12
350	17069166.45	687946.09	540.08	506.56	542.08	0.48%	553.13	33.53	540.08	2.00	9.05	2.00	1113.25
351	17069160.66	687970.41	540.09	504.87	542.09	0.62%	552.95	35.22	540.09	2.00	8.86	2.00	1100.15
352	17069154.87	687994.73	539.12	503.37	541.12	6.28%	552.78	35.75	539.12	2.00	9.65	2.00	1155.84
353	17069149.08	688019.05	537.45	502.02	539.45	8.14%	552.60	35.43	537.45	2.00	11.15	2.00	1260.44
354	17069143.30	688043.37	535.69	500.65	537.69	4.54%	552.39	35.04	535.69	2.00	12.71	2.00	1369.45
355	17069137.51	688067.69	534.55	499.11	536.55	4.68%	552.21	35.44	534.55	2.00	13.67	2.00	1436.66
356	17069131.72	688092.01	533.62	498.00	535.62	2.86%	552.01	35.62	533.62	2.00	14.39	2.00	1487.59
357	17069125.93	688116.33	532.98	498.00	534.98	2.58%	551.82	34.98	532.98	2.00	14.84	2.00	1518.91
358	17069120.14	688140.65	532.49	498.00	534.49	2.41%	551.61	34.49	532.49	2.00	15.12	2.00	1538.68
359	17069114.35	688164.97	532.04	498.00	534.04	2.39%	551.42	34.04	532.04	2.00	15.38	2.00	1556.89
360	17069108.56	688189.29	531.09	498.00	533.09	4.16%	551.24	33.09	531.09	2.00	16.14	2.00	1610.11
361	17069102.77	688213.61	530.13	498.00	532.13	4.32%	551.04	32.13	530.13	2.00	16.92	2.00	1664.06
362	17069096.98	688237.93	528.91	498.00	530.91	5.39%	550.88	30.91	528.91	2.00	17.97	2.00	1737.72
363	17069091.19	688262.25	527.42	501.46	529.42	9.85%	550.69	25.96	527.42	2.00	19.27	2.00	1828.71
364	17069085.40	688286.57	525.18	507.39	527.18	9.68%	550.49	17.80	525.18	2.00	21.31	2.00	1971.38
365	17069079.61	688310.89	522.94	513.24	524.94	10.00%	550.11	9.70	522.94	2.00	23.16	2.00	2101.54
366	17069073.82	688335.21	520.22	516.81	522.22	13.88%	549.55	3.40	520.22	2.00	25.33	2.00	2253.07
367	17069068.03	688359.54	517.68	---	510.76	35.85%	549.05	0.00	508.76	2.00	36.29	2.00	3020.32
368	17069062.24	688383.86	514.95	---	504.21	33.35%	548.59	0.00	502.21	2.00	42.38	2.00	3446.54
369	17069056.45	688408.18	510.05	---	497.38	33.35%	548.09	0.00	495.38	2.00	48.71	2.00	3889.84
370	17069050.66	688432.50	508.00	---	490.62	31.88%	547.69	0.00	488.62	2.00	55.07	2.00	4334.88
371	17069044.87	688456.82	508.00	---	483.93	31.43%	547.31	0.00	481.93	2.00	61.38	2.00	4776.44
372	17069039.08	688481.14	508.00	---	477.98	20.53%	546.92	0.00	475.98	2.00	66.94	2.00	5165.51
373	17069033.29	688505.46	508.13	---	475.12	33.33%	546.55	0.00	473.12	2.00	69.43	2.00	5340.09
374	17069027.50	688529.78	509.31	---	474.61	33.33%	546.17	0.00	472.61	2.00	69.56	2.00	5349.52
375	17069021.71	688554.10	510.14	---	474.63	33.33%	545.80	0.00	472.63	2.00	69.17	2.00	5321.95
376	17069015.92	688578.42	510.36	---	474.66	33.33%	545.44	0.00	472.66	2.00	68.78	2.00	5294.81
377	17069010.13	688602.74	510.47	---	474.68	33.33%	545.06	0.00	472.68	2.00	68.37	2.00	5266.16
378	17069004.34	688627.06	509.93	---	474.71	33.33%	544.68	0.00	472.71	2.00	67.97	2.00	5237.90
379	17068998.55	688651.38	509.10	---	474.73	33.33%	544.30	0.00	472.73	2.00	67.57	2.00	5209.84
380	17068992.76	688675.70	508.42	---	474.76	33.33%	543.92	0.00	472.76	2.00	67.17	2.00	5181.76
381	17068986.98	688700.02	509.08	---	474.78	33.33%	543.55	0.00	472.78	2.00	66.76	2.00	5153.52
382	17068981.19	688724.34	510.67	---	474.81	33.33%	543.17	0.00	472.81	2.00	66.36	2.00	5125.35
383	17068975.40	688748.66	509.23	---	474.83	33.33%	542.79	0.00	472.83	2.00	65.96	2.00	5097.30
384	17068969.61	688772.98	508.60	---	474.85	33.33%	542.42	0.00	472.85	2.00	65.56	2.00	5069.32
385	17068963.82	688797.30	508.42	---	474.88	33.33%	541.65	0.00	472.88	2.00	64.77	2.00	5013.74
386	17068958.03	688821.62	508.33	---	474.90	33.33%	539.98	0.00	472.90	2.00	63.08	2.00	4895.61
387	17068952.24	688845.94	508.78	---	477.17	28.90%	536.50	0.00	475.17	2.00	57.32	2.00	4492.67

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
388	17068946.45	688870.26	509.62	---	484.95	33.33%	532.43	0.00	482.95	2.00	45.48	2.00	3663.75
389	17068940.66	688894.58	508.21	---	493.25	33.33%	527.22	0.00	491.25	2.00	31.97	2.00	2717.61
390	17068934.87	688918.90	507.68	---	501.56	33.33%	521.41	0.00	499.56	2.00	17.85	2.00	1729.60
399	17069231.30	687781.64	531.60	---	517.94	14.40%	535.19	0.00	515.94	2.00	15.24	2.00	1546.87
400	17069225.51	687805.96	534.10	---	517.24	13.17%	541.32	0.00	515.24	2.00	22.08	2.00	2025.82
401	17069219.72	687830.28	536.50	---	521.60	33.33%	547.59	0.00	519.60	2.00	23.99	2.00	2159.01
402	17069213.93	687854.60	538.54	526.49	540.54	6.80%	552.76	12.05	538.54	2.00	10.23	2.00	1195.97
403	17069208.14	687878.92	540.00	519.00	542.00	1.13%	556.44	21.00	540.00	2.00	12.43	2.00	1350.28
404	17069202.35	687903.24	540.13	511.31	542.13	0.40%	558.79	28.81	540.13	2.00	14.67	2.00	1506.63
405	17069196.56	687927.56	540.18	504.37	542.18	0.41%	559.65	35.80	540.18	2.00	15.47	2.00	1562.98
406	17069190.77	687951.88	540.20	498.71	542.20	0.50%	559.46	41.49	540.20	2.00	15.26	2.00	1548.21
407	17069184.98	687976.20	540.23	498.00	542.23	0.49%	559.28	42.23	540.23	2.00	15.05	2.00	1533.63
408	17069179.19	688000.52	539.69	498.00	541.69	7.08%	559.09	41.69	539.69	2.00	15.40	2.00	1558.04
409	17069173.41	688024.84	538.04	498.00	540.04	7.11%	558.89	40.04	538.04	2.00	16.85	2.00	1659.58
410	17069167.62	688049.16	535.98	498.00	537.98	5.24%	558.66	37.98	535.98	2.00	18.68	2.00	1787.41
411	17069161.83	688073.48	534.91	498.00	536.91	5.79%	558.44	36.91	534.91	2.00	19.53	2.00	1847.04
412	17069156.04	688097.80	533.86	498.00	535.86	2.58%	558.12	35.86	533.86	2.00	20.26	2.00	1898.40
413	17069150.25	688122.12	533.33	498.00	535.33	2.50%	557.85	35.33	533.33	2.00	20.52	2.00	1916.22
414	17069144.46	688146.44	532.82	498.00	534.82	2.52%	557.60	34.82	532.82	2.00	20.78	2.00	1934.40
415	17069138.67	688170.76	532.25	498.00	534.25	2.57%	557.34	34.25	532.25	2.00	21.09	2.00	1956.62
416	17069132.88	688195.08	531.58	498.00	533.58	4.95%	557.09	33.58	531.58	2.00	21.51	2.00	1985.97
417	17069127.09	688219.40	530.62	498.00	532.62	5.43%	556.85	32.62	530.62	2.00	22.22	2.00	2035.67
418	17069121.30	688243.72	529.53	498.00	531.53	5.63%	556.72	31.53	529.53	2.00	23.19	2.00	2103.11
419	17069115.51	688268.04	528.29	498.00	530.29	6.76%	556.65	30.29	528.29	2.00	24.36	2.00	2185.00
420	17069109.72	688292.36	526.09	501.52	528.09	10.16%	556.33	24.57	526.09	2.00	26.25	2.00	2317.24
421	17069103.93	688316.68	523.79	507.88	525.79	8.65%	555.98	15.91	523.79	2.00	28.19	2.00	2453.39
422	17069098.14	688341.00	521.66	514.67	523.66	12.01%	555.49	6.98	521.66	2.00	29.83	2.00	2568.10
423	17069092.35	688365.32	518.93	515.39	520.93	10.99%	555.10	3.54	518.93	2.00	32.17	2.00	2732.24
424	17069086.56	688389.65	516.66	---	508.98	33.35%	554.74	0.00	506.98	2.00	43.75	2.00	3542.73
425	17069080.77	688413.97	513.77	---	502.15	33.35%	554.36	0.00	500.15	2.00	50.22	2.00	3995.13
426	17069074.98	688438.29	510.52	---	495.34	32.27%	553.98	0.00	493.34	2.00	56.65	2.00	4445.28
427	17069069.19	688462.61	510.00	---	488.51	34.91%	553.60	0.00	486.51	2.00	63.10	2.00	4896.68
428	17069063.40	688486.93	511.00	---	481.67	31.93%	553.22	0.00	479.67	2.00	69.55	2.00	5348.54
429	17069057.61	688511.25	511.97	---	474.85	31.95%	552.85	0.00	472.85	2.00	75.99	2.00	5799.41
430	17069051.82	688535.57	511.72	---	470.00	0.00%	552.47	0.00	468.00	2.00	80.47	2.00	6113.05
431	17069046.03	688559.89	511.61	---	470.00	0.00%	552.10	0.00	468.00	2.00	80.10	2.00	6087.20
432	17069040.24	688584.21	510.91	---	470.00	0.00%	551.80	0.00	468.00	2.00	79.80	2.00	6065.96
433	17069034.45	688608.53	510.30	---	470.00	0.00%	551.52	0.00	468.00	2.00	79.52	2.00	6046.64
434	17069028.66	688632.85	509.91	---	470.00	0.00%	551.24	0.00	468.00	2.00	79.24	2.00	6027.13
435	17069022.87	688657.17	508.74	---	469.95	2.61%	550.97	0.00	467.95	2.00	79.02	2.00	6011.30
436	17069017.09	688681.49	507.39	---	469.78	2.07%	550.70	0.00	467.78	2.00	78.92	2.00	6004.48
437	17069011.30	688705.81	507.50	---	469.78	2.09%	550.43	0.00	467.78	2.00	78.65	2.00	5985.56

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
438	17069005.51	688730.13	507.71	---	469.78	2.09%	550.16	0.00	467.78	2.00	78.38	2.00	5966.94
439	17068999.72	688754.45	507.67	---	469.78	2.09%	549.78	0.00	467.78	2.00	78.00	2.00	5939.78
440	17068993.93	688778.77	507.58	---	469.78	2.09%	548.07	0.00	467.78	2.00	76.29	2.00	5820.30
441	17068988.14	688803.09	507.77	---	469.78	2.09%	545.72	0.00	467.78	2.00	73.93	2.00	5655.37
442	17068982.35	688827.41	508.75	---	469.81	2.57%	542.44	0.00	467.81	2.00	70.63	2.00	5424.31
443	17068976.56	688851.73	509.94	---	477.32	33.33%	538.23	0.00	475.32	2.00	58.90	2.00	4603.12
444	17068970.77	688876.05	507.89	---	485.63	33.33%	532.59	0.00	483.63	2.00	44.96	2.00	3627.36
445	17068964.98	688900.37	507.63	---	493.93	33.33%	526.61	0.00	491.93	2.00	30.68	2.00	2627.27
455	17069255.62	687787.43	528.13	---	514.88	21.47%	535.54	0.00	512.88	2.00	18.66	2.00	1786.26
456	17069249.83	687811.75	532.26	---	513.94	13.94%	541.72	0.00	511.94	2.00	25.78	2.00	2284.66
457	17069244.04	687836.07	534.43	---	518.45	33.33%	548.04	0.00	516.45	2.00	27.58	2.00	2410.85
458	17069238.25	687860.39	537.05	526.06	539.05	12.11%	554.00	10.99	537.05	2.00	12.95	2.00	1386.37
459	17069232.46	687884.71	538.77	522.27	540.77	7.48%	559.00	16.50	538.77	2.00	16.23	2.00	1616.37
460	17069226.67	687909.03	539.96	514.59	541.96	6.87%	562.78	25.37	539.96	2.00	18.82	2.00	1797.20
461	17069220.88	687933.35	540.25	506.93	542.25	0.50%	564.98	33.32	540.25	2.00	20.73	2.00	1931.02
462	17069215.09	687957.67	540.32	499.26	542.32	0.41%	565.66	41.06	540.32	2.00	21.34	2.00	1973.93
463	17069209.30	687981.99	540.35	498.00	542.35	0.48%	565.43	42.35	540.35	2.00	21.08	2.00	1955.80
464	17069203.52	688006.31	540.16	498.00	542.16	3.60%	565.19	42.16	540.16	2.00	21.03	2.00	1952.42
465	17069197.73	688030.63	539.23	498.00	541.23	8.63%	564.98	41.23	539.23	2.00	21.75	2.00	2002.23
466	17069191.94	688054.95	538.00	498.00	540.00	8.13%	564.75	40.00	538.00	2.00	22.75	2.00	2072.71
467	17069186.15	688079.27	535.80	498.00	537.80	6.18%	564.52	37.80	535.80	2.00	24.72	2.00	2210.23
468	17069180.36	688103.59	534.50	498.00	536.50	6.42%	564.18	36.50	534.50	2.00	25.68	2.00	2277.84
469	17069174.57	688127.91	533.68	498.00	535.68	2.58%	563.91	35.68	533.68	2.00	26.23	2.00	2316.35
470	17069168.78	688152.23	533.15	498.00	535.15	2.59%	563.64	35.15	533.15	2.00	26.49	2.00	2333.95
471	17069162.99	688176.55	532.79	498.00	534.79	3.00%	563.36	34.79	532.79	2.00	26.58	2.00	2340.27
472	17069157.20	688200.87	532.37	498.00	534.37	3.50%	563.09	34.37	532.37	2.00	26.72	2.00	2350.53
473	17069151.41	688225.19	531.57	498.00	533.57	5.72%	562.83	33.57	531.57	2.00	27.26	2.00	2387.86
474	17069145.62	688249.51	530.55	498.00	532.55	6.06%	562.71	32.55	530.55	2.00	28.16	2.00	2451.14
475	17069139.83	688273.83	529.16	498.00	531.16	8.55%	562.73	31.16	529.16	2.00	29.56	2.00	2549.38
476	17069134.04	688298.15	527.06	498.00	529.06	10.70%	562.47	29.06	527.06	2.00	31.41	2.00	2678.83
477	17069128.25	688322.47	524.61	503.05	526.61	10.17%	562.14	21.56	524.61	2.00	33.53	2.00	2826.99
478	17069122.46	688346.79	522.51	509.85	524.51	8.84%	561.82	12.66	522.51	2.00	35.32	2.00	2952.07
479	17069116.67	688371.11	519.87	516.64	521.87	10.71%	561.52	3.22	519.87	2.00	37.65	2.00	3115.49
480	17069110.88	688395.43	517.67	---	513.75	33.31%	561.22	0.00	511.75	2.00	45.46	2.00	3662.50
481	17069105.09	688419.76	516.26	---	506.92	33.35%	560.93	0.00	504.92	2.00	52.01	2.00	4120.57
482	17069099.30	688444.08	514.73	---	500.08	33.35%	560.64	0.00	498.08	2.00	58.55	2.00	4578.60
483	17069093.51	688468.40	514.20	---	493.30	34.93%	560.35	0.00	491.30	2.00	65.05	2.00	5033.36
484	17069087.72	688492.72	513.53	---	486.27	34.90%	560.06	0.00	484.27	2.00	71.79	2.00	5505.30
485	17069081.93	688517.04	512.00	---	479.29	31.94%	559.60	0.00	477.29	2.00	78.31	2.00	5961.59
486	17069076.14	688541.36	510.97	---	472.29	34.83%	559.09	0.00	470.29	2.00	84.80	2.00	6415.90
487	17069070.35	688565.68	509.80	---	470.00	0.00%	558.57	0.00	468.00	2.00	86.57	2.00	6539.82
488	17069064.56	688590.00	508.78	---	470.00	0.00%	558.04	0.00	468.00	2.00	86.04	2.00	6502.64

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
489	17069058.77	688614.32	508.24	---	470.00	0.00%	557.65	0.00	468.00	2.00	85.65	2.00	6475.76
490	17069052.98	688638.64	508.70	---	470.00	0.00%	557.28	0.00	468.00	2.00	85.28	2.00	6449.76
491	17069047.20	688662.96	505.82	---	469.56	2.61%	556.92	0.00	467.56	2.00	85.36	2.00	6455.35
492	17069041.41	688687.28	506.31	---	469.26	2.07%	556.55	0.00	467.26	2.00	85.29	2.00	6450.36
493	17069035.62	688711.60	506.54	---	469.26	2.07%	556.19	0.00	467.26	2.00	84.93	2.00	6425.11
494	17069029.83	688735.92	506.85	---	469.26	2.07%	555.82	0.00	467.26	2.00	84.57	2.00	6399.71
495	17069024.04	688760.24	506.86	---	469.26	2.09%	554.26	0.00	467.26	2.00	83.01	2.00	6290.50
496	17069018.25	688784.56	507.38	---	469.26	2.09%	551.95	0.00	467.26	2.00	80.69	2.00	6128.27
497	17069012.46	688808.88	509.29	---	469.26	2.09%	548.49	0.00	467.26	2.00	77.23	2.00	5885.75
498	17069006.67	688833.20	515.86	---	469.86	15.39%	543.83	0.00	467.86	2.00	71.97	2.00	5518.12
499	17069000.88	688857.52	514.60	---	478.01	33.33%	538.24	0.00	476.01	2.00	58.24	2.00	4556.56
500	17068995.09	688881.84	507.43	---	486.31	33.33%	531.97	0.00	484.31	2.00	43.66	2.00	3536.07
501	17068989.30	688906.16	506.78	---	494.62	33.33%	525.89	0.00	492.62	2.00	29.28	2.00	2529.42
510	17069285.73	687768.90	519.35	---	519.88	33.33%	529.70	0.00	517.88	2.00	7.82	2.00	1027.67
511	17069279.94	687793.22	524.51	---	512.18	21.27%	535.98	0.00	510.18	2.00	21.79	2.00	2005.59
512	17069274.15	687817.54	529.85	---	510.57	13.61%	542.16	0.00	508.57	2.00	29.59	2.00	2551.48
513	17069268.36	687841.86	532.20	---	515.30	33.33%	548.39	0.00	513.30	2.00	31.09	2.00	2656.48
514	17069262.57	687866.18	535.02	---	523.02	33.33%	554.52	0.00	521.02	2.00	29.50	2.00	2545.15
515	17069256.78	687890.50	537.28	525.54	539.28	11.64%	560.39	11.73	537.28	2.00	19.12	2.00	1818.20
516	17069250.99	687914.82	538.80	517.88	540.80	5.89%	565.48	20.92	538.80	2.00	22.68	2.00	2067.75
517	17069245.20	687939.14	539.70	510.20	541.70	5.05%	569.05	29.49	539.70	2.00	25.35	2.00	2254.58
518	17069239.41	687963.46	540.25	502.54	542.25	2.47%	571.42	37.71	540.25	2.00	27.17	2.00	2381.99
519	17069233.63	687987.78	540.46	498.00	542.46	0.42%	571.75	42.46	540.46	2.00	27.29	2.00	2390.03
520	17069227.84	688012.10	540.47	498.00	542.47	2.05%	571.51	42.47	540.47	2.00	27.04	2.00	2372.58
521	17069222.05	688036.42	540.15	498.00	542.15	1.48%	571.24	42.15	540.15	2.00	27.09	2.00	2376.06
522	17069216.26	688060.74	539.22	498.00	541.22	8.01%	570.97	41.22	539.22	2.00	27.75	2.00	2422.40
523	17069210.47	688085.06	537.39	498.00	539.39	11.85%	570.72	39.39	537.39	2.00	29.33	2.00	2533.24
524	17069204.68	688109.38	535.50	498.00	537.50	6.69%	570.47	37.50	535.50	2.00	30.97	2.00	2647.58
525	17069198.89	688133.70	534.17	498.00	536.17	7.18%	570.21	36.17	534.17	2.00	32.04	2.00	2722.90
526	17069193.10	688158.02	533.72	498.00	535.72	3.00%	569.96	35.72	533.72	2.00	32.24	2.00	2737.14
527	17069187.31	688182.34	533.45	498.00	535.45	3.34%	569.65	35.45	533.45	2.00	32.20	2.00	2734.01
528	17069181.52	688206.66	533.01	498.00	535.01	3.95%	569.33	35.01	533.01	2.00	32.32	2.00	2742.21
529	17069175.73	688230.98	532.48	498.00	534.48	4.34%	569.02	34.48	532.48	2.00	32.53	2.00	2757.37
530	17069169.94	688255.30	531.66	498.00	533.66	6.75%	568.70	33.66	531.66	2.00	33.04	2.00	2792.79
531	17069164.15	688279.62	530.27	498.00	532.27	8.25%	568.39	32.27	530.27	2.00	34.11	2.00	2867.84
532	17069158.36	688303.94	527.93	498.00	529.93	10.59%	568.07	29.93	527.93	2.00	36.14	2.00	3009.95
533	17069152.57	688328.26	525.51	498.23	527.51	9.20%	567.78	27.28	525.51	2.00	38.27	2.00	3158.61
534	17069146.78	688352.58	523.30	505.03	525.30	9.80%	567.49	18.28	523.30	2.00	40.19	2.00	3293.35
535	17069140.99	688376.90	520.95	511.82	522.95	10.22%	567.20	9.13	520.95	2.00	42.25	2.00	3437.72
536	17069135.20	688401.22	519.04	517.53	521.04	8.41%	566.90	1.50	519.04	2.00	43.86	2.00	3550.28
537	17069129.41	688425.54	517.33	---	511.69	33.31%	566.58	0.00	509.69	2.00	52.90	2.00	4182.69
538	17069123.62	688449.87	516.36	---	504.85	33.31%	566.26	0.00	502.85	2.00	59.41	2.00	4638.69

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
539	17069117.83	688474.19	515.07	---	498.02	33.35%	565.95	0.00	496.02	2.00	65.92	2.00	5094.66
540	17069112.04	688498.51	513.22	---	491.10	32.11%	565.64	0.00	489.10	2.00	72.53	2.00	5557.22
541	17069106.25	688522.83	510.79	---	483.93	31.43%	565.31	0.00	481.93	2.00	79.38	2.00	6036.77
542	17069100.46	688547.15	508.45	---	476.75	34.84%	564.96	0.00	474.75	2.00	86.21	2.00	6514.66
543	17069094.67	688571.47	507.28	---	470.00	0.00%	564.62	0.00	468.00	2.00	92.62	2.00	6963.33
544	17069088.88	688595.79	506.24	---	470.00	0.00%	564.28	0.00	468.00	2.00	92.28	2.00	6939.33
545	17069083.09	688620.11	505.58	---	470.00	0.00%	563.92	0.00	468.00	2.00	91.92	2.00	6914.37
546	17069077.31	688644.43	505.91	---	469.68	2.61%	563.55	0.00	467.68	2.00	91.87	2.00	6911.10
547	17069071.52	688668.75	505.87	---	469.16	2.61%	563.18	0.00	467.16	2.00	92.02	2.00	6921.36
548	17069065.73	688693.07	503.66	---	468.75	2.07%	562.80	0.00	466.75	2.00	92.06	2.00	6923.93
549	17069059.94	688717.39	504.17	---	468.74	2.07%	562.29	0.00	466.74	2.00	91.55	2.00	6888.44
550	17069054.15	688741.71	506.04	---	468.74	2.07%	560.93	0.00	466.74	2.00	90.19	2.00	6793.29
551	17069048.36	688766.03	506.30	---	468.74	2.07%	558.03	0.00	466.74	2.00	87.30	2.00	6590.71
552	17069042.57	688790.35	506.84	---	468.74	2.09%	554.38	0.00	466.74	2.00	83.64	2.00	6334.72
553	17069036.78	688814.67	507.17	---	468.74	2.09%	549.94	0.00	466.74	2.00	79.20	2.00	6024.32
554	17069030.99	688838.99	511.19	---	470.38	33.33%	543.62	0.00	468.38	2.00	71.24	2.00	5466.89
555	17069025.20	688863.31	512.28	---	478.69	33.33%	537.52	0.00	476.69	2.00	56.83	2.00	4458.44
556	17069019.41	688887.63	507.06	---	486.99	33.33%	531.42	0.00	484.99	2.00	42.43	2.00	3449.79
557	17069013.62	688911.95	505.97	---	495.30	33.33%	525.18	0.00	493.30	2.00	27.89	2.00	2432.02
566	17069310.05	687774.68	515.41	---	517.90	33.33%	530.41	0.00	515.90	2.00	10.51	2.00	1215.87
567	17069304.26	687799.01	519.79	---	509.81	33.33%	536.63	0.00	507.81	2.00	24.83	2.00	2217.76
568	17069298.47	687823.33	526.41	---	507.14	14.97%	542.76	0.00	505.14	2.00	33.61	2.00	2833.00
569	17069292.68	687847.65	530.54	---	512.15	33.33%	548.83	0.00	510.15	2.00	34.68	2.00	2907.52
570	17069286.89	687871.97	532.57	---	519.87	33.33%	555.05	0.00	517.87	2.00	33.18	2.00	2802.75
571	17069281.10	687896.29	535.22	527.33	537.22	13.38%	561.13	7.89	535.22	2.00	21.92	2.00	2014.06
572	17069275.31	687920.61	537.64	521.15	539.64	12.75%	567.15	16.49	537.64	2.00	25.51	2.00	2265.83
573	17069269.52	687944.93	538.86	513.48	540.86	5.32%	572.34	25.38	538.86	2.00	29.48	2.00	2543.47
574	17069263.74	687969.25	540.00	505.82	542.00	1.28%	576.12	34.18	540.00	2.00	32.12	2.00	2728.39
575	17069257.95	687993.57	540.27	498.15	542.27	1.28%	577.80	42.12	540.27	2.00	33.52	2.00	2826.50
576	17069252.16	688017.89	540.55	498.00	542.55	1.28%	577.59	42.55	540.55	2.00	33.04	2.00	2793.02
577	17069246.37	688042.21	540.37	498.00	542.37	1.49%	577.27	42.37	540.37	2.00	32.90	2.00	2782.83
578	17069240.58	688066.53	540.07	498.00	542.07	1.49%	576.95	42.07	540.07	2.00	32.88	2.00	2781.82
579	17069234.79	688090.85	538.77	498.00	540.77	7.79%	576.66	40.77	538.77	2.00	33.88	2.00	2851.92
580	17069229.00	688115.17	537.04	498.00	539.04	10.46%	576.36	39.04	537.04	2.00	35.32	2.00	2952.56
581	17069223.21	688139.49	535.46	498.00	537.46	6.66%	576.07	37.46	535.46	2.00	36.61	2.00	3042.90
582	17069217.42	688163.81	534.79	498.00	536.79	5.38%	575.79	36.79	534.79	2.00	37.00	2.00	3070.08
583	17069211.63	688188.13	534.35	498.00	536.35	4.87%	575.51	36.35	534.35	2.00	37.16	2.00	3081.07
584	17069205.84	688212.45	533.92	498.00	535.92	4.11%	575.23	35.92	533.92	2.00	37.31	2.00	3091.62
585	17069200.05	688236.77	533.39	498.00	535.39	4.57%	574.93	35.39	533.39	2.00	37.54	2.00	3107.63
586	17069194.26	688261.09	532.72	498.00	534.72	5.56%	574.63	34.72	532.72	2.00	37.91	2.00	3133.55
587	17069188.47	688285.41	531.40	498.00	533.40	8.67%	574.33	33.40	531.40	2.00	38.93	2.00	3205.14
588	17069182.68	688309.73	529.31	498.00	531.31	13.38%	574.03	31.31	529.31	2.00	40.72	2.00	3330.39

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
589	17069176.89	688334.05	526.82	498.00	528.82	12.23%	573.73	28.82	526.82	2.00	42.91	2.00	3483.90
590	17069171.10	688358.37	524.53	500.20	526.53	12.39%	573.43	24.33	524.53	2.00	44.90	2.00	3623.14
591	17069165.31	688382.69	522.36	507.00	524.36	9.15%	573.14	15.36	522.36	2.00	46.78	2.00	3754.56
592	17069159.52	688407.01	520.25	513.80	522.25	10.44%	572.84	6.45	520.25	2.00	48.59	2.00	3881.35
593	17069153.73	688431.33	518.22	515.93	520.22	9.70%	572.54	2.28	518.22	2.00	50.32	2.00	4002.48
594	17069147.94	688455.65	516.82	---	509.62	33.31%	572.24	0.00	507.62	2.00	60.62	2.00	4723.42
595	17069142.15	688479.98	515.08	---	502.48	33.39%	571.95	0.00	500.48	2.00	67.47	2.00	5202.88
596	17069136.36	688504.30	512.64	---	495.34	34.51%	571.72	0.00	493.34	2.00	74.38	2.00	5686.38
597	17069130.57	688528.62	509.26	---	488.33	39.31%	571.48	0.00	486.33	2.00	81.15	2.00	6160.38
598	17069124.78	688552.94	507.11	---	481.34	32.62%	571.24	0.00	479.34	2.00	87.90	2.00	6632.95
599	17069118.99	688577.26	505.69	---	474.09	34.83%	571.02	0.00	472.09	2.00	94.93	2.00	7125.42
600	17069113.20	688601.58	504.85	---	470.00	0.00%	570.80	0.00	468.00	2.00	98.80	2.00	7395.85
601	17069107.42	688625.90	503.75	---	469.80	2.61%	570.58	0.00	467.80	2.00	98.78	2.00	7394.52
602	17069101.63	688650.22	503.41	---	469.28	2.61%	570.36	0.00	467.28	2.00	99.08	2.00	7415.34
603	17069095.84	688674.54	503.76	---	468.76	2.61%	570.14	0.00	466.76	2.00	99.37	2.00	7436.21
604	17069090.05	688698.86	504.66	---	468.25	2.61%	569.30	0.00	466.25	2.00	99.05	2.00	7413.61
605	17069084.26	688723.18	504.32	---	468.23	2.07%	566.94	0.00	466.23	2.00	96.72	2.00	7250.21
606	17069078.47	688747.50	502.44	---	468.22	2.07%	564.00	0.00	466.22	2.00	93.78	2.00	7044.70
607	17069072.68	688771.82	504.00	---	468.22	2.07%	560.47	0.00	466.22	2.00	90.25	2.00	6797.53
608	17069066.89	688796.14	505.99	---	468.22	2.07%	555.28	0.00	466.22	2.00	85.06	2.00	6434.21
609	17069061.10	688820.46	505.24	---	468.22	2.09%	549.29	0.00	466.22	2.00	79.08	2.00	6015.36
610	17069055.31	688844.78	506.00	---	471.06	33.33%	542.93	0.00	469.06	2.00	69.86	2.00	5370.46
611	17069049.52	688869.10	505.91	---	479.37	33.33%	536.81	0.00	477.37	2.00	55.44	2.00	4360.84
612	17069043.73	688893.42	505.65	---	487.67	33.33%	530.86	0.00	485.67	2.00	41.19	2.00	3363.34
613	17069037.94	688917.74	505.48	---	495.98	33.33%	524.48	0.00	493.98	2.00	26.50	2.00	2334.91
622	17069334.37	687780.47	511.73	---	515.93	33.33%	531.13	0.00	513.93	2.00	13.20	2.00	1404.18
623	17069328.58	687804.79	515.94	---	507.83	33.33%	537.31	0.00	505.83	2.00	27.48	2.00	2403.38
624	17069322.79	687829.12	522.65	---	503.81	13.81%	543.43	0.00	501.81	2.00	37.62	2.00	3113.40
625	17069317.00	687853.44	528.06	---	509.00	33.33%	549.46	0.00	507.00	2.00	38.46	2.00	3172.20
626	17069311.21	687877.76	530.78	---	516.71	33.33%	555.74	0.00	514.71	2.00	37.03	2.00	3072.12
627	17069305.42	687902.08	532.94	524.41	534.94	13.82%	561.93	8.53	532.94	2.00	24.99	2.00	2229.39
628	17069299.63	687926.40	535.46	524.42	537.46	13.34%	567.94	11.03	535.46	2.00	28.48	2.00	2473.59
629	17069293.85	687950.72	537.95	516.76	539.95	12.64%	573.98	21.20	537.95	2.00	32.03	2.00	2722.02
630	17069288.06	687975.04	539.21	509.09	541.21	6.03%	579.64	30.12	539.21	2.00	36.43	2.00	3030.11
631	17069282.27	687999.36	540.11	501.43	542.11	1.28%	582.97	38.68	540.11	2.00	38.86	2.00	3200.54
632	17069276.48	688023.68	540.36	498.00	542.36	1.19%	583.40	42.36	540.36	2.00	39.04	2.00	3212.63
633	17069270.69	688048.00	540.43	498.00	542.43	0.54%	583.47	42.43	540.43	2.00	39.04	2.00	3212.65
634	17069264.90	688072.32	540.27	498.00	542.27	1.08%	583.17	42.27	540.27	2.00	38.90	2.00	3203.18
635	17069259.11	688096.64	539.90	498.00	541.90	7.30%	582.87	41.90	539.90	2.00	38.98	2.00	3208.32
636	17069253.32	688120.96	538.51	498.00	540.51	6.89%	582.58	40.51	538.51	2.00	40.06	2.00	3284.33
637	17069247.53	688145.28	537.14	498.00	539.14	10.64%	582.28	39.14	537.14	2.00	41.14	2.00	3359.86
638	17069241.74	688169.60	535.82	498.00	537.82	4.72%	581.98	37.82	535.82	2.00	42.16	2.00	3431.17

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
639	17069235.95	688193.92	535.52	498.00	537.52	4.88%	581.73	37.52	535.52	2.00	42.20	2.00	3434.24
640	17069230.16	688218.24	535.08	498.00	537.08	5.45%	581.47	37.08	535.08	2.00	42.39	2.00	3447.17
641	17069224.37	688242.56	534.53	498.00	536.53	5.73%	581.21	36.53	534.53	2.00	42.68	2.00	3467.69
642	17069218.58	688266.88	533.81	498.00	535.81	6.01%	580.96	35.81	533.81	2.00	43.15	2.00	3500.30
643	17069212.79	688291.20	532.61	498.00	534.61	7.24%	580.71	34.61	532.61	2.00	44.11	2.00	3567.40
644	17069207.00	688315.52	531.01	498.00	533.01	9.94%	580.48	33.01	531.01	2.00	45.47	2.00	3662.79
645	17069201.21	688339.84	528.90	498.00	530.90	12.61%	580.24	30.90	528.90	2.00	47.34	2.00	3793.82
646	17069195.42	688364.16	526.39	498.00	528.39	13.78%	580.00	28.39	526.39	2.00	49.62	2.00	3953.21
647	17069189.63	688388.48	523.56	502.26	525.56	8.57%	579.65	21.30	523.56	2.00	52.09	2.00	4126.28
648	17069183.84	688412.80	521.66	509.39	523.66	10.40%	579.28	12.27	521.66	2.00	53.62	2.00	4233.42
649	17069178.05	688437.12	519.40	516.53	521.40	11.53%	578.90	2.87	519.40	2.00	55.50	2.00	4365.13
650	17069172.26	688461.44	517.32	---	513.93	33.27%	578.51	0.00	511.93	2.00	62.58	2.00	4860.87
651	17069166.47	688485.76	515.21	---	506.77	33.39%	578.13	0.00	504.77	2.00	69.36	2.00	5334.97
652	17069160.68	688510.09	512.66	---	499.73	33.38%	577.80	0.00	497.73	2.00	76.07	2.00	5805.08
653	17069154.89	688534.41	509.39	---	492.49	34.89%	577.50	0.00	490.49	2.00	83.01	2.00	6290.86
654	17069149.10	688558.73	506.85	---	485.33	31.94%	577.20	0.00	483.33	2.00	89.87	2.00	6770.86
655	17069143.31	688583.05	505.29	---	478.24	39.92%	576.89	0.00	476.24	2.00	96.65	2.00	7245.47
656	17069137.53	688607.37	504.14	---	471.16	31.86%	576.56	0.00	469.16	2.00	103.40	2.00	7718.20
657	17069131.74	688631.69	502.75	---	469.61	2.14%	576.23	0.00	467.61	2.00	104.62	2.00	7803.59
658	17069125.95	688656.01	501.67	---	469.14	2.14%	575.91	0.00	467.14	2.00	104.77	2.00	7813.77
659	17069120.16	688680.33	501.06	---	468.68	2.14%	575.51	0.00	466.68	2.00	104.84	2.00	7818.59
660	17069114.37	688704.65	501.70	---	468.24	2.00%	573.79	0.00	466.24	2.00	103.55	2.00	7728.58
661	17069108.58	688728.97	502.66	---	468.00	0.00%	570.56	0.00	466.00	2.00	100.56	2.00	7519.38
662	17069102.79	688753.29	503.70	---	468.00	0.00%	565.94	0.00	466.00	2.00	95.94	2.00	7196.04
663	17069097.00	688777.61	503.34	---	468.00	0.00%	560.94	0.00	466.00	2.00	90.94	2.00	6845.85
664	17069091.21	688801.93	502.00	---	468.00	0.00%	554.69	0.00	466.00	2.00	84.69	2.00	6408.50
665	17069085.42	688826.25	502.69	---	468.00	0.00%	548.48	0.00	466.00	2.00	78.48	2.00	5973.53
666	17069079.63	688850.57	504.43	---	471.75	33.33%	542.23	0.00	469.75	2.00	68.49	2.00	5274.19
667	17069073.84	688874.89	505.69	---	480.05	33.33%	536.10	0.00	478.05	2.00	54.05	2.00	4263.24
668	17069068.05	688899.21	505.30	---	488.36	33.33%	530.19	0.00	486.36	2.00	39.83	2.00	3268.35
669	17069062.26	688923.53	504.87	---	496.66	33.33%	523.77	0.00	494.66	2.00	25.11	2.00	2237.84
678	17069358.69	687786.26	508.46	---	513.95	33.33%	531.85	0.00	511.95	2.00	15.90	2.00	1592.79
679	17069352.90	687810.58	511.88	---	505.85	33.33%	537.98	0.00	503.85	2.00	30.13	2.00	2588.99
680	17069347.11	687834.90	518.14	---	500.43	12.99%	544.11	0.00	498.43	2.00	41.68	2.00	3397.33
681	17069341.32	687859.23	524.32	---	505.85	33.33%	550.10	0.00	503.85	2.00	42.25	2.00	3437.42
682	17069335.53	687883.55	528.81	---	513.56	33.33%	556.42	0.00	511.56	2.00	40.85	2.00	3339.82
683	17069329.74	687907.87	530.25	---	521.28	33.33%	562.60	0.00	519.28	2.00	39.32	2.00	3232.30
684	17069323.96	687932.19	533.25	527.70	535.25	14.61%	568.57	5.55	533.25	2.00	31.32	2.00	2672.22
685	17069318.17	687956.51	536.15	520.03	538.15	12.38%	574.74	16.12	536.15	2.00	34.59	2.00	2901.13
686	17069312.38	687980.83	538.38	512.40	540.38	6.35%	580.68	25.98	538.38	2.00	38.30	2.00	3161.04
687	17069306.59	688005.15	539.68	505.02	541.68	6.35%	586.00	34.66	539.68	2.00	42.32	2.00	3442.41
688	17069300.80	688029.47	540.17	498.00	542.17	1.19%	589.00	42.17	540.17	2.00	44.82	2.00	3617.65

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
689	17069295.01	688053.79	540.35	498.00	542.35	0.47%	589.81	42.35	540.35	2.00	45.46	2.00	3661.99
690	17069289.22	688078.11	540.25	498.00	542.25	0.54%	589.49	42.25	540.25	2.00	45.24	2.00	3646.68
691	17069283.43	688102.43	540.13	498.00	542.13	0.94%	589.17	42.13	540.13	2.00	45.04	2.00	3632.77
692	17069277.64	688126.75	539.41	498.00	541.41	5.23%	588.84	41.41	539.41	2.00	45.43	2.00	3659.95
693	17069271.85	688151.07	538.46	498.00	540.46	4.55%	588.50	40.46	538.46	2.00	46.03	2.00	3702.43
694	17069266.06	688175.39	537.93	498.00	539.93	9.34%	588.16	39.93	537.93	2.00	46.23	2.00	3716.19
695	17069260.27	688199.71	537.46	498.00	539.46	10.17%	587.84	39.46	537.46	2.00	46.38	2.00	3726.57
696	17069254.48	688224.03	536.70	498.00	538.70	9.25%	587.54	38.70	536.70	2.00	46.84	2.00	3758.78
697	17069248.69	688248.35	535.64	498.00	537.64	5.17%	587.24	37.64	535.64	2.00	47.60	2.00	3812.06
698	17069242.90	688272.67	534.84	498.00	536.84	5.28%	586.94	36.84	534.84	2.00	48.10	2.00	3847.32
699	17069237.11	688296.99	533.87	498.00	535.87	7.33%	586.64	35.87	533.87	2.00	48.78	2.00	3894.32
700	17069231.32	688321.31	532.53	498.00	534.53	7.20%	586.34	34.53	532.53	2.00	49.82	2.00	3967.11
701	17069225.53	688345.63	530.76	498.00	532.76	10.95%	586.04	32.76	530.76	2.00	51.28	2.00	4069.82
702	17069219.74	688369.95	528.27	498.00	530.27	13.01%	585.75	30.27	528.27	2.00	53.48	2.00	4223.50
703	17069213.95	688394.27	525.19	498.00	527.19	14.81%	585.45	27.19	525.19	2.00	56.25	2.00	4417.79
704	17069208.16	688418.59	522.88	505.09	524.88	8.75%	585.15	17.80	522.88	2.00	58.26	2.00	4558.49
705	17069202.37	688442.91	520.77	512.23	522.77	11.62%	584.85	8.55	520.77	2.00	60.08	2.00	4685.33
706	17069196.58	688467.23	518.27	517.02	520.27	11.26%	584.55	1.26	518.27	2.00	62.28	2.00	4839.50
707	17069190.79	688491.55	515.64	---	511.14	29.94%	584.25	0.00	509.14	2.00	71.11	2.00	5457.64
708	17069185.00	688515.87	513.62	---	503.90	33.27%	583.95	0.00	501.90	2.00	78.06	2.00	5944.04
709	17069179.21	688540.20	510.90	---	496.75	33.27%	583.66	0.00	494.75	2.00	84.90	2.00	6423.15
710	17069173.42	688564.52	507.83	---	489.77	39.31%	583.36	0.00	487.77	2.00	91.59	2.00	6891.29
711	17069167.64	688588.84	505.56	---	482.22	35.44%	583.06	0.00	480.22	2.00	98.84	2.00	7398.84
712	17069161.85	688613.16	503.94	---	474.97	31.98%	582.76	0.00	472.97	2.00	105.79	2.00	7885.55
713	17069156.06	688637.48	502.01	---	469.87	2.13%	582.44	0.00	467.87	2.00	110.58	2.00	8220.30
714	17069150.27	688661.80	499.52	---	469.40	2.13%	581.99	0.00	467.40	2.00	110.60	2.00	8221.73
715	17069144.48	688686.12	498.27	---	468.94	2.00%	581.03	0.00	466.94	2.00	110.09	2.00	8186.20
716	17069138.69	688710.44	498.00	---	468.57	2.00%	577.08	0.00	466.57	2.00	106.51	2.00	7935.75
717	17069132.90	688734.76	498.42	---	468.24	2.41%	571.98	0.00	466.24	2.00	101.74	2.00	7601.53
718	17069127.11	688759.08	499.81	---	468.00	0.00%	566.22	0.00	466.00	2.00	96.22	2.00	7215.74
719	17069121.32	688783.40	502.14	---	468.00	0.00%	560.40	0.00	466.00	2.00	90.40	2.00	6808.31
720	17069115.53	688807.72	503.15	---	468.00	0.00%	553.96	0.00	466.00	2.00	83.96	2.00	6357.54
721	17069109.74	688832.04	502.23	---	468.00	0.00%	547.71	0.00	466.00	2.00	77.71	2.00	5919.47
722	17069103.95	688856.36	501.41	---	472.43	33.33%	541.61	0.00	470.43	2.00	67.18	2.00	5182.78
723	17069098.16	688880.68	501.77	---	480.73	33.33%	535.39	0.00	478.73	2.00	52.66	2.00	4166.00
724	17069092.37	688905.00	504.08	---	489.04	33.33%	529.44	0.00	487.04	2.00	38.40	2.00	3168.03
725	17069086.58	688929.32	504.36	---	497.34	33.33%	523.07	0.00	495.34	2.00	23.73	2.00	2140.94
733	17069388.80	687767.73	507.02	---	520.05	24.95%	525.74	0.00	518.05	2.00	3.69	2.00	738.31
734	17069383.01	687792.05	504.30	---	511.97	33.33%	532.53	0.00	509.97	2.00	18.56	2.00	1779.10
735	17069377.22	687816.37	507.79	---	503.88	33.33%	538.61	0.00	501.88	2.00	32.73	2.00	2771.18
736	17069371.43	687840.69	513.51	---	497.10	14.40%	544.78	0.00	495.10	2.00	45.68	2.00	3677.52
737	17069365.64	687865.01	520.06	---	502.70	33.33%	550.82	0.00	500.70	2.00	46.12	2.00	3708.53

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
738	17069359.85	687889.34	525.81	---	510.41	33.33%	557.07	0.00	508.41	2.00	44.66	2.00	3605.98
739	17069354.07	687913.66	528.76	---	518.13	33.33%	563.22	0.00	516.13	2.00	43.10	2.00	3496.68
740	17069348.28	687937.98	530.74	525.56	532.74	16.12%	569.19	5.18	530.74	2.00	34.45	2.00	2891.79
741	17069342.49	687962.30	534.20	523.65	536.20	14.75%	575.41	10.55	534.20	2.00	37.21	2.00	3084.95
742	17069336.70	687986.62	537.03	516.28	539.03	11.92%	581.50	20.75	537.03	2.00	40.47	2.00	3312.77
743	17069330.91	688010.94	538.75	508.91	540.75	6.10%	587.64	29.84	538.75	2.00	44.89	2.00	3622.62
744	17069325.12	688035.26	539.92	501.65	541.92	6.04%	592.68	38.27	539.92	2.00	48.76	2.00	3893.21
745	17069319.33	688059.58	540.21	498.00	542.21	1.16%	594.99	42.21	540.21	2.00	50.79	2.00	4035.12
746	17069313.54	688083.90	540.16	498.00	542.16	0.58%	595.46	42.16	540.16	2.00	51.30	2.00	4071.09
747	17069307.75	688108.22	540.06	498.00	542.06	0.54%	595.19	42.06	540.06	2.00	51.12	2.00	4058.72
748	17069301.96	688132.54	539.78	498.00	541.78	5.11%	594.89	41.78	539.78	2.00	51.11	2.00	4057.81
749	17069296.17	688156.86	539.30	498.00	541.30	4.85%	594.59	41.30	539.30	2.00	51.28	2.00	4069.93
750	17069290.38	688181.18	539.41	498.00	541.41	6.36%	594.29	41.41	539.41	2.00	50.88	2.00	4041.37
751	17069284.59	688205.50	539.23	498.00	541.23	6.70%	593.99	41.23	539.23	2.00	50.76	2.00	4033.53
752	17069278.80	688229.82	538.64	498.00	540.64	7.65%	593.69	40.64	538.64	2.00	51.05	2.00	4053.70
753	17069273.01	688254.14	537.50	498.00	539.50	11.74%	593.40	39.50	537.50	2.00	51.90	2.00	4112.76
754	17069267.22	688278.46	536.20	498.00	538.20	9.67%	593.10	38.20	536.20	2.00	52.89	2.00	4182.49
755	17069261.43	688302.78	535.05	498.00	537.05	7.09%	592.80	37.05	535.05	2.00	53.75	2.00	4242.24
756	17069255.64	688327.10	533.71	498.00	535.71	7.14%	592.50	35.71	533.71	2.00	54.79	2.00	4315.20
757	17069249.85	688351.42	532.20	498.00	534.20	7.26%	592.20	34.20	532.20	2.00	56.01	2.00	4400.36
758	17069244.06	688375.74	529.91	498.00	531.91	12.28%	591.92	31.91	529.91	2.00	58.00	2.00	4540.28
759	17069238.27	688400.06	527.22	498.00	529.22	14.22%	591.68	29.23	527.22	2.00	60.46	2.00	4712.16
760	17069232.48	688424.38	524.39	500.79	526.39	13.42%	591.45	23.60	524.39	2.00	63.06	2.00	4894.25
761	17069226.69	688448.70	522.36	507.92	524.36	10.00%	591.21	14.44	522.36	2.00	64.85	2.00	5019.28
762	17069220.90	688473.02	519.80	515.05	521.80	13.63%	590.98	4.74	519.80	2.00	67.18	2.00	5182.50
763	17069215.11	688497.34	517.04	514.95	519.04	12.73%	590.74	2.09	517.04	2.00	69.70	2.00	5359.32
764	17069209.32	688521.66	515.10	---	508.19	37.50%	590.51	0.00	506.19	2.00	80.31	2.00	6101.81
765	17069203.53	688545.98	513.46	---	501.12	30.09%	590.27	0.00	499.12	2.00	87.15	2.00	6580.27
766	17069197.75	688570.31	509.88	---	493.81	32.29%	590.04	0.00	491.81	2.00	94.23	2.00	7075.81
767	17069191.96	688594.63	506.49	---	486.45	34.86%	589.68	0.00	484.45	2.00	101.23	2.00	7566.28
768	17069186.17	688618.95	504.06	---	479.12	39.92%	589.27	0.00	477.12	2.00	108.15	2.00	8050.75
769	17069180.38	688643.27	500.91	---	471.61	28.92%	588.77	0.00	469.61	2.00	115.16	2.00	8541.16
770	17069174.59	688667.59	498.00	---	469.65	2.00%	586.99	0.00	467.65	2.00	115.34	2.00	8553.49
771	17069168.80	688691.91	498.00	---	469.28	2.00%	583.29	0.00	467.28	2.00	112.02	2.00	8321.16
772	17069163.01	688716.23	498.00	---	468.91	2.00%	578.12	0.00	466.91	2.00	107.21	2.00	7984.88
773	17069157.22	688740.55	498.00	---	468.64	2.41%	571.95	0.00	466.64	2.00	101.31	2.00	7571.37
774	17069151.43	688764.87	498.00	---	468.19	2.41%	565.78	0.00	466.19	2.00	95.59	2.00	7170.96
775	17069145.64	688789.19	498.00	---	468.00	0.00%	560.02	0.00	466.00	2.00	90.02	2.00	6781.10
776	17069139.85	688813.51	499.79	---	468.00	0.00%	553.49	0.00	466.00	2.00	83.49	2.00	6324.06
777	17069134.06	688837.83	502.34	---	468.00	0.00%	547.30	0.00	466.00	2.00	77.30	2.00	5891.34
778	17069128.27	688862.15	502.63	---	473.11	33.33%	541.30	0.00	471.11	2.00	66.19	2.00	5113.08
779	17069122.48	688886.47	502.12	---	481.41	33.33%	534.99	0.00	479.41	2.00	51.58	2.00	4090.57

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
780	17069116.69	688910.79	500.94	---	489.72	33.33%	529.06	0.00	487.72	2.00	37.34	2.00	3094.09
781	17069110.90	688935.11	503.00	---	498.02	33.33%	522.68	0.00	496.02	2.00	22.65	2.00	2065.77
789	17069413.12	687773.52	504.40	---	518.09	33.33%	526.54	0.00	516.09	2.00	6.45	2.00	931.28
790	17069407.33	687797.84	500.59	---	509.99	33.33%	533.20	0.00	507.99	2.00	21.21	2.00	1964.71
791	17069401.54	687822.16	503.18	---	501.90	33.33%	539.23	0.00	499.90	2.00	35.34	2.00	2953.50
792	17069395.75	687846.48	509.01	---	494.22	14.51%	545.46	0.00	492.22	2.00	49.23	2.00	3926.30
793	17069389.96	687870.80	515.29	---	499.55	33.33%	551.55	0.00	497.55	2.00	50.00	2.00	3980.15
794	17069384.18	687895.12	521.54	---	507.26	33.33%	557.72	0.00	505.26	2.00	48.46	2.00	3872.14
795	17069378.39	687919.45	526.59	---	514.93	33.41%	563.85	0.00	512.93	2.00	46.91	2.00	3763.92
796	17069372.60	687943.77	528.28	---	522.23	33.33%	569.81	0.00	520.23	2.00	45.58	2.00	3670.33
797	17069366.81	687968.09	531.54	527.54	533.54	17.94%	576.09	4.00	531.54	2.00	40.55	2.00	3318.72
798	17069361.02	687992.41	534.90	520.26	536.90	15.68%	582.22	14.65	534.90	2.00	43.31	2.00	3511.75
799	17069355.23	688016.73	537.57	513.05	539.57	12.32%	588.31	24.52	537.57	2.00	46.74	2.00	3752.02
800	17069349.44	688041.05	538.96	505.85	540.96	5.98%	594.16	33.12	538.96	2.00	51.20	2.00	4064.01
801	17069343.65	688065.37	540.02	498.64	542.02	1.16%	598.97	41.37	540.02	2.00	54.96	2.00	4326.86
802	17069337.86	688089.69	540.08	498.00	542.08	0.58%	601.35	42.08	540.08	2.00	57.27	2.00	4488.60
803	17069332.07	688114.01	539.97	498.00	541.97	0.37%	601.38	41.97	539.97	2.00	57.41	2.00	4498.74
804	17069326.28	688138.33	539.96	498.00	541.96	0.62%	601.14	41.96	539.96	2.00	57.18	2.00	4482.81
805	17069320.49	688162.65	540.07	498.00	542.07	0.69%	600.88	42.07	540.07	2.00	56.81	2.00	4456.92
806	17069314.70	688186.97	540.11	498.00	542.11	0.69%	600.63	42.11	540.11	2.00	56.52	2.00	4436.59
807	17069308.91	688211.29	540.08	498.00	542.08	1.19%	600.38	42.08	540.08	2.00	56.29	2.00	4420.56
808	17069303.12	688235.61	540.02	498.00	542.02	0.63%	600.13	42.02	540.02	2.00	56.11	2.00	4407.36
809	17069297.33	688259.93	539.48	498.00	541.48	9.34%	599.84	41.48	539.48	2.00	56.36	2.00	4425.15
810	17069291.54	688284.25	538.18	498.00	540.18	7.69%	599.50	40.18	538.18	2.00	57.32	2.00	4492.24
811	17069285.75	688308.57	536.83	498.00	538.83	10.17%	599.16	38.83	536.83	2.00	58.33	2.00	4563.04
812	17069279.96	688332.89	535.01	498.00	537.01	10.52%	598.80	37.01	535.01	2.00	59.80	2.00	4665.75
813	17069274.17	688357.21	533.08	498.00	535.08	8.41%	598.44	35.08	533.08	2.00	61.35	2.00	4774.79
814	17069268.38	688381.53	531.18	498.00	533.18	10.37%	598.07	33.18	531.18	2.00	62.89	2.00	4882.50
815	17069262.59	688405.85	528.91	497.99	530.91	11.19%	597.76	30.92	528.91	2.00	64.85	2.00	5019.26
816	17069256.80	688430.17	526.43	497.99	528.43	12.57%	597.46	28.44	526.43	2.00	67.04	2.00	5172.45
817	17069251.01	688454.49	524.34	503.61	526.34	12.55%	597.16	20.72	524.34	2.00	68.83	2.00	5297.75
818	17069245.22	688478.81	521.96	510.75	523.96	15.31%	596.86	11.21	521.96	2.00	70.90	2.00	5443.22
819	17069239.43	688503.13	519.10	517.91	521.10	14.31%	596.57	1.19	519.10	2.00	73.46	2.00	5622.40
820	17069233.64	688527.45	516.87	---	512.44	33.27%	596.27	0.00	510.44	2.00	81.82	2.00	6207.62
821	17069227.86	688551.77	515.35	---	505.12	33.40%	595.97	0.00	503.12	2.00	88.85	2.00	6699.70
822	17069222.07	688576.09	512.57	---	497.72	33.34%	595.67	0.00	495.72	2.00	95.95	2.00	7196.79
823	17069216.28	688600.42	508.24	---	490.34	33.34%	595.35	0.00	488.34	2.00	103.01	2.00	7690.81
824	17069210.49	688624.74	504.61	---	483.07	32.67%	594.63	0.00	481.07	2.00	109.56	2.00	8148.93
825	17069204.70	688649.06	500.85	---	475.57	34.80%	593.27	0.00	473.57	2.00	115.70	2.00	8578.68
826	17069198.91	688673.38	498.00	---	469.98	2.00%	589.97	0.00	467.98	2.00	117.99	2.00	8739.22
827	17069193.12	688697.70	498.00	---	469.61	2.00%	583.73	0.00	467.61	2.00	112.12	2.00	8328.09
828	17069187.33	688722.02	498.00	---	469.24	2.00%	577.83	0.00	467.24	2.00	106.59	2.00	7941.08

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
829	17069181.54	688746.34	498.00	---	469.04	1.19%	571.72	0.00	467.04	2.00	100.69	2.00	7528.14
830	17069175.75	688770.66	498.00	---	468.60	2.41%	565.51	0.00	466.60	2.00	94.91	2.00	7124.00
831	17069169.96	688794.98	498.00	---	468.15	2.41%	559.69	0.00	466.15	2.00	89.54	2.00	6748.13
832	17069164.17	688819.30	498.00	---	468.00	0.00%	553.20	0.00	466.00	2.00	83.20	2.00	6303.75
833	17069158.38	688843.62	498.04	---	468.00	0.00%	547.04	0.00	466.00	2.00	77.04	2.00	5872.72
834	17069152.59	688867.94	501.15	---	473.79	33.33%	541.08	0.00	471.79	2.00	65.28	2.00	5049.94
835	17069146.80	688892.26	502.13	---	482.10	33.33%	534.72	0.00	480.10	2.00	50.63	2.00	4023.97
836	17069141.01	688916.58	503.37	---	490.40	33.33%	528.72	0.00	488.40	2.00	36.32	2.00	3022.50
837	17069135.22	688940.90	502.00	---	498.71	33.33%	522.41	0.00	496.71	2.00	21.70	2.00	1999.17
845	17069437.44	687779.31	502.24	---	516.11	33.33%	527.38	0.00	514.11	2.00	9.26	2.00	1128.41
846	17069431.65	687803.63	496.16	---	508.02	33.33%	533.88	0.00	506.02	2.00	23.86	2.00	2150.33
847	17069425.86	687827.95	498.83	---	499.92	33.33%	539.86	0.00	497.92	2.00	37.94	2.00	3135.82
848	17069420.07	687852.27	503.96	---	491.83	33.33%	546.13	0.00	489.83	2.00	52.31	2.00	4141.37
849	17069414.29	687876.59	510.47	---	496.26	33.41%	552.26	0.00	494.26	2.00	54.00	2.00	4260.06
850	17069408.50	687900.91	517.12	---	503.63	33.33%	558.35	0.00	501.63	2.00	52.72	2.00	4170.29
851	17069402.71	687925.23	523.32	---	510.84	33.33%	564.51	0.00	508.84	2.00	51.67	2.00	4096.80
852	17069396.92	687949.56	526.88	---	518.05	33.33%	570.50	0.00	516.05	2.00	50.45	2.00	4011.63
853	17069391.13	687973.88	528.95	525.02	530.95	16.85%	576.76	3.93	528.95	2.00	43.81	2.00	3546.90
854	17069385.34	687998.20	532.26	524.44	534.26	17.15%	582.89	7.82	532.26	2.00	46.63	2.00	3743.93
855	17069379.55	688022.52	535.73	517.24	537.73	17.39%	588.92	18.49	535.73	2.00	49.20	2.00	3923.90
856	17069373.76	688046.84	538.11	510.04	540.11	5.75%	595.12	28.07	538.11	2.00	53.02	2.00	4191.10
857	17069367.97	688071.16	539.22	502.83	541.22	5.27%	601.04	36.39	539.22	2.00	57.82	2.00	4527.48
858	17069362.18	688095.48	539.68	498.00	541.68	6.21%	605.50	41.68	539.68	2.00	61.83	2.00	4808.02
859	17069356.39	688119.80	539.81	498.00	541.81	6.74%	607.05	41.81	539.81	2.00	63.24	2.00	4906.53
860	17069350.60	688144.12	540.02	498.00	542.02	0.74%	607.20	42.02	540.02	2.00	63.18	2.00	4902.61
861	17069344.81	688168.44	540.18	498.00	542.18	0.72%	606.90	42.18	540.18	2.00	62.72	2.00	4870.62
862	17069339.02	688192.76	540.28	498.00	542.28	0.69%	606.60	42.28	540.28	2.00	62.32	2.00	4842.56
863	17069333.23	688217.08	540.23	498.00	542.23	0.68%	606.30	42.23	540.23	2.00	62.07	2.00	4824.96
864	17069327.44	688241.40	540.15	498.00	542.15	0.49%	606.01	42.15	540.15	2.00	61.85	2.00	4809.77
865	17069321.65	688265.72	540.06	498.00	542.06	0.47%	605.71	42.06	540.06	2.00	61.65	2.00	4795.18
866	17069315.86	688290.04	539.57	498.00	541.57	7.01%	605.41	41.57	539.57	2.00	61.84	2.00	4808.84
867	17069310.07	688314.36	538.42	498.00	540.42	6.08%	605.11	40.42	538.42	2.00	62.69	2.00	4868.59
868	17069304.28	688338.68	536.56	498.00	538.56	12.38%	604.81	38.56	536.56	2.00	64.25	2.00	4977.35
869	17069298.49	688363.00	534.43	498.00	536.43	10.12%	604.51	36.43	534.43	2.00	66.08	2.00	5105.49
870	17069292.70	688387.32	532.68	497.99	534.68	10.48%	604.21	34.69	532.68	2.00	67.53	2.00	5207.21
871	17069286.91	688411.64	530.45	497.99	532.45	11.06%	603.92	32.46	530.45	2.00	69.47	2.00	5342.75
872	17069281.12	688435.96	528.55	497.99	530.55	10.77%	603.62	30.56	528.55	2.00	71.06	2.00	5454.52
873	17069275.33	688460.28	526.65	499.31	528.65	11.37%	603.32	27.34	526.65	2.00	72.67	2.00	5566.59
874	17069269.54	688484.60	524.22	506.54	526.22	14.37%	603.02	17.69	524.22	2.00	74.80	2.00	5715.73
875	17069263.75	688508.92	521.53	513.72	523.53	14.35%	602.72	7.81	521.53	2.00	77.19	2.00	5883.14
876	17069257.97	688533.24	519.01	515.90	521.01	12.81%	602.42	3.11	519.01	2.00	79.41	2.00	6038.83
877	17069252.18	688557.56	517.03	---	508.98	33.55%	602.12	0.00	506.98	2.00	91.15	2.00	6860.21

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
878	17069246.39	688581.88	514.98	---	501.58	33.04%	601.83	0.00	499.58	2.00	98.25	2.00	7357.70
879	17069240.60	688606.20	510.91	---	494.17	34.22%	601.43	0.00	492.17	2.00	105.26	2.00	7848.12
880	17069234.81	688630.53	506.34	---	486.83	33.34%	599.93	0.00	484.83	2.00	111.10	2.00	8257.20
881	17069229.02	688654.85	501.85	---	479.41	33.33%	595.25	0.00	477.41	2.00	113.83	2.00	8448.34
882	17069223.23	688679.17	498.00	---	471.97	4.64%	590.21	0.00	469.97	2.00	116.23	2.00	8616.29
883	17069217.44	688703.49	498.00	---	469.95	2.00%	583.71	0.00	467.95	2.00	111.77	2.00	8303.81
884	17069211.65	688727.81	498.00	---	469.57	2.00%	577.56	0.00	467.57	2.00	105.98	2.00	7898.83
885	17069205.86	688752.13	498.00	---	469.33	1.19%	571.50	0.00	467.33	2.00	100.17	2.00	7491.66
886	17069200.07	688776.45	498.00	---	469.00	2.41%	565.24	0.00	467.00	2.00	94.24	2.00	7076.94
887	17069194.28	688800.77	498.00	---	468.55	2.41%	559.36	0.00	466.55	2.00	88.81	2.00	6696.78
888	17069188.49	688825.09	498.00	---	468.10	2.41%	552.93	0.00	466.10	2.00	82.82	2.00	6277.70
889	17069182.70	688849.41	498.00	---	468.23	15.39%	546.77	0.00	466.23	2.00	76.54	2.00	5837.71
890	17069176.91	688873.73	498.00	---	474.47	33.33%	540.86	0.00	472.47	2.00	64.39	2.00	4986.96
891	17069171.12	688898.05	501.22	---	482.78	33.33%	534.45	0.00	480.78	2.00	49.68	2.00	3957.38
892	17069165.33	688922.37	504.00	---	491.08	33.33%	528.38	0.00	489.08	2.00	35.30	2.00	2950.71
893	17069159.54	688946.69	503.66	---	499.39	33.33%	522.14	0.00	497.39	2.00	20.75	2.00	1932.58
901	17069461.76	687785.10	500.26	---	514.14	33.33%	528.19	0.00	512.14	2.00	12.05	2.00	1323.65
902	17069455.97	687809.42	494.92	---	506.04	33.33%	534.55	0.00	504.04	2.00	26.51	2.00	2335.95
903	17069450.18	687833.74	495.50	---	497.95	33.33%	540.56	0.00	495.95	2.00	40.62	2.00	3323.34
904	17069444.40	687858.06	499.59	---	490.00	0.00%	546.81	0.00	488.00	2.00	54.81	2.00	4316.48
905	17069438.61	687882.38	505.57	---	492.24	33.33%	552.93	0.00	490.24	2.00	58.69	2.00	4588.25
906	17069432.82	687906.70	512.51	---	499.45	33.33%	558.97	0.00	497.45	2.00	57.51	2.00	4506.03
907	17069427.03	687931.02	519.32	---	506.66	33.33%	565.19	0.00	504.66	2.00	56.52	2.00	4436.49
908	17069421.24	687955.34	524.83	---	513.87	33.33%	571.24	0.00	511.87	2.00	55.37	2.00	4355.57
909	17069415.45	687979.67	527.24	---	521.08	33.33%	577.44	0.00	519.08	2.00	54.35	2.00	4284.74
910	17069409.66	688003.99	529.94	527.48	531.94	16.35%	583.56	2.46	529.94	2.00	49.63	2.00	3953.87
911	17069403.87	688028.31	533.36	521.43	535.36	16.51%	589.54	11.93	533.36	2.00	52.18	2.00	4132.46
912	17069398.08	688052.63	536.62	514.22	538.62	12.11%	595.82	22.39	536.62	2.00	55.20	2.00	4343.89
913	17069392.29	688076.95	538.45	507.02	540.45	4.53%	601.91	31.43	538.45	2.00	59.46	2.00	4642.23
914	17069386.50	688101.27	538.98	499.74	540.98	3.31%	607.70	39.23	538.98	2.00	64.72	2.00	5010.56
915	17069380.71	688125.59	539.68	498.00	541.68	3.22%	611.74	41.68	539.68	2.00	68.06	2.00	5244.23
916	17069374.92	688149.91	540.05	498.00	542.05	0.75%	613.00	42.05	540.05	2.00	68.96	2.00	5307.11
917	17069369.13	688174.23	540.19	498.00	542.19	0.69%	613.03	42.19	540.19	2.00	68.84	2.00	5298.81
918	17069363.34	688198.55	540.31	498.00	542.31	0.60%	612.76	42.31	540.31	2.00	68.45	2.00	5271.32
919	17069357.55	688222.87	540.27	498.00	542.27	0.38%	612.46	42.27	540.27	2.00	68.19	2.00	5253.20
920	17069351.76	688247.19	540.18	498.00	542.18	0.38%	612.16	42.18	540.18	2.00	67.98	2.00	5238.72
921	17069345.97	688271.51	540.09	498.00	542.09	0.38%	611.88	42.09	540.09	2.00	67.80	2.00	5225.73
922	17069340.18	688295.83	539.94	498.00	541.94	4.69%	611.63	41.94	539.94	2.00	67.69	2.00	5218.45
923	17069334.39	688320.15	538.95	498.00	540.95	4.18%	611.38	40.95	538.95	2.00	68.43	2.00	5270.05
924	17069328.60	688344.47	538.05	498.00	540.05	4.18%	611.12	40.05	538.05	2.00	69.07	2.00	5315.06
925	17069322.81	688368.79	536.47	498.00	538.47	9.55%	610.87	38.47	536.47	2.00	70.40	2.00	5407.75
926	17069317.02	688393.11	534.66	497.99	536.66	13.84%	610.62	36.67	534.66	2.00	71.96	2.00	5517.20

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
927	17069311.23	688417.43	532.69	497.99	534.69	13.82%	610.39	34.70	532.69	2.00	73.70	2.00	5638.91
928	17069305.44	688441.75	530.89	497.99	532.89	14.51%	610.15	32.90	530.89	2.00	75.27	2.00	5748.66
929	17069299.65	688466.07	528.81	497.99	530.81	12.73%	609.88	30.83	528.81	2.00	77.07	2.00	5874.59
930	17069293.86	688490.39	526.56	502.33	528.56	12.55%	609.51	24.23	526.56	2.00	78.95	2.00	6006.48
931	17069288.08	688514.71	523.97	509.53	525.97	14.65%	609.14	14.44	523.97	2.00	81.17	2.00	6161.68
932	17069282.29	688539.03	521.27	516.75	523.27	14.46%	608.76	4.52	521.27	2.00	83.50	2.00	6324.87
933	17069276.50	688563.35	518.53	---	512.83	33.34%	608.34	0.00	510.83	2.00	93.52	2.00	7026.14
934	17069270.71	688587.67	516.72	---	505.43	33.34%	607.57	0.00	503.43	2.00	100.14	2.00	7489.49
935	17069264.92	688611.99	514.11	---	498.04	33.34%	605.66	0.00	496.04	2.00	105.62	2.00	7873.48
936	17069259.13	688636.31	509.33	---	490.45	33.35%	601.52	0.00	488.45	2.00	109.08	2.00	8115.27
937	17069253.34	688660.64	504.41	---	482.84	33.35%	595.76	0.00	480.84	2.00	110.92	2.00	8244.28
938	17069247.55	688684.96	499.61	---	475.23	33.35%	589.98	0.00	473.23	2.00	112.75	2.00	8372.61
939	17069241.76	688709.28	498.00	---	471.39	4.64%	583.44	0.00	469.39	2.00	110.05	2.00	8183.75
940	17069235.97	688733.60	498.00	---	469.91	2.00%	577.29	0.00	467.91	2.00	105.38	2.00	7856.58
941	17069230.18	688757.92	498.00	---	469.63	1.19%	571.27	0.00	467.63	2.00	99.65	2.00	7455.17
942	17069224.39	688782.24	498.00	---	469.40	2.41%	564.97	0.00	467.40	2.00	93.57	2.00	7029.89
943	17069218.60	688806.56	498.00	---	468.95	2.41%	559.02	0.00	466.95	2.00	88.07	2.00	6644.88
944	17069212.81	688830.88	498.00	---	468.51	2.41%	552.66	0.00	466.51	2.00	82.15	2.00	6230.65
945	17069207.02	688855.20	498.00	---	468.55	15.39%	546.50	0.00	466.55	2.00	75.95	2.00	5796.81
946	17069201.23	688879.52	498.00	---	475.15	33.33%	540.64	0.00	473.15	2.00	63.48	2.00	4923.71
947	17069195.44	688903.84	498.88	---	483.46	33.33%	534.18	0.00	481.46	2.00	48.73	2.00	3890.79
948	17069189.65	688928.16	502.54	---	491.76	33.33%	528.04	0.00	489.76	2.00	34.27	2.00	2878.95
949	17069183.86	688952.48	504.00	---	500.07	33.33%	521.90	0.00	498.07	2.00	19.82	2.00	1867.74
957	17069486.08	687790.89	495.20	---	512.16	33.33%	528.92	0.00	510.16	2.00	14.76	2.00	1513.51
958	17069480.29	687815.21	494.00	---	504.06	33.33%	535.23	0.00	502.06	2.00	29.17	2.00	2521.56
959	17069474.51	687839.53	494.00	---	495.97	33.33%	541.30	0.00	493.97	2.00	43.33	2.00	3512.89
960	17069468.72	687863.85	495.95	---	490.00	0.00%	547.48	0.00	488.00	2.00	55.48	2.00	4363.72
961	17069462.93	687888.17	500.99	---	490.00	0.00%	553.61	0.00	488.00	2.00	61.61	2.00	4792.55
962	17069457.14	687912.49	507.90	---	495.28	33.33%	559.59	0.00	493.28	2.00	62.31	2.00	4841.78
963	17069451.35	687936.81	514.82	---	502.49	33.33%	565.86	0.00	500.49	2.00	61.37	2.00	4776.19
964	17069445.56	687961.13	521.21	---	509.70	33.33%	571.99	0.00	507.70	2.00	60.29	2.00	4700.22
965	17069439.77	687985.45	525.71	---	516.91	33.33%	578.10	0.00	514.91	2.00	59.20	2.00	4623.77
966	17069433.98	688009.78	527.81	524.09	529.81	10.01%	584.24	3.72	527.81	2.00	52.43	2.00	4150.02
967	17069428.19	688034.10	531.17	525.62	533.17	16.51%	590.18	5.55	531.17	2.00	55.01	2.00	4330.50
968	17069422.40	688058.42	534.66	518.41	536.66	15.44%	596.49	16.25	534.66	2.00	57.83	2.00	4528.12
969	17069416.61	688082.74	537.57	511.21	539.57	12.46%	602.62	26.36	537.57	2.00	61.05	2.00	4753.44
970	17069410.82	688107.06	538.58	504.00	540.58	3.22%	608.62	34.58	538.58	2.00	66.04	2.00	5102.71
971	17069405.03	688131.38	539.17	498.00	541.17	2.94%	614.15	41.17	539.17	2.00	70.98	2.00	5448.89
972	17069399.24	688155.70	539.81	498.00	541.81	2.96%	617.88	41.81	539.81	2.00	74.07	2.00	5665.24
973	17069393.45	688180.02	540.10	498.00	542.10	0.67%	619.34	42.10	540.10	2.00	75.24	2.00	5746.50
974	17069387.66	688204.34	540.16	498.00	542.16	0.60%	619.04	42.16	540.16	2.00	74.88	2.00	5721.50
975	17069381.87	688228.66	540.16	498.00	542.16	0.63%	618.71	42.16	540.16	2.00	74.55	2.00	5698.26

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976	17069376.08	688252.98	540.12	498.00	542.12	0.48%	618.36	42.12	540.12	2.00	74.25	2.00	5677.24
977	17069370.29	688277.30	540.06	498.00	542.06	0.40%	618.02	42.06	540.06	2.00	73.96	2.00	5657.40
978	17069364.50	688301.62	539.69	498.00	541.69	3.86%	617.72	41.69	539.69	2.00	74.03	2.00	5662.02
979	17069358.71	688325.94	539.08	498.00	541.08	2.80%	617.42	41.08	539.08	2.00	74.34	2.00	5684.14
980	17069352.92	688350.26	538.53	498.00	540.53	2.80%	617.12	40.53	538.53	2.00	74.59	2.00	5701.44
981	17069347.13	688374.58	537.95	497.99	539.95	7.67%	616.83	39.96	537.95	2.00	74.87	2.00	5721.06
982	17069341.34	688398.90	536.69	497.99	538.69	6.73%	616.53	38.70	536.69	2.00	75.83	2.00	5788.30
983	17069335.55	688423.22	535.61	497.99	537.61	12.78%	616.23	37.62	535.61	2.00	76.61	2.00	5842.92
984	17069329.76	688447.54	534.06	497.99	536.06	12.43%	615.93	36.07	534.06	2.00	77.87	2.00	5930.84
985	17069323.97	688471.86	531.37	497.99	533.37	15.74%	615.63	33.38	531.37	2.00	80.26	2.00	6098.17
986	17069318.19	688496.18	528.82	498.14	530.82	13.06%	615.33	30.68	528.82	2.00	82.51	2.00	6255.72
987	17069312.40	688520.50	526.50	505.49	528.50	13.46%	615.03	21.00	526.50	2.00	84.54	2.00	6397.70
988	17069306.61	688544.82	524.07	512.56	526.07	14.49%	614.69	11.51	524.07	2.00	86.63	2.00	6543.79
989	17069300.82	688569.14	521.24	515.26	523.24	17.87%	613.83	5.98	521.24	2.00	88.59	2.00	6681.24
990	17069295.03	688593.46	518.17	---	509.08	33.35%	611.83	0.00	507.08	2.00	100.75	2.00	7532.43
991	17069289.24	688617.78	516.42	---	501.47	33.35%	607.27	0.00	499.47	2.00	103.81	2.00	7746.38
992	17069283.45	688642.10	513.44	---	493.86	33.35%	601.62	0.00	491.86	2.00	105.77	2.00	7883.74
993	17069277.66	688666.42	508.07	---	486.23	33.33%	595.49	0.00	484.23	2.00	107.26	2.00	7988.39
994	17069271.87	688690.75	502.39	---	478.50	33.33%	589.65	0.00	476.50	2.00	109.15	2.00	8120.41
995	17069266.08	688715.07	498.00	---	471.98	5.38%	583.17	0.00	469.98	2.00	109.19	2.00	8123.55
996	17069260.29	688739.39	498.00	---	470.83	5.38%	577.02	0.00	468.83	2.00	104.19	2.00	7773.04
997	17069254.50	688763.71	498.00	---	469.92	1.19%	571.05	0.00	467.92	2.00	99.13	2.00	7419.04
998	17069248.71	688788.03	498.00	---	469.81	2.41%	564.70	0.00	467.81	2.00	92.90	2.00	6982.83
999	17069242.92	688812.35	498.00	---	469.56	4.48%	558.68	0.00	467.56	2.00	87.12	2.00	6578.67
1000	17069237.13	688836.67	498.00	---	469.49	4.48%	552.39	0.00	467.49	2.00	80.90	2.00	6142.96
1001	17069231.34	688860.99	498.00	---	469.42	4.48%	546.23	0.00	467.42	2.00	74.81	2.00	5717.03
1002	17069225.55	688885.31	498.00	---	475.84	33.33%	540.42	0.00	473.84	2.00	62.58	2.00	4860.67
1003	17069219.76	688909.63	498.00	---	484.14	33.33%	533.92	0.00	482.14	2.00	47.77	2.00	3824.19
1004	17069213.97	688933.95	501.98	---	492.45	33.33%	527.76	0.00	490.45	2.00	33.31	2.00	2811.79
1005	17069208.18	688958.27	504.00	---	500.75	33.33%	521.68	0.00	498.75	2.00	18.93	2.00	1804.76
1012	17069516.19	687772.36	502.66	---	518.28	33.33%	522.95	0.00	516.28	2.00	2.67	2.00	666.82
1013	17069510.40	687796.68	494.00	---	510.18	33.33%	529.61	0.00	508.18	2.00	17.43	2.00	1699.85
1014	17069504.62	687821.00	494.00	---	502.09	33.33%	535.90	0.00	500.09	2.00	31.82	2.00	2707.18
1015	17069498.83	687845.32	494.00	---	493.99	33.33%	542.03	0.00	491.99	2.00	46.04	2.00	3702.70
1016	17069493.04	687869.64	494.00	---	488.26	4.35%	548.14	0.00	486.26	2.00	57.88	2.00	4531.69
1017	17069487.25	687893.96	496.79	---	489.20	5.28%	554.29	0.00	487.20	2.00	63.09	2.00	4896.60
1018	17069481.46	687918.28	502.96	---	491.10	33.33%	560.26	0.00	489.10	2.00	67.17	2.00	5181.61
1019	17069475.67	687942.60	509.91	---	498.31	33.33%	566.54	0.00	496.31	2.00	66.23	2.00	5115.90
1020	17069469.88	687966.92	516.94	---	505.52	33.33%	572.66	0.00	503.52	2.00	65.14	2.00	5040.02
1021	17069464.09	687991.24	522.96	---	512.73	33.33%	578.72	0.00	510.73	2.00	63.99	2.00	4959.10
1022	17069458.30	688015.56	526.17	---	519.94	33.33%	584.91	0.00	517.94	2.00	62.98	2.00	4888.26
1023	17069452.51	688039.89	528.92	526.53	530.92	17.12%	590.93	2.39	528.92	2.00	58.00	2.00	4540.16

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
1024	17069446.72	688064.21	532.73	522.60	534.73	16.03%	597.17	10.13	532.73	2.00	60.44	2.00	4710.70
1025	17069440.93	688088.53	536.01	515.40	538.01	12.27%	603.29	20.61	536.01	2.00	63.29	2.00	4909.97
1026	17069435.14	688112.85	538.16	508.19	540.16	2.95%	609.27	29.96	538.16	2.00	67.12	2.00	5178.20
1027	17069429.35	688137.17	538.79	500.94	540.79	2.95%	615.52	37.86	538.79	2.00	72.73	2.00	5570.95
1028	17069423.56	688161.49	539.42	498.00	541.42	2.93%	620.94	41.42	539.42	2.00	77.53	2.00	5906.86
1029	17069417.77	688185.81	539.99	498.00	541.99	2.94%	624.13	41.99	539.99	2.00	80.14	2.00	6089.85
1030	17069411.98	688210.13	540.01	498.00	542.01	0.60%	624.88	42.01	540.01	2.00	80.86	2.00	6140.42
1031	17069406.19	688234.45	540.00	498.00	542.00	0.60%	624.77	42.00	540.00	2.00	80.77	2.00	6133.86
1032	17069400.40	688258.77	540.01	498.00	542.01	0.51%	624.47	42.01	540.01	2.00	80.47	2.00	6112.82
1033	17069394.61	688283.09	539.94	498.00	541.94	0.65%	624.18	41.94	539.94	2.00	80.23	2.00	6096.21
1034	17069388.82	688307.41	539.88	498.00	541.88	0.64%	623.88	41.88	539.88	2.00	80.00	2.00	6080.13
1035	17069383.03	688331.73	539.37	498.00	541.37	2.51%	623.58	41.37	539.37	2.00	80.21	2.00	6094.71
1036	17069377.24	688356.05	538.80	498.00	540.80	2.51%	623.28	40.81	538.80	2.00	80.48	2.00	6113.47
1037	17069371.45	688380.37	538.32	498.00	540.32	2.00%	622.98	40.32	538.32	2.00	80.67	2.00	6126.63
1038	17069365.66	688404.69	538.08	498.00	540.08	2.03%	622.68	40.08	538.08	2.00	80.60	2.00	6122.25
1039	17069359.87	688429.01	537.37	498.00	539.37	7.33%	622.38	39.37	537.37	2.00	81.01	2.00	6150.97
1040	17069354.08	688453.33	536.19	498.00	538.19	6.64%	622.09	38.20	536.19	2.00	81.89	2.00	6212.59
1041	17069348.30	688477.65	534.08	497.99	536.08	11.07%	621.82	36.09	534.08	2.00	83.74	2.00	6341.91
1042	17069342.51	688501.97	531.15	497.99	533.15	14.10%	621.56	33.16	531.15	2.00	86.40	2.00	6528.25
1043	17069336.72	688526.29	528.69	501.90	530.69	12.91%	621.32	26.79	528.69	2.00	88.63	2.00	6684.05
1044	17069330.93	688550.61	526.40	508.99	528.40	12.55%	620.75	17.41	526.40	2.00	90.34	2.00	6803.92
1045	17069325.14	688574.93	524.22	515.89	526.22	12.26%	617.78	8.33	524.22	2.00	89.56	2.00	6749.20
1046	17069319.35	688599.25	521.12	---	512.49	33.35%	613.21	0.00	510.49	2.00	98.73	2.00	7390.90
1047	17069313.56	688623.57	518.45	---	504.80	33.33%	607.53	0.00	502.80	2.00	100.73	2.00	7531.03
1048	17069307.77	688647.89	516.48	---	497.08	33.33%	601.48	0.00	495.08	2.00	102.40	2.00	7647.76
1049	17069301.98	688672.21	512.15	---	489.36	33.33%	595.22	0.00	487.36	2.00	103.86	2.00	7750.32
1050	17069296.19	688696.53	505.60	---	481.64	33.33%	589.32	0.00	479.64	2.00	105.69	2.00	7877.98
1051	17069290.40	688720.86	499.99	---	477.22	33.33%	582.91	0.00	475.22	2.00	103.69	2.00	7738.31
1052	17069284.61	688745.18	498.00	---	476.67	33.33%	576.75	0.00	474.67	2.00	98.07	2.00	7345.17
1053	17069278.82	688769.50	498.00	---	476.13	33.33%	570.83	0.00	474.13	2.00	92.70	2.00	6968.93
1054	17069273.03	688793.82	498.00	---	475.59	33.33%	564.43	0.00	473.59	2.00	86.84	2.00	6558.89
1055	17069267.24	688818.14	498.00	---	475.05	33.33%	558.35	0.00	473.05	2.00	81.30	2.00	6170.69
1056	17069261.45	688842.46	498.00	---	474.51	33.33%	552.12	0.00	472.51	2.00	75.61	2.00	5772.62
1057	17069255.66	688866.78	498.00	---	473.97	33.33%	545.96	0.00	471.97	2.00	69.99	2.00	5379.48
1058	17069249.87	688891.10	498.00	---	476.52	33.33%	540.20	0.00	474.52	2.00	61.68	2.00	4797.89
1059	17069244.08	688915.42	498.00	---	484.82	33.33%	533.65	0.00	482.82	2.00	46.82	2.00	3757.60
1060	17069238.29	688939.74	501.29	---	493.13	33.33%	527.49	0.00	491.13	2.00	32.36	2.00	2745.21
1061	17069232.50	688964.06	504.00	---	501.43	33.33%	521.46	0.00	499.43	2.00	18.03	2.00	1741.80
1068	17069540.51	687778.15	500.14	---	516.11	33.33%	523.78	0.00	514.11	2.00	5.67	2.00	876.84
1069	17069534.73	687802.47	494.00	---	508.12	33.33%	530.31	0.00	506.12	2.00	20.19	2.00	1893.29
1070	17069528.94	687826.79	494.00	---	500.10	33.34%	536.58	0.00	498.10	2.00	34.48	2.00	2893.50
1071	17069523.15	687851.11	494.00	---	492.01	33.33%	542.71	0.00	490.01	2.00	48.69	2.00	3888.32

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
1072	17069517.36	687875.43	494.00	---	488.00	0.00%	548.76	0.00	486.00	2.00	58.76	2.00	4593.34
1073	17069511.57	687899.75	494.00	---	488.26	5.28%	554.99	0.00	486.26	2.00	64.73	2.00	5011.07
1074	17069505.78	687924.07	498.06	---	489.29	7.69%	561.06	0.00	487.29	2.00	69.77	2.00	5363.80
1075	17069499.99	687948.39	504.80	---	494.13	33.33%	567.21	0.00	492.13	2.00	71.08	2.00	5455.61
1076	17069494.20	687972.71	512.02	---	501.34	33.33%	573.34	0.00	499.34	2.00	70.00	2.00	5379.72
1077	17069488.41	687997.03	518.83	---	508.55	33.33%	579.32	0.00	506.55	2.00	68.77	2.00	5294.03
1078	17069482.62	688021.35	524.37	---	515.76	33.33%	585.59	0.00	513.76	2.00	67.83	2.00	5227.97
1079	17069476.83	688045.67	526.93	---	522.97	33.33%	591.68	0.00	520.97	2.00	66.71	2.00	5149.70
1080	17069471.04	688070.00	530.73	526.79	532.73	18.55%	597.84	3.94	530.73	2.00	63.12	2.00	4898.07
1081	17069465.25	688094.32	534.30	519.48	536.30	13.49%	603.97	14.82	534.30	2.00	65.66	2.00	5076.48
1082	17069459.46	688118.64	537.11	512.03	539.11	12.15%	609.87	25.08	537.11	2.00	68.76	2.00	5293.41
1083	17069453.67	688142.96	538.39	505.13	540.39	2.94%	616.22	33.26	538.39	2.00	73.84	2.00	5648.45
1084	17069447.88	688167.28	538.94	499.81	540.94	2.96%	622.20	39.13	538.94	2.00	79.25	2.00	6027.78
1085	17069442.09	688191.60	539.35	498.00	541.35	2.76%	627.30	41.35	539.35	2.00	83.95	2.00	6356.51
1086	17069436.30	688215.92	539.49	498.00	541.49	2.22%	630.58	41.49	539.49	2.00	87.09	2.00	6576.13
1087	17069430.51	688240.24	539.51	498.00	541.51	1.94%	631.04	41.51	539.51	2.00	87.53	2.00	6607.06
1088	17069424.72	688264.56	539.62	498.00	541.62	1.65%	630.88	41.62	539.62	2.00	87.26	2.00	6588.33
1089	17069418.93	688288.88	539.66	498.00	541.66	1.58%	630.60	41.66	539.66	2.00	86.94	2.00	6566.00
1090	17069413.14	688313.20	539.73	498.00	541.73	0.68%	630.32	41.73	539.73	2.00	86.60	2.00	6541.76
1091	17069407.35	688337.52	539.64	498.00	541.64	2.51%	630.05	41.64	539.64	2.00	86.41	2.00	6528.55
1092	17069401.56	688361.84	539.07	498.00	541.07	2.51%	629.72	41.07	539.07	2.00	86.65	2.00	6545.46
1093	17069395.77	688386.16	538.74	498.00	540.74	2.03%	629.37	40.74	538.74	2.00	86.64	2.00	6544.71
1094	17069389.98	688410.48	538.46	498.00	540.46	1.68%	629.03	40.46	538.46	2.00	86.57	2.00	6540.23
1095	17069384.19	688434.80	538.11	498.00	540.11	1.64%	628.67	40.11	538.11	2.00	86.56	2.00	6538.95
1096	17069378.41	688459.12	537.12	498.00	539.12	6.30%	628.30	39.12	537.12	2.00	87.18	2.00	6582.40
1097	17069372.62	688483.44	535.68	498.05	537.68	10.39%	627.94	37.63	535.68	2.00	88.27	2.00	6658.66
1098	17069366.83	688507.76	533.50	499.25	535.50	13.79%	627.64	34.25	533.50	2.00	90.15	2.00	6790.33
1099	17069361.04	688532.08	530.87	501.44	532.87	12.86%	626.40	29.43	530.87	2.00	91.53	2.00	6887.31
1100	17069355.25	688556.40	528.51	507.43	530.51	12.81%	624.06	21.08	528.51	2.00	91.55	2.00	6888.63
1101	17069349.46	688580.72	526.39	513.70	528.39	11.31%	619.88	12.69	526.39	2.00	89.50	2.00	6744.66
1102	17069343.67	688605.04	524.18	515.45	526.18	12.89%	613.39	8.74	524.18	2.00	85.20	2.00	6444.17
1103	17069337.88	688629.36	521.55	---	507.94	33.33%	607.27	0.00	505.94	2.00	97.33	2.00	7293.12
1104	17069332.09	688653.68	519.34	---	500.21	33.33%	601.25	0.00	498.21	2.00	99.04	2.00	7412.87
1105	17069326.30	688678.00	516.20	---	492.49	33.33%	594.95	0.00	490.49	2.00	100.46	2.00	7512.24
1106	17069320.51	688702.32	509.24	---	486.90	31.69%	588.99	0.00	484.90	2.00	100.08	2.00	7485.80
1107	17069314.72	688726.64	503.32	---	485.53	33.33%	582.64	0.00	483.53	2.00	95.10	2.00	7137.34
1108	17069308.93	688750.97	498.07	---	484.99	33.33%	576.48	0.00	482.99	2.00	89.49	2.00	6744.20
1109	17069303.14	688775.29	498.00	---	484.45	33.33%	570.61	0.00	482.45	2.00	84.16	2.00	6371.19
1110	17069297.35	688799.61	498.00	---	483.91	33.33%	564.16	0.00	481.91	2.00	78.26	2.00	5957.92
1111	17069291.56	688823.93	498.00	---	483.37	33.33%	558.01	0.00	481.37	2.00	72.64	2.00	5564.89
1112	17069285.77	688848.25	498.00	---	482.83	33.33%	551.88	0.00	480.83	2.00	67.05	2.00	5173.60
1113	17069279.98	688872.57	498.00	---	482.28	33.33%	545.69	0.00	480.28	2.00	61.41	2.00	4778.50

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
1114	17069274.19	688896.89	498.00	---	481.74	33.33%	539.98	0.00	479.74	2.00	56.24	2.00	4416.50
1115	17069268.40	688921.21	498.00	---	485.50	33.33%	533.38	0.00	483.50	2.00	45.87	2.00	3691.01
1116	17069262.61	688945.53	501.07	---	493.81	33.33%	527.22	0.00	491.81	2.00	31.41	2.00	2678.61
1117	17069256.82	688969.85	504.08	---	502.12	33.33%	521.24	0.00	500.12	2.00	17.13	2.00	1678.83
1124	17069564.84	687783.94	497.98	---	513.76	33.33%	524.52	0.00	511.76	2.00	8.77	2.00	1093.69
1125	17069559.05	687808.26	494.00	---	505.76	33.33%	531.05	0.00	503.76	2.00	23.28	2.00	2109.71
1126	17069553.26	687832.58	494.00	---	497.77	33.33%	537.25	0.00	495.77	2.00	37.48	2.00	3103.79
1127	17069547.47	687856.90	494.00	---	489.78	33.33%	543.38	0.00	487.78	2.00	51.60	2.00	4092.11
1128	17069541.68	687881.22	494.00	---	488.22	5.35%	549.37	0.00	486.22	2.00	59.16	2.00	4620.89
1129	17069535.89	687905.54	494.00	---	488.00	0.00%	555.69	0.00	486.00	2.00	65.69	2.00	5078.27
1130	17069530.10	687929.86	494.87	---	488.33	7.69%	561.86	0.00	486.33	2.00	71.53	2.00	5487.16
1131	17069524.31	687954.18	499.93	---	489.99	7.69%	567.89	0.00	487.99	2.00	75.90	2.00	5792.73
1132	17069518.52	687978.50	507.31	---	497.16	33.33%	574.01	0.00	495.16	2.00	74.85	2.00	5719.43
1133	17069512.73	688002.82	514.85	---	504.37	33.33%	579.93	0.00	502.37	2.00	73.56	2.00	5628.97
1134	17069506.94	688027.14	521.33	---	511.58	33.33%	586.26	0.00	509.58	2.00	72.68	2.00	5567.67
1135	17069501.15	688051.46	525.24	---	518.79	33.33%	592.39	0.00	516.79	2.00	71.60	2.00	5491.79
1136	17069495.36	688075.78	528.42	525.61	530.42	19.53%	598.46	2.81	528.42	2.00	66.04	2.00	5102.83
1137	17069489.57	688100.11	532.35	523.21	534.35	15.63%	604.64	9.14	532.35	2.00	68.30	2.00	5260.77
1138	17069483.78	688124.43	535.45	515.95	537.45	13.63%	610.61	19.50	535.45	2.00	71.16	2.00	5460.87
1139	17069477.99	688148.75	537.62	509.89	539.62	10.91%	616.90	27.74	537.62	2.00	75.27	2.00	5749.22
1140	17069472.20	688173.07	538.42	506.92	540.42	2.94%	622.99	31.50	538.42	2.00	80.58	2.00	6120.32
1141	17069466.41	688197.39	538.81	504.29	540.81	2.61%	629.02	34.52	538.81	2.00	86.21	2.00	6514.68
1142	17069460.62	688221.71	538.95	502.27	540.95	2.13%	633.86	36.68	538.95	2.00	90.90	2.00	6843.16
1143	17069454.83	688246.03	539.10	500.40	541.10	1.84%	636.15	38.70	539.10	2.00	93.05	2.00	6993.56
1144	17069449.04	688270.35	539.22	498.69	541.22	1.65%	636.98	40.53	539.22	2.00	93.76	2.00	7042.99
1145	17069443.25	688294.67	539.27	498.00	541.27	1.58%	636.69	41.27	539.27	2.00	93.42	2.00	7019.31
1146	17069437.46	688318.99	539.34	498.50	541.34	1.58%	636.40	40.84	539.34	2.00	93.06	2.00	6993.91
1147	17069431.67	688343.31	539.41	499.51	541.41	1.58%	636.12	39.90	539.41	2.00	92.71	2.00	6969.37
1148	17069425.88	688367.63	539.38	500.59	541.38	1.64%	635.83	38.79	539.38	2.00	92.45	2.00	6951.33
1149	17069420.09	688391.95	539.02	501.70	541.02	1.58%	635.54	37.32	539.02	2.00	92.52	2.00	6956.16
1150	17069414.30	688416.27	538.66	502.78	540.66	1.58%	635.25	35.88	538.66	2.00	92.59	2.00	6961.15
1151	17069408.52	688440.59	538.31	503.87	540.31	1.68%	634.97	34.43	538.31	2.00	92.66	2.00	6966.20
1152	17069402.73	688464.91	537.82	505.08	539.82	5.88%	634.68	32.74	537.82	2.00	92.87	2.00	6980.55
1153	17069396.94	688489.23	536.61	506.29	538.61	5.85%	634.32	30.32	536.61	2.00	93.71	2.00	7039.58
1154	17069391.15	688513.55	534.89	507.50	536.89	9.62%	633.39	27.40	534.89	2.00	94.50	2.00	7094.99
1155	17069385.36	688537.87	532.75	508.70	534.75	11.04%	630.65	24.04	532.75	2.00	93.90	2.00	7053.06
1156	17069379.57	688562.19	530.63	509.96	532.63	11.94%	624.99	20.68	530.63	2.00	90.36	2.00	6804.86
1157	17069373.78	688586.51	528.31	512.68	530.31	10.77%	619.61	15.64	528.31	2.00	87.30	2.00	6590.80
1158	17069367.99	688610.83	526.57	518.26	528.57	8.82%	613.15	8.31	526.57	2.00	82.59	2.00	6261.05
1159	17069362.20	688635.15	524.63	---	511.07	33.33%	607.00	0.00	509.07	2.00	93.93	2.00	7055.04
1160	17069356.41	688659.47	522.31	---	503.35	31.08%	601.03	0.00	501.35	2.00	95.68	2.00	7177.51
1161	17069350.62	688683.79	519.01	---	497.21	30.19%	594.68	0.00	495.21	2.00	95.48	2.00	7163.31

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
1162	17069344.83	688708.11	513.41	---	494.39	33.36%	588.65	0.00	492.39	2.00	92.26	2.00	6938.45
1163	17069339.04	688732.43	507.37	---	493.85	33.33%	582.37	0.00	491.85	2.00	86.52	2.00	6536.37
1164	17069333.25	688756.75	502.04	---	493.31	33.33%	576.21	0.00	491.31	2.00	80.90	2.00	6143.22
1165	17069327.46	688781.08	498.73	---	492.76	33.33%	570.39	0.00	490.76	2.00	75.63	2.00	5773.86
1166	17069321.67	688805.40	498.00	---	492.22	33.33%	563.89	0.00	490.22	2.00	69.67	2.00	5356.95
1167	17069315.88	688829.72	498.00	---	491.68	33.33%	557.75	0.00	489.68	2.00	64.06	2.00	4964.45
1168	17069310.09	688854.04	498.00	---	491.14	33.33%	551.66	0.00	489.14	2.00	58.52	2.00	4576.23
1169	17069304.30	688878.36	498.00	---	490.60	33.33%	545.42	0.00	488.60	2.00	52.82	2.00	4177.53
1170	17069298.51	688902.68	498.00	---	490.06	33.33%	539.63	0.00	488.06	2.00	47.58	2.00	3810.25
1171	17069292.72	688927.00	498.00	---	490.12	28.67%	533.11	0.00	488.12	2.00	40.98	2.00	3348.89
1172	17069286.93	688951.32	501.19	---	494.71	30.57%	526.95	0.00	492.71	2.00	30.24	2.00	2596.65
1173	17069281.14	688975.64	504.46	---	502.80	33.33%	521.02	0.00	500.80	2.00	16.23	2.00	1615.86
1180	17069589.16	687789.73	496.09	---	511.40	33.33%	525.25	0.00	509.40	2.00	11.85	2.00	1309.75
1181	17069583.37	687814.05	494.00	---	503.41	33.33%	531.78	0.00	501.41	2.00	26.38	2.00	2326.43
1182	17069577.58	687838.37	494.00	---	495.41	33.33%	537.93	0.00	493.41	2.00	40.52	2.00	3316.11
1183	17069571.79	687862.69	494.00	---	489.42	4.48%	544.05	0.00	487.42	2.00	52.63	2.00	4164.30
1184	17069566.00	687887.01	494.00	---	489.50	4.48%	549.99	0.00	487.50	2.00	58.49	2.00	4574.34
1185	17069560.21	687911.33	494.00	---	489.34	7.69%	556.37	0.00	487.34	2.00	65.03	2.00	5032.04
1186	17069554.42	687935.65	494.00	---	489.58	7.69%	562.55	0.00	487.58	2.00	70.97	2.00	5447.74
1187	17069548.63	687959.97	496.57	---	489.82	7.69%	568.51	0.00	487.82	2.00	76.69	2.00	5848.15
1188	17069542.84	687984.29	503.10	---	492.98	33.33%	574.69	0.00	490.98	2.00	79.70	2.00	6059.13
1189	17069537.05	688008.61	510.54	---	500.19	33.33%	580.66	0.00	498.19	2.00	78.47	2.00	5972.58
1190	17069531.26	688032.93	518.27	---	507.40	33.33%	586.94	0.00	505.40	2.00	77.53	2.00	5907.37
1191	17069525.47	688057.25	523.30	---	514.62	33.33%	593.06	0.00	512.62	2.00	76.45	2.00	5831.49
1192	17069519.68	688081.57	526.26	---	521.83	33.33%	599.06	0.00	519.83	2.00	75.24	2.00	5746.52
1193	17069513.89	688105.89	529.89	527.61	531.89	18.84%	605.32	2.28	529.89	2.00	71.43	2.00	5480.00
1194	17069508.10	688130.22	533.24	520.92	535.24	15.11%	611.37	12.33	533.24	2.00	74.13	2.00	5668.99
1195	17069502.31	688154.54	535.73	517.52	537.73	12.67%	617.57	18.21	535.73	2.00	77.84	2.00	5928.93
1196	17069496.52	688178.86	537.54	515.36	539.54	10.69%	623.70	22.19	537.54	2.00	82.16	2.00	6230.85
1197	17069490.73	688203.18	538.25	513.22	540.25	2.34%	629.61	25.03	538.25	2.00	87.36	2.00	6595.00
1198	17069484.94	688227.50	538.52	511.42	540.52	2.05%	635.27	27.10	538.52	2.00	92.75	2.00	6972.28
1199	17069479.15	688251.82	538.73	509.22	540.73	1.68%	640.21	29.51	538.73	2.00	97.49	2.00	7304.24
1200	17069473.36	688276.14	538.83	506.96	540.83	1.65%	642.45	31.87	538.83	2.00	99.62	2.00	7453.72
1201	17069467.57	688300.46	538.88	506.10	540.88	1.58%	642.61	32.78	538.88	2.00	99.72	2.00	7460.72
1202	17069461.78	688324.78	538.95	506.80	540.95	1.58%	642.51	32.16	538.95	2.00	99.56	2.00	7449.10
1203	17069455.99	688349.10	539.02	507.83	541.02	1.75%	642.21	31.19	539.02	2.00	99.19	2.00	7423.45
1204	17069450.20	688373.42	538.98	508.91	540.98	2.05%	641.91	30.07	538.98	2.00	98.93	2.00	7405.44
1205	17069444.41	688397.74	538.73	509.98	540.73	2.11%	641.61	28.75	538.73	2.00	98.88	2.00	7401.71
1206	17069438.63	688422.06	538.51	511.05	540.51	2.06%	641.32	27.46	538.51	2.00	98.81	2.00	7396.53
1207	17069432.84	688446.38	538.28	512.12	540.28	2.21%	641.02	26.16	538.28	2.00	98.74	2.00	7391.72
1208	17069427.05	688470.70	538.04	513.33	540.04	1.96%	640.67	24.71	538.04	2.00	98.63	2.00	7383.81
1209	17069421.26	688495.02	536.81	514.53	538.81	7.01%	639.76	22.28	536.81	2.00	98.94	2.00	7406.14

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
1210	17069415.47	688519.34	535.16	515.74	537.16	8.51%	636.56	19.43	535.16	2.00	97.39	2.00	7297.39
1211	17069409.68	688543.66	533.42	516.94	535.42	8.76%	631.53	16.47	533.42	2.00	94.11	2.00	7067.92
1212	17069403.89	688567.98	531.28	518.15	533.28	8.12%	625.19	13.13	531.28	2.00	89.91	2.00	6773.56
1213	17069398.10	688592.30	529.32	519.08	531.32	7.20%	619.28	10.24	529.32	2.00	85.96	2.00	6497.21
1214	17069392.31	688616.62	528.12	520.49	530.12	5.34%	612.88	7.63	528.12	2.00	80.76	2.00	6133.41
1215	17069386.52	688640.94	526.66	---	514.27	53.09%	606.73	0.00	512.27	2.00	90.45	2.00	6811.71
1216	17069380.73	688665.26	525.28	---	507.69	30.77%	600.81	0.00	505.69	2.00	91.12	2.00	6858.37
1217	17069374.94	688689.58	522.70	---	503.61	28.86%	594.41	0.00	501.61	2.00	88.80	2.00	6696.31
1218	17069369.15	688713.90	517.09	---	502.65	33.36%	588.32	0.00	500.65	2.00	83.67	2.00	6337.08
1219	17069363.36	688738.22	511.33	---	502.16	33.33%	582.10	0.00	500.16	2.00	77.93	2.00	5935.39
1220	17069357.57	688762.54	506.42	---	501.62	33.33%	575.94	0.00	499.62	2.00	72.32	2.00	5542.26
1221	17069351.78	688786.86	503.07	---	501.08	33.33%	570.17	0.00	499.08	2.00	67.09	2.00	5176.58
1222	17069345.99	688811.19	501.57	---	500.54	33.33%	563.62	0.00	498.54	2.00	61.09	2.00	4755.98
1223	17069340.20	688835.51	501.93	---	500.00	33.33%	557.49	0.00	498.00	2.00	55.49	2.00	4364.15
1224	17069334.41	688859.83	501.86	---	499.46	33.33%	551.44	0.00	497.46	2.00	49.98	2.00	3978.81
1225	17069328.62	688884.15	501.00	---	498.92	33.33%	545.15	0.00	496.92	2.00	44.24	2.00	3576.56
1226	17069322.83	688908.47	500.30	---	498.37	33.33%	539.29	0.00	496.37	2.00	38.91	2.00	3204.01
1227	17069317.04	688932.79	500.24	---	497.83	33.33%	532.84	0.00	495.83	2.00	33.00	2.00	2790.28
1228	17069311.25	688957.11	502.45	---	498.86	27.06%	526.68	0.00	496.86	2.00	25.81	2.00	2287.04
1229	17069305.46	688981.43	504.63	---	504.20	27.68%	520.81	0.00	502.20	2.00	14.61	2.00	1502.65
1236	17069613.48	687795.52	495.50	---	509.04	33.33%	525.98	0.00	507.04	2.00	14.94	2.00	1525.82
1237	17069607.69	687819.84	494.00	---	501.05	33.33%	532.48	0.00	499.05	2.00	29.43	2.00	2540.10
1238	17069601.90	687844.16	494.00	---	493.50	22.19%	538.55	0.00	491.50	2.00	43.06	2.00	3493.97
1239	17069596.11	687868.48	494.00	---	493.30	33.33%	544.73	0.00	491.30	2.00	49.43	2.00	3940.24
1240	17069590.32	687892.80	494.00	---	494.35	33.33%	550.73	0.00	492.35	2.00	54.38	2.00	4286.70
1241	17069584.53	687917.12	494.00	---	495.40	33.33%	557.02	0.00	493.40	2.00	59.62	2.00	4653.56
1242	17069578.74	687941.44	494.00	---	496.44	33.33%	563.17	0.00	494.44	2.00	64.73	2.00	5011.00
1243	17069572.95	687965.76	494.33	---	497.49	33.33%	569.12	0.00	495.49	2.00	69.62	2.00	5353.69
1244	17069567.16	687990.08	499.53	---	498.54	33.33%	575.36	0.00	496.54	2.00	74.82	2.00	5717.30
1245	17069561.37	688014.40	506.57	---	499.59	33.33%	581.41	0.00	497.59	2.00	79.82	2.00	6067.65
1246	17069555.58	688038.72	514.05	---	503.41	21.82%	587.61	0.00	501.41	2.00	82.20	2.00	6234.03
1247	17069549.79	688063.04	520.24	---	510.44	33.33%	593.74	0.00	508.44	2.00	81.30	2.00	6171.20
1248	17069544.00	688087.36	524.42	---	517.65	33.33%	599.66	0.00	515.65	2.00	80.01	2.00	6080.96
1249	17069538.21	688111.68	527.31	524.69	529.31	16.84%	605.99	2.62	527.31	2.00	74.68	2.00	5707.80
1250	17069532.42	688136.00	530.69	528.35	532.69	16.04%	612.12	2.34	530.69	2.00	77.43	2.00	5899.97
1251	17069526.63	688160.33	533.26	525.56	535.26	13.29%	618.22	7.69	533.26	2.00	80.96	2.00	6147.14
1252	17069520.84	688184.65	535.38	523.40	537.38	13.50%	624.37	11.98	535.38	2.00	84.99	2.00	6429.10
1253	17069515.05	688208.97	537.01	521.36	539.01	10.00%	630.21	15.65	537.01	2.00	89.21	2.00	6724.55
1254	17069509.26	688233.29	538.10	519.55	540.10	1.84%	636.10	18.55	538.10	2.00	94.00	2.00	7059.76
1255	17069503.47	688257.61	538.32	517.79	540.32	1.68%	641.76	20.53	538.32	2.00	99.44	2.00	7440.56
1256	17069497.68	688281.93	538.43	516.10	540.43	1.65%	646.59	22.33	538.43	2.00	104.16	2.00	7770.99
1257	17069491.89	688306.25	538.49	514.80	540.49	1.58%	648.62	23.69	538.49	2.00	106.13	2.00	7909.11

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress Δσ
1258	17069486.10	688330.57	538.56	515.26	540.56	1.58%	648.66	23.30	538.56	2.00	106.10	2.00	7906.76
1259	17069480.31	688354.89	538.56	516.10	540.56	1.88%	648.37	22.46	538.56	2.00	105.81	2.00	7886.36
1260	17069474.52	688379.21	538.52	517.17	540.52	1.99%	648.07	21.35	538.52	2.00	105.55	2.00	7868.63
1261	17069468.74	688403.53	538.28	518.24	540.28	2.06%	647.77	20.04	538.28	2.00	105.49	2.00	7864.52
1262	17069462.95	688427.85	538.03	519.31	540.03	2.11%	647.47	18.72	538.03	2.00	105.44	2.00	7860.95
1263	17069457.16	688452.17	537.23	520.38	539.23	8.39%	647.06	16.85	537.23	2.00	105.83	2.00	7888.24
1264	17069451.37	688476.49	536.27	521.50	538.27	8.17%	645.84	14.78	536.27	2.00	105.57	2.00	7869.91
1265	17069445.58	688500.81	535.02	522.62	537.02	10.10%	642.81	12.41	535.02	2.00	103.79	2.00	7744.96
1266	17069439.79	688525.13	533.58	523.74	535.58	10.37%	637.79	9.84	533.58	2.00	100.21	2.00	7494.73
1267	17069434.00	688549.45	532.06	524.86	534.06	9.35%	631.50	7.20	532.06	2.00	95.44	2.00	7161.02
1268	17069428.21	688573.77	530.57	525.98	532.57	8.34%	624.93	4.60	530.57	2.00	90.36	2.00	6804.87
1269	17069422.42	688598.09	529.26	527.08	531.26	4.35%	618.96	2.17	529.26	2.00	85.70	2.00	6479.06
1270	17069416.63	688622.41	528.70	527.74	530.70	3.42%	612.61	0.96	528.70	2.00	79.92	2.00	6074.05
1271	17069410.84	688646.73	527.68	---	523.84	40.21%	606.46	0.00	521.84	2.00	80.62	2.00	6123.36
1272	17069405.05	688671.05	526.73	---	513.64	29.87%	600.59	0.00	511.64	2.00	84.94	2.00	6425.93
1292	17069637.80	687801.31	495.01	---	506.68	32.87%	526.80	0.00	504.68	2.00	18.11	2.00	1748.04
1293	17069632.01	687825.63	494.00	---	500.86	23.14%	533.15	0.00	498.86	2.00	30.29	2.00	2600.45
1294	17069626.22	687849.95	494.00	---	500.52	33.33%	539.16	0.00	498.52	2.00	36.65	2.00	3045.28
1295	17069620.43	687874.27	494.00	---	501.56	33.33%	545.40	0.00	499.56	2.00	41.84	2.00	3408.79
1296	17069614.64	687898.59	494.00	---	502.61	33.33%	551.48	0.00	500.61	2.00	46.86	2.00	3760.48
1297	17069608.85	687922.91	494.00	---	503.66	33.33%	557.67	0.00	501.66	2.00	52.01	2.00	4120.45
1298	17069603.06	687947.23	494.00	---	504.71	33.33%	563.80	0.00	502.71	2.00	57.09	2.00	4476.12
1299	17069597.27	687971.55	494.02	---	505.76	33.33%	569.72	0.00	503.76	2.00	61.96	2.00	4817.00
1300	17069591.48	687995.87	497.07	---	506.81	33.33%	576.04	0.00	504.81	2.00	67.23	2.00	5185.84
1301	17069585.69	688020.19	502.90	---	507.86	33.33%	582.16	0.00	505.86	2.00	72.30	2.00	5541.25
1302	17069579.90	688044.51	509.41	---	508.91	33.33%	588.26	0.00	506.91	2.00	77.35	2.00	5894.44
1303	17069574.11	688068.83	516.43	---	510.16	23.78%	594.41	0.00	508.16	2.00	82.25	2.00	6237.54
1304	17069568.32	688093.15	521.97	---	514.38	23.50%	600.33	0.00	512.38	2.00	83.96	2.00	6356.89
1305	17069562.53	688117.47	524.79	---	520.68	33.33%	606.67	0.00	518.68	2.00	83.99	2.00	6359.14
1306	17069556.74	688141.79	527.44	---	528.54	57.03%	612.79	0.00	526.54	2.00	82.25	2.00	6237.56
1307	17069550.95	688166.11	530.01	530.86	532.01	17.49%	618.81	0.00	530.01	2.00	84.81	2.00	6416.43
1308	17069545.16	688190.44	532.17	531.45	534.17	15.50%	625.05	0.72	532.17	2.00	88.87	2.00	6701.12
1309	17069539.37	688214.76	534.29	529.49	536.29	16.32%	630.86	4.80	534.29	2.00	92.57	2.00	6959.64
1310	17069533.58	688239.08	536.29	527.69	538.29	12.98%	636.74	8.60	536.29	2.00	96.45	2.00	7231.56
1311	17069527.79	688263.40	537.41	525.95	539.41	11.96%	642.73	11.46	537.41	2.00	101.32	2.00	7572.25
1312	17069522.00	688287.72	538.04	524.26	540.04	1.65%	648.66	13.78	538.04	2.00	106.63	2.00	7943.89
1313	17069516.21	688312.04	538.10	523.12	540.10	1.58%	652.97	14.98	538.10	2.00	110.87	2.00	8240.89
1314	17069510.42	688336.36	538.12	523.57	540.12	1.81%	654.19	14.55	538.12	2.00	112.07	2.00	8324.63
1315	17069504.63	688360.68	538.10	524.36	540.10	1.86%	654.49	13.73	538.10	2.00	112.40	2.00	8347.83
1316	17069498.85	688385.00	538.05	525.43	540.05	1.91%	654.23	12.62	538.05	2.00	112.17	2.00	8332.24
1317	17069493.06	688409.32	537.06	526.50	539.06	11.40%	653.93	10.56	537.06	2.00	112.86	2.00	8380.44
1318	17069487.27	688433.64	536.03	527.58	538.03	9.93%	653.36	8.46	536.03	2.00	113.33	2.00	8413.34

Analysis Location	Northing	Easting	Existing Ground Elev.	Existing C&D Base Elevation	Proposed Liner Protective Layer Elevation	Proposed Liner Initial Slope	Final Elevation	Existing C&D Waste Thickness	Proposed Subgrade Elevation	Proposed Protective Layer Thickness	Proposed MSW Waste Thickness	Proposed Final Cover Thickness	Additional Overburden Stress $\Delta\sigma$
1348	17069662.12	687807.10	495.53	---	509.05	21.41%	527.60	0.00	507.05	2.00	16.55	2.00	1638.42
1349	17069656.33	687831.42	494.00	---	507.73	33.33%	533.83	0.00	505.73	2.00	24.09	2.00	2166.50
1350	17069650.54	687855.74	494.00	---	508.78	33.33%	539.77	0.00	506.78	2.00	28.99	2.00	2509.20
1351	17069644.75	687880.06	494.00	---	509.83	33.33%	546.08	0.00	507.83	2.00	34.25	2.00	2877.33
1352	17069638.96	687904.38	494.42	---	510.88	33.33%	552.21	0.00	508.88	2.00	39.32	2.00	3232.74
1353	17069633.17	687928.70	494.97	---	511.93	33.33%	558.30	0.00	509.93	2.00	44.37	2.00	3585.94
1354	17069627.38	687953.02	495.22	---	512.98	33.33%	564.46	0.00	510.98	2.00	49.48	2.00	3943.56
1355	17069621.59	687977.34	495.53	---	514.03	33.33%	570.39	0.00	512.03	2.00	54.37	2.00	4285.70
1356	17069615.80	688001.66	496.78	---	515.08	33.33%	576.71	0.00	513.08	2.00	59.63	2.00	4654.39
1357	17069610.01	688025.98	500.18	---	516.13	33.33%	582.84	0.00	514.13	2.00	64.71	2.00	5009.80
1358	17069604.22	688050.30	505.33	---	517.17	33.33%	588.86	0.00	515.17	2.00	69.68	2.00	5357.78
1359	17069598.43	688074.62	512.15	---	518.22	33.33%	595.09	0.00	516.22	2.00	74.87	2.00	5720.61
1360	17069592.64	688098.94	518.49	---	519.27	33.33%	601.10	0.00	517.27	2.00	79.83	2.00	6067.99
1404	17069686.44	687812.89	498.85	---	515.29	30.68%	528.27	0.00	513.29	2.00	10.98	2.00	1248.82
1405	17069680.65	687837.21	498.28	---	516.00	33.33%	534.50	0.00	514.00	2.00	16.50	2.00	1635.06
1406	17069674.86	687861.53	498.25	---	517.05	33.33%	540.47	0.00	515.05	2.00	21.42	2.00	1979.41
1407	17069669.07	687885.85	498.29	---	518.10	33.33%	546.75	0.00	516.10	2.00	26.66	2.00	2345.87

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
148	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
149	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
150	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
151	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
152	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
153	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
154	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
155	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
156	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
157	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
158	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
159	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
160	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
195	2	3.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
196	2	2.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
197	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
198	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
199	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
200	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
201	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
202	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
203	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
204	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
205	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
206	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
207	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
208	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
209	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
210	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
211	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
212	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
213	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
214	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
215	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
216	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
217	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
218	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
219	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
220	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
221	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
222	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
223	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
242	4	4.64	4.64	4.64	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
243	4	4.78	4.78	4.78	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
246	5	4.32	4.32	4.32	4.32	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
247	5	4.38	4.38	4.38	4.38	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
248	5	4.39	4.39	4.39	4.39	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
249	5	4.32	4.32	4.32	4.32	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
250	4	4.84	4.84	4.84	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
251	3	4.48	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
252	2	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
253	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
254	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
255	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
256	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
257	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
258	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
259	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
260	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
261	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
262	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
263	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
264	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
265	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
266	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
267	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
268	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
269	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
270	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
271	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
272	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
273	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
274	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
275	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
276	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
277	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
278	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
289	3	4.57	4.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
290	4	4.11	4.11	4.11	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
291	5	4.07	4.07	4.07	4.07	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
292	5	4.44	4.44	4.44	4.44	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
293	5	4.73	4.73	4.73	4.73	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
294	6	4.20	4.20	4.20	4.20	4.20	0.00	0.00	0.00	0.00	0.21	0.02	0.79
295	6	4.41	4.41	4.41	4.41	4.41	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
296	6	4.52	4.52	4.52	4.52	4.52	0.00	0.00	0.00	0.00	0.21	0.02	0.79
297	6	4.50	4.50	4.50	4.50	4.50	0.00	0.00	0.00	0.00	0.21	0.02	0.79
298	6	4.47	4.47	4.47	4.47	4.47	0.00	0.00	0.00	0.00	0.21	0.02	0.79
299	6	4.54	4.54	4.54	4.54	4.54	0.00	0.00	0.00	0.00	0.21	0.02	0.79
300	6	4.66	4.66	4.66	4.66	4.66	0.00	0.00	0.00	0.00	0.21	0.02	0.79
301	6	4.81	4.81	4.81	4.81	4.81	0.00	0.00	0.00	0.00	0.21	0.02	0.79
302	6	4.96	4.96	4.96	4.96	4.96	0.00	0.00	0.00	0.00	0.21	0.02	0.79
303	7	4.34	4.34	4.34	4.34	4.34	4.34	0.00	0.00	0.00	0.21	0.02	0.79
304	7	4.36	4.36	4.36	4.36	4.36	4.36	0.00	0.00	0.00	0.21	0.02	0.79
305	6	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.00	0.00	0.21	0.02	0.79
306	6	4.30	4.30	4.30	4.30	4.30	0.00	0.00	0.00	0.00	0.21	0.02	0.79
307	4	4.86	4.86	4.86	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
308	3	3.83	3.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
309	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
310	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
311	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
312	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
313	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
314	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
315	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
316	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
317	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
318	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
319	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
320	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
321	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
322	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
323	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
324	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
325	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
326	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
327	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
328	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
329	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
330	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
331	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
332	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
333	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
334	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
343	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
344	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
345	3	4.51	4.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
346	4	3.98	3.98	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
347	5	4.75	4.75	4.75	4.75	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
348	7	4.31	4.31	4.31	4.31	4.31	4.31	0.00	0.00	0.00	0.21	0.02	0.79
349	7	4.57	4.57	4.57	4.57	4.57	4.57	0.00	0.00	0.00	0.21	0.02	0.79
350	7	4.79	4.79	4.79	4.79	4.79	4.79	0.00	0.00	0.00	0.21	0.02	0.79
351	8	4.40	4.40	4.40	4.40	4.40	4.40	4.40	0.00	0.00	0.21	0.02	0.79
352	8	4.47	4.47	4.47	4.47	4.47	4.47	4.47	0.00	0.00	0.21	0.02	0.79
353	8	4.43	4.43	4.43	4.43	4.43	4.43	4.43	0.00	0.00	0.21	0.02	0.79
354	8	4.38	4.38	4.38	4.38	4.38	4.38	4.38	0.00	0.00	0.21	0.02	0.79
355	8	4.43	4.43	4.43	4.43	4.43	4.43	4.43	0.00	0.00	0.21	0.02	0.79
356	8	4.45	4.45	4.45	4.45	4.45	4.45	4.45	0.00	0.00	0.21	0.02	0.79
357	7	5.00	5.00	5.00	5.00	5.00	5.00	0.00	0.00	0.00	0.21	0.02	0.79
358	7	4.93	4.93	4.93	4.93	4.93	4.93	0.00	0.00	0.00	0.21	0.02	0.79
359	7	4.86	4.86	4.86	4.86	4.86	4.86	0.00	0.00	0.00	0.21	0.02	0.79
360	7	4.73	4.73	4.73	4.73	4.73	4.73	0.00	0.00	0.00	0.21	0.02	0.79
361	7	4.59	4.59	4.59	4.59	4.59	4.59	0.00	0.00	0.00	0.21	0.02	0.79
362	7	4.42	4.42	4.42	4.42	4.42	4.42	0.00	0.00	0.00	0.21	0.02	0.79
363	6	4.33	4.33	4.33	4.33	4.33	0.00	0.00	0.00	0.00	0.21	0.02	0.79
364	4	4.45	4.45	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
365	2	4.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
366	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
367	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
368	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
369	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
370	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
371	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
372	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
373	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
374	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
375	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
376	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
377	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
378	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
379	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
380	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
381	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
382	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
383	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
384	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
385	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
386	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
387	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
388	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
389	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
390	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
399	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
400	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
401	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
402	3	4.02	4.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
403	5	4.20	4.20	4.20	4.20	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
404	6	4.80	4.80	4.80	4.80	4.80	0.00	0.00	0.00	0.00	0.21	0.02	0.79
405	8	4.48	4.48	4.48	4.48	4.48	4.48	4.48	0.00	0.00	0.21	0.02	0.79
406	9	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	0.00	0.21	0.02	0.79
407	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
408	9	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.21	0.02	0.79
409	9	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	0.00	0.21	0.02	0.79
410	8	4.75	4.75	4.75	4.75	4.75	4.75	4.75	0.00	0.00	0.21	0.02	0.79
411	8	4.61	4.61	4.61	4.61	4.61	4.61	4.61	0.00	0.00	0.21	0.02	0.79
412	8	4.48	4.48	4.48	4.48	4.48	4.48	4.48	0.00	0.00	0.21	0.02	0.79
413	8	4.42	4.42	4.42	4.42	4.42	4.42	4.42	0.00	0.00	0.21	0.02	0.79
414	7	4.97	4.97	4.97	4.97	4.97	4.97	0.00	0.00	0.00	0.21	0.02	0.79
415	7	4.89	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.00	0.21	0.02	0.79
416	7	4.80	4.80	4.80	4.80	4.80	4.80	0.00	0.00	0.00	0.21	0.02	0.79
417	7	4.66	4.66	4.66	4.66	4.66	4.66	0.00	0.00	0.00	0.21	0.02	0.79
418	7	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.00	0.00	0.21	0.02	0.79
419	7	4.33	4.33	4.33	4.33	4.33	4.33	0.00	0.00	0.00	0.21	0.02	0.79
420	5	4.91	4.91	4.91	4.91	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
421	4	3.98	3.98	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
422	2	3.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
423	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
424	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
425	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
426	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
427	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
428	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
429	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
430	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
431	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
432	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
433	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
434	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
435	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
436	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
437	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
438	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
439	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
440	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
441	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
442	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
443	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
444	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
445	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
455	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
456	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
457	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
458	3	3.66	3.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
459	4	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
460	6	4.23	4.23	4.23	4.23	4.23	0.00	0.00	0.00	0.00	0.21	0.02	0.79
461	7	4.76	4.76	4.76	4.76	4.76	4.76	0.00	0.00	0.00	0.21	0.02	0.79
462	9	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	0.00	0.21	0.02	0.79
463	9	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	0.00	0.21	0.02	0.79
464	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
465	9	4.58	4.58	4.58	4.58	4.58	4.58	4.58	4.58	0.00	0.21	0.02	0.79
466	9	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44	0.00	0.21	0.02	0.79
467	8	4.73	4.73	4.73	4.73	4.73	4.73	4.73	0.00	0.00	0.21	0.02	0.79
468	8	4.56	4.56	4.56	4.56	4.56	4.56	4.56	0.00	0.00	0.21	0.02	0.79
469	8	4.46	4.46	4.46	4.46	4.46	4.46	4.46	0.00	0.00	0.21	0.02	0.79
470	8	4.39	4.39	4.39	4.39	4.39	4.39	4.39	0.00	0.00	0.21	0.02	0.79
471	7	4.97	4.97	4.97	4.97	4.97	4.97	0.00	0.00	0.00	0.21	0.02	0.79
472	7	4.91	4.91	4.91	4.91	4.91	4.91	0.00	0.00	0.00	0.21	0.02	0.79
473	7	4.80	4.80	4.80	4.80	4.80	4.80	0.00	0.00	0.00	0.21	0.02	0.79
474	7	4.65	4.65	4.65	4.65	4.65	4.65	0.00	0.00	0.00	0.21	0.02	0.79
475	7	4.45	4.45	4.45	4.45	4.45	4.45	0.00	0.00	0.00	0.21	0.02	0.79
476	6	4.84	4.84	4.84	4.84	4.84	0.00	0.00	0.00	0.00	0.21	0.02	0.79
477	5	4.31	4.31	4.31	4.31	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
478	3	4.22	4.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
479	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
480	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
481	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
482	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
483	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
484	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
485	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
486	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
487	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
488	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
489	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
490	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
491	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
492	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
493	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
494	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
495	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
496	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
497	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
498	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
499	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
500	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
501	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
510	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
511	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
512	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
513	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
514	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
515	3	3.91	3.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
516	5	4.18	4.18	4.18	4.18	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
517	6	4.92	4.92	4.92	4.92	4.92	0.00	0.00	0.00	0.00	0.21	0.02	0.79
518	8	4.71	4.71	4.71	4.71	4.71	4.71	4.71	0.00	0.00	0.21	0.02	0.79
519	9	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	0.00	0.21	0.02	0.79
520	9	4.72	4.72	4.72	4.72	4.72	4.72	4.72	4.72	0.00	0.21	0.02	0.79
521	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
522	9	4.58	4.58	4.58	4.58	4.58	4.58	4.58	4.58	0.00	0.21	0.02	0.79
523	8	4.92	4.92	4.92	4.92	4.92	4.92	4.92	0.00	0.00	0.21	0.02	0.79
524	8	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.00	0.21	0.02	0.79
525	8	4.52	4.52	4.52	4.52	4.52	4.52	4.52	0.00	0.00	0.21	0.02	0.79
526	8	4.46	4.46	4.46	4.46	4.46	4.46	4.46	0.00	0.00	0.21	0.02	0.79
527	8	4.43	4.43	4.43	4.43	4.43	4.43	4.43	0.00	0.00	0.21	0.02	0.79
528	8	4.38	4.38	4.38	4.38	4.38	4.38	4.38	0.00	0.00	0.21	0.02	0.79
529	7	4.93	4.93	4.93	4.93	4.93	4.93	0.00	0.00	0.00	0.21	0.02	0.79
530	7	4.81	4.81	4.81	4.81	4.81	4.81	0.00	0.00	0.00	0.21	0.02	0.79
531	7	4.61	4.61	4.61	4.61	4.61	4.61	0.00	0.00	0.00	0.21	0.02	0.79
532	6	4.99	4.99	4.99	4.99	4.99	0.00	0.00	0.00	0.00	0.21	0.02	0.79
533	6	4.55	4.55	4.55	4.55	4.55	0.00	0.00	0.00	0.00	0.21	0.02	0.79
534	4	4.57	4.57	4.57	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
535	2	4.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
536	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
537	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
538	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
539	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
540	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
541	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
542	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
543	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
544	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
545	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
546	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
547	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
548	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
549	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
550	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
551	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
552	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
553	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
554	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
555	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
556	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
557	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
566	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
567	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
568	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
569	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
570	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
571	2	3.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
572	4	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
573	6	4.23	4.23	4.23	4.23	4.23	0.00	0.00	0.00	0.00	0.21	0.02	0.79
574	7	4.88	4.88	4.88	4.88	4.88	4.88	0.00	0.00	0.00	0.21	0.02	0.79
575	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
576	9	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	0.00	0.21	0.02	0.79
577	9	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	0.00	0.21	0.02	0.79
578	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
579	9	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	0.00	0.21	0.02	0.79
580	8	4.88	4.88	4.88	4.88	4.88	4.88	4.88	0.00	0.00	0.21	0.02	0.79
581	8	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.00	0.21	0.02	0.79
582	8	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.00	0.21	0.02	0.79
583	8	4.54	4.54	4.54	4.54	4.54	4.54	4.54	0.00	0.00	0.21	0.02	0.79
584	8	4.49	4.49	4.49	4.49	4.49	4.49	4.49	0.00	0.00	0.21	0.02	0.79
585	8	4.42	4.42	4.42	4.42	4.42	4.42	4.42	0.00	0.00	0.21	0.02	0.79
586	7	4.96	4.96	4.96	4.96	4.96	4.96	0.00	0.00	0.00	0.21	0.02	0.79
587	7	4.77	4.77	4.77	4.77	4.77	4.77	0.00	0.00	0.00	0.21	0.02	0.79
588	7	4.47	4.47	4.47	4.47	4.47	4.47	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
589	6	4.80	4.80	4.80	4.80	4.80	0.00	0.00	0.00	0.00	0.21	0.02	0.79
590	5	4.87	4.87	4.87	4.87	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
591	4	3.84	3.84	3.84	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
592	2	3.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
593	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
594	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
595	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
596	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
597	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
598	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
599	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
600	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
601	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
602	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
603	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
604	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
605	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
606	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
607	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
608	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
609	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
610	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
611	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
612	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
613	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
622	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
623	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
624	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
625	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
626	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
627	2	4.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
628	3	3.68	3.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
629	5	4.24	4.24	4.24	4.24	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
630	7	4.30	4.30	4.30	4.30	4.30	4.30	0.00	0.00	0.00	0.21	0.02	0.79
631	8	4.83	4.83	4.83	4.83	4.83	4.83	4.83	0.00	0.00	0.21	0.02	0.79
632	9	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	0.00	0.21	0.02	0.79
633	9	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	0.00	0.21	0.02	0.79
634	9	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.21	0.02	0.79
635	9	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	0.00	0.21	0.02	0.79
636	9	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.21	0.02	0.79
637	8	4.89	4.89	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.21	0.02	0.79
638	8	4.73	4.73	4.73	4.73	4.73	4.73	4.73	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
639	8	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.00	0.21	0.02	0.79
640	8	4.64	4.64	4.64	4.64	4.64	4.64	4.64	0.00	0.00	0.21	0.02	0.79
641	8	4.57	4.57	4.57	4.57	4.57	4.57	4.57	0.00	0.00	0.21	0.02	0.79
642	8	4.48	4.48	4.48	4.48	4.48	4.48	4.48	0.00	0.00	0.21	0.02	0.79
643	7	4.94	4.94	4.94	4.94	4.94	4.94	0.00	0.00	0.00	0.21	0.02	0.79
644	7	4.72	4.72	4.72	4.72	4.72	4.72	0.00	0.00	0.00	0.21	0.02	0.79
645	7	4.41	4.41	4.41	4.41	4.41	4.41	0.00	0.00	0.00	0.21	0.02	0.79
646	6	4.73	4.73	4.73	4.73	4.73	0.00	0.00	0.00	0.00	0.21	0.02	0.79
647	5	4.26	4.26	4.26	4.26	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
648	3	4.09	4.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
649	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
650	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
651	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
652	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
653	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
654	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
655	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
656	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
657	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
658	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
659	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
660	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
661	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
662	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
663	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
664	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
665	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
666	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
667	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
668	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
669	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
678	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
679	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
680	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
681	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
682	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
683	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
684	2	2.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
685	4	4.03	4.03	4.03	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
686	6	4.33	4.33	4.33	4.33	4.33	0.00	0.00	0.00	0.00	0.21	0.02	0.79
687	7	4.95	4.95	4.95	4.95	4.95	4.95	0.00	0.00	0.00	0.21	0.02	0.79
688	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
689	9	4.71	4.71	4.71	4.71	4.71	4.71	4.71	4.71	0.00	0.21	0.02	0.79
690	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
691	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
692	9	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.21	0.02	0.79
693	9	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.21	0.02	0.79
694	8	4.99	4.99	4.99	4.99	4.99	4.99	4.99	0.00	0.00	0.21	0.02	0.79
695	8	4.93	4.93	4.93	4.93	4.93	4.93	4.93	0.00	0.00	0.21	0.02	0.79
696	8	4.84	4.84	4.84	4.84	4.84	4.84	4.84	0.00	0.00	0.21	0.02	0.79
697	8	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.00	0.21	0.02	0.79
698	8	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.00	0.21	0.02	0.79
699	8	4.48	4.48	4.48	4.48	4.48	4.48	4.48	0.00	0.00	0.21	0.02	0.79
700	7	4.93	4.93	4.93	4.93	4.93	4.93	0.00	0.00	0.00	0.21	0.02	0.79
701	7	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.00	0.00	0.21	0.02	0.79
702	7	4.32	4.32	4.32	4.32	4.32	4.32	0.00	0.00	0.00	0.21	0.02	0.79
703	6	4.53	4.53	4.53	4.53	4.53	0.00	0.00	0.00	0.00	0.21	0.02	0.79
704	4	4.45	4.45	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
705	2	4.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
706	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
707	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
708	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
709	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
710	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
711	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
712	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
713	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
714	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
715	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
716	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
717	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
718	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
719	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
720	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
721	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
722	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
723	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
724	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
725	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
733	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
734	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
735	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
736	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
737	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
738	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
739	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
740	2	2.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
741	3	3.52	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
742	5	4.15	4.15	4.15	4.15	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
743	6	4.97	4.97	4.97	4.97	4.97	0.00	0.00	0.00	0.00	0.21	0.02	0.79
744	8	4.78	4.78	4.78	4.78	4.78	4.78	4.78	0.00	0.00	0.21	0.02	0.79
745	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
746	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
747	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
748	9	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	0.00	0.21	0.02	0.79
749	9	4.59	4.59	4.59	4.59	4.59	4.59	4.59	4.59	0.00	0.21	0.02	0.79
750	9	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.21	0.02	0.79
751	9	4.58	4.58	4.58	4.58	4.58	4.58	4.58	4.58	0.00	0.21	0.02	0.79
752	9	4.52	4.52	4.52	4.52	4.52	4.52	4.52	4.52	0.00	0.21	0.02	0.79
753	8	4.94	4.94	4.94	4.94	4.94	4.94	4.94	0.00	0.00	0.21	0.02	0.79
754	8	4.78	4.78	4.78	4.78	4.78	4.78	4.78	0.00	0.00	0.21	0.02	0.79
755	8	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.00	0.21	0.02	0.79
756	8	4.46	4.46	4.46	4.46	4.46	4.46	4.46	0.00	0.00	0.21	0.02	0.79
757	7	4.89	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.00	0.21	0.02	0.79
758	7	4.56	4.56	4.56	4.56	4.56	4.56	0.00	0.00	0.00	0.21	0.02	0.79
759	6	4.87	4.87	4.87	4.87	4.87	0.00	0.00	0.00	0.00	0.21	0.02	0.79
760	5	4.72	4.72	4.72	4.72	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
761	3	4.81	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
762	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
763	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
764	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
765	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
766	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
767	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
768	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
769	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
770	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
771	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
772	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
773	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
774	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
775	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
776	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
777	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
778	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
779	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
780	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
781	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
789	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
790	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
791	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
792	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
793	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
794	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
795	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
796	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
797	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
798	3	4.88	4.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
799	5	4.90	4.90	4.90	4.90	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
800	7	4.73	4.73	4.73	4.73	4.73	4.73	0.00	0.00	0.00	0.21	0.02	0.79
801	9	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.21	0.02	0.79
802	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
803	9	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	0.00	0.21	0.02	0.79
804	9	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	0.00	0.21	0.02	0.79
805	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
806	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
807	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
808	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
809	9	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	0.00	0.21	0.02	0.79
810	9	4.46	4.46	4.46	4.46	4.46	4.46	4.46	4.46	0.00	0.21	0.02	0.79
811	8	4.85	4.85	4.85	4.85	4.85	4.85	4.85	0.00	0.00	0.21	0.02	0.79
812	8	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.00	0.21	0.02	0.79
813	8	4.39	4.39	4.39	4.39	4.39	4.39	4.39	0.00	0.00	0.21	0.02	0.79
814	7	4.74	4.74	4.74	4.74	4.74	4.74	0.00	0.00	0.00	0.21	0.02	0.79
815	7	4.42	4.42	4.42	4.42	4.42	4.42	0.00	0.00	0.00	0.21	0.02	0.79
816	6	4.74	4.74	4.74	4.74	4.74	0.00	0.00	0.00	0.00	0.21	0.02	0.79
817	5	4.14	4.14	4.14	4.14	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
818	3	3.74	3.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
819	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
820	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
821	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
822	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
823	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
824	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
825	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
826	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
827	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
828	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
829	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
830	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
831	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
832	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
833	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
834	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
835	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
836	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
837	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
845	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
846	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
847	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
848	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
849	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
850	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
851	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
852	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
853	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
854	2	3.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
855	4	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
856	6	4.68	4.68	4.68	4.68	4.68	0.00	0.00	0.00	0.00	0.21	0.02	0.79
857	8	4.55	4.55	4.55	4.55	4.55	4.55	4.55	0.00	0.00	0.21	0.02	0.79
858	9	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.21	0.02	0.79
859	9	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	0.00	0.21	0.02	0.79
860	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
861	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
862	9	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.21	0.02	0.79
863	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
864	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
865	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
866	9	4.62	4.62	4.62	4.62	4.62	4.62	4.62	4.62	0.00	0.21	0.02	0.79
867	9	4.49	4.49	4.49	4.49	4.49	4.49	4.49	4.49	0.00	0.21	0.02	0.79
868	8	4.82	4.82	4.82	4.82	4.82	4.82	4.82	0.00	0.00	0.21	0.02	0.79
869	8	4.55	4.55	4.55	4.55	4.55	4.55	4.55	0.00	0.00	0.21	0.02	0.79
870	7	4.96	4.96	4.96	4.96	4.96	4.96	0.00	0.00	0.00	0.21	0.02	0.79
871	7	4.64	4.64	4.64	4.64	4.64	4.64	0.00	0.00	0.00	0.21	0.02	0.79
872	7	4.37	4.37	4.37	4.37	4.37	4.37	0.00	0.00	0.00	0.21	0.02	0.79
873	6	4.56	4.56	4.56	4.56	4.56	0.00	0.00	0.00	0.00	0.21	0.02	0.79
874	4	4.42	4.42	4.42	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
875	2	3.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
876	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
877	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
878	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
879	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
880	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
881	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
882	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
883	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
884	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
885	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
886	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
887	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
888	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
889	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
890	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
891	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
892	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
893	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
901	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
902	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
903	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
904	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
905	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
906	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
907	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
908	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
909	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
910	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
911	3	3.98	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
912	5	4.48	4.48	4.48	4.48	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
913	7	4.49	4.49	4.49	4.49	4.49	4.49	0.00	0.00	0.00	0.21	0.02	0.79
914	8	4.90	4.90	4.90	4.90	4.90	4.90	4.90	0.00	0.00	0.21	0.02	0.79
915	9	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.21	0.02	0.79
916	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
917	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
918	9	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.21	0.02	0.79
919	9	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.21	0.02	0.79
920	9	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	0.00	0.21	0.02	0.79
921	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
922	9	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	0.00	0.21	0.02	0.79
923	9	4.55	4.55	4.55	4.55	4.55	4.55	4.55	4.55	0.00	0.21	0.02	0.79
924	9	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	0.00	0.21	0.02	0.79
925	8	4.81	4.81	4.81	4.81	4.81	4.81	4.81	0.00	0.00	0.21	0.02	0.79
926	8	4.58	4.58	4.58	4.58	4.58	4.58	4.58	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
927	7	4.96	4.96	4.96	4.96	4.96	4.96	0.00	0.00	0.00	0.21	0.02	0.79
928	7	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.00	0.00	0.21	0.02	0.79
929	7	4.40	4.40	4.40	4.40	4.40	4.40	0.00	0.00	0.00	0.21	0.02	0.79
930	5	4.85	4.85	4.85	4.85	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
931	3	4.81	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
932	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
933	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
934	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
935	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
936	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
937	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
938	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
939	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
940	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
941	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
942	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
943	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
944	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
945	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
946	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
947	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
948	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
949	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
957	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
958	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
959	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
960	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
961	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
962	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
963	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
964	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
965	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
966	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
967	2	2.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
968	4	4.06	4.06	4.06	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
969	6	4.39	4.39	4.39	4.39	4.39	0.00	0.00	0.00	0.00	0.21	0.02	0.79
970	7	4.94	4.94	4.94	4.94	4.94	4.94	0.00	0.00	0.00	0.21	0.02	0.79
971	9	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	0.00	0.21	0.02	0.79
972	9	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	0.00	0.21	0.02	0.79
973	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
974	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
975	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
976	9	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.21	0.02	0.79
977	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
978	9	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.21	0.02	0.79
979	9	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	0.00	0.21	0.02	0.79
980	9	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.21	0.02	0.79
981	8	4.99	4.99	4.99	4.99	4.99	4.99	4.99	0.00	0.00	0.21	0.02	0.79
982	8	4.84	4.84	4.84	4.84	4.84	4.84	4.84	0.00	0.00	0.21	0.02	0.79
983	8	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.00	0.21	0.02	0.79
984	8	4.51	4.51	4.51	4.51	4.51	4.51	4.51	0.00	0.00	0.21	0.02	0.79
985	7	4.77	4.77	4.77	4.77	4.77	4.77	0.00	0.00	0.00	0.21	0.02	0.79
986	7	4.38	4.38	4.38	4.38	4.38	4.38	0.00	0.00	0.00	0.21	0.02	0.79
987	5	4.20	4.20	4.20	4.20	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
988	3	3.84	3.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
989	2	2.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
990	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
991	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
992	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
993	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
994	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
995	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
996	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
997	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
998	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
999	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1001	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1002	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1003	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1004	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1005	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1012	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1013	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1014	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1015	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1016	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1017	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1018	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1019	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1020	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1021	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1022	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1023	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1024	3	3.38	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1025	5	4.12	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1026	6	4.99	4.99	4.99	4.99	4.99	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1027	8	4.73	4.73	4.73	4.73	4.73	4.73	4.73	0.00	0.00	0.21	0.02	0.79
1028	9	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.21	0.02	0.79
1029	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
1030	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
1031	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
1032	9	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.21	0.02	0.79
1033	9	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	0.00	0.21	0.02	0.79
1034	9	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	0.00	0.21	0.02	0.79
1035	9	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	0.00	0.21	0.02	0.79
1036	9	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	0.00	0.21	0.02	0.79
1037	9	4.48	4.48	4.48	4.48	4.48	4.48	4.48	4.48	0.00	0.21	0.02	0.79
1038	9	4.45	4.45	4.45	4.45	4.45	4.45	4.45	4.45	0.00	0.21	0.02	0.79
1039	8	4.92	4.92	4.92	4.92	4.92	4.92	4.92	0.00	0.00	0.21	0.02	0.79
1040	8	4.77	4.77	4.77	4.77	4.77	4.77	4.77	0.00	0.00	0.21	0.02	0.79
1041	8	4.51	4.51	4.51	4.51	4.51	4.51	4.51	0.00	0.00	0.21	0.02	0.79
1042	7	4.74	4.74	4.74	4.74	4.74	4.74	0.00	0.00	0.00	0.21	0.02	0.79
1043	6	4.47	4.47	4.47	4.47	4.47	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1044	4	4.35	4.35	4.35	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1045	2	4.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1046	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1047	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1048	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1049	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1050	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1051	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1052	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1053	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1054	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1055	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1056	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1057	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1058	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1059	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1060	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1061	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1068	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1069	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1070	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1071	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1072	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1073	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1074	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1075	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1076	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1077	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1078	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1079	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1080	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1081	3	4.94	4.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1082	6	4.18	4.18	4.18	4.18	4.18	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1083	7	4.75	4.75	4.75	4.75	4.75	4.75	0.00	0.00	0.00	0.21	0.02	0.79
1084	8	4.89	4.89	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.21	0.02	0.79
1085	9	4.59	4.59	4.59	4.59	4.59	4.59	4.59	4.59	0.00	0.21	0.02	0.79
1086	9	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	0.00	0.21	0.02	0.79
1087	9	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	0.00	0.21	0.02	0.79
1088	9	4.62	4.62	4.62	4.62	4.62	4.62	4.62	4.62	0.00	0.21	0.02	0.79
1089	9	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.21	0.02	0.79
1090	9	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	0.00	0.21	0.02	0.79
1091	9	4.63	4.63	4.63	4.63	4.63	4.63	4.63	4.63	0.00	0.21	0.02	0.79
1092	9	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	0.00	0.21	0.02	0.79
1093	9	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	0.00	0.21	0.02	0.79
1094	9	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.21	0.02	0.79
1095	9	4.46	4.46	4.46	4.46	4.46	4.46	4.46	4.46	0.00	0.21	0.02	0.79
1096	8	4.89	4.89	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.21	0.02	0.79
1097	8	4.70	4.70	4.70	4.70	4.70	4.70	4.70	0.00	0.00	0.21	0.02	0.79
1098	7	4.89	4.89	4.89	4.89	4.89	4.89	0.00	0.00	0.00	0.21	0.02	0.79
1099	6	4.91	4.91	4.91	4.91	4.91	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1100	5	4.22	4.22	4.22	4.22	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1101	3	4.23	4.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1102	2	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1103	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1104	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1105	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1106	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1107	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1108	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1109	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1110	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1111	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1112	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1113	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1114	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1115	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1116	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1117	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1124	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1125	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1126	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1127	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1128	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1129	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1130	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1131	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1132	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1133	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1134	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1135	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1136	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1137	2	4.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1138	4	4.87	4.87	4.87	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1139	6	4.62	4.62	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1140	7	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.00	0.00	0.21	0.02	0.79
1141	7	4.93	4.93	4.93	4.93	4.93	4.93	0.00	0.00	0.00	0.21	0.02	0.79
1142	8	4.59	4.59	4.59	4.59	4.59	4.59	4.59	0.00	0.00	0.21	0.02	0.79
1143	8	4.84	4.84	4.84	4.84	4.84	4.84	4.84	0.00	0.00	0.21	0.02	0.79
1144	9	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	0.00	0.21	0.02	0.79
1145	9	4.59	4.59	4.59	4.59	4.59	4.59	4.59	4.59	0.00	0.21	0.02	0.79
1146	9	4.54	4.54	4.54	4.54	4.54	4.54	4.54	4.54	0.00	0.21	0.02	0.79
1147	8	4.99	4.99	4.99	4.99	4.99	4.99	4.99	0.00	0.00	0.21	0.02	0.79
1148	8	4.85	4.85	4.85	4.85	4.85	4.85	4.85	0.00	0.00	0.21	0.02	0.79
1149	8	4.67	4.67	4.67	4.67	4.67	4.67	4.67	0.00	0.00	0.21	0.02	0.79
1150	8	4.49	4.49	4.49	4.49	4.49	4.49	4.49	0.00	0.00	0.21	0.02	0.79
1151	7	4.92	4.92	4.92	4.92	4.92	4.92	0.00	0.00	0.00	0.21	0.02	0.79
1152	7	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.00	0.00	0.21	0.02	0.79
1153	7	4.33	4.33	4.33	4.33	4.33	4.33	0.00	0.00	0.00	0.21	0.02	0.79
1154	6	4.57	4.57	4.57	4.57	4.57	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1155	5	4.81	4.81	4.81	4.81	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1156	5	4.14	4.14	4.14	4.14	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1157	4	3.91	3.91	3.91	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1158	2	4.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1159	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1160	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1161	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1162	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1163	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1164	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1165	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1166	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1167	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1168	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1169	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1170	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1171	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1172	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1173	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1180	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1181	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1182	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1183	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1184	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1185	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1186	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1187	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1188	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1189	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1190	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1191	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1192	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1193	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1194	3	4.11	4.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1195	4	4.55	4.55	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1196	5	4.44	4.44	4.44	4.44	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1197	6	4.17	4.17	4.17	4.17	4.17	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1198	6	4.52	4.52	4.52	4.52	4.52	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1199	6	4.92	4.92	4.92	4.92	4.92	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1200	7	4.55	4.55	4.55	4.55	4.55	4.55	0.00	0.00	0.00	0.21	0.02	0.79
1201	7	4.68	4.68	4.68	4.68	4.68	4.68	0.00	0.00	0.00	0.21	0.02	0.79
1202	7	4.59	4.59	4.59	4.59	4.59	4.59	0.00	0.00	0.00	0.21	0.02	0.79
1203	7	4.46	4.46	4.46	4.46	4.46	4.46	0.00	0.00	0.00	0.21	0.02	0.79
1204	7	4.30	4.30	4.30	4.30	4.30	4.30	0.00	0.00	0.00	0.21	0.02	0.79
1205	6	4.79	4.79	4.79	4.79	4.79	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1206	6	4.58	4.58	4.58	4.58	4.58	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1207	6	4.36	4.36	4.36	4.36	4.36	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1208	5	4.94	4.94	4.94	4.94	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1209	5	4.46	4.46	4.46	4.46	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1210	4	4.86	4.86	4.86	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1211	4	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1212	3	4.38	4.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1213	3	3.41	3.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1214	2	3.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1215	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1216	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1217	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1218	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1219	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1220	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1221	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1222	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1223	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1224	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1225	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1226	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1227	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1228	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1229	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1236	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1237	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1238	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1239	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1240	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1241	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1242	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1243	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1244	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1245	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1246	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1247	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1248	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1249	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1250	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1251	2	3.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1252	3	3.99	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1253	4	3.91	3.91	3.91	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1254	4	4.64	4.64	4.64	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1255	5	4.11	4.11	4.11	4.11	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1256	5	4.47	4.47	4.47	4.47	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1257	5	4.74	4.74	4.74	4.74	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1258	5	4.66	4.66	4.66	4.66	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1259	5	4.49	4.49	4.49	4.49	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1260	5	4.27	4.27	4.27	4.27	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1261	5	4.01	4.01	4.01	4.01	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1262	4	4.68	4.68	4.68	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1263	4	4.21	4.21	4.21	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1264	3	4.93	4.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1265	3	4.14	4.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1266	2	4.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1267	2	3.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1268	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1269	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1270	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1271	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1272	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1292	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1293	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1294	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1295	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1296	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1297	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1298	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1299	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1300	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1301	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1302	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1303	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1304	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1305	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1306	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1307	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1308	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1309	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1310	2	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1311	3	3.82	3.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1312	3	4.59	4.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1313	3	4.99	4.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1314	3	4.85	4.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1315	3	4.58	4.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1316	3	4.21	4.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1317	3	3.52	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1318	2	4.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Number of Existing C&D Waste Layers	Layer1 Thickness	Layer2 Thickness	Layer3 Thickness	Layer4 Thickness	Layer5 Thickness	Layer6 Thickness	Layer7 Thickness	Layer8 Thickness	Layer9 Thickness	Primary Compression Index	Secondary Compression Index	Initial Void Ratio
1348	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1349	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1350	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1351	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1352	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1353	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1354	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1355	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1356	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1357	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1358	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1359	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1360	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1404	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1405	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1406	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79
1407	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.02	0.79

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
154	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
156	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
158	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195	117.48	234.97	234.97	234.97	234.97	234.97	234.97	234.97	234.97	0.32	0.00	0.00	0.00	0.00
196	93.80	187.60	187.60	187.60	187.60	187.60	187.60	187.60	187.60	0.31	0.00	0.00	0.00	0.00
197	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
199	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
201	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
203	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
204	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
205	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
207	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
208	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
209	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
212	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
213	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
214	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
216	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
217	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
219	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
222	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
223	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
242	162.35	487.06	811.76	974.11	974.11	974.11	974.11	974.11	974.11	0.33	0.17	0.11	0.00	0.00
243	167.45	502.35	837.26	1004.71	1004.71	1004.71	1004.71	1004.71	1004.71	0.36	0.18	0.12	0.00	0.00
246	151.22	453.66	756.10	1058.55	1209.77	1209.77	1209.77	1209.77	1209.77	0.37	0.20	0.14	0.11	0.00
247	153.13	459.38	765.63	1071.88	1225.00	1225.00	1225.00	1225.00	1225.00	0.39	0.21	0.15	0.12	0.00
248	153.69	461.06	768.44	1075.81	1229.50	1229.50	1229.50	1229.50	1229.50	0.40	0.22	0.16	0.12	0.00
249	151.23	453.69	756.15	1058.61	1209.84	1209.84	1209.84	1209.84	1209.84	0.42	0.23	0.17	0.13	0.00
250	169.34	508.02	846.69	1016.03	1016.03	1016.03	1016.03	1016.03	1016.03	0.46	0.26	0.18	0.00	0.00
251	156.66	469.99	626.65	626.65	626.65	626.65	626.65	626.65	626.65	0.46	0.26	0.00	0.00	0.00
252	98.61	197.23	197.23	197.23	197.23	197.23	197.23	197.23	197.23	0.37	0.00	0.00	0.00	0.00
253	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
254	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
256	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
257	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
258	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
259	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
260	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
261	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
263	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
264	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
265	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
266	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
267	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
271	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
272	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
273	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
276	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
277	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
278	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
289	159.88	479.65	639.54	639.54	639.54	639.54	639.54	639.54	639.54	0.35	0.18	0.00	0.00	0.00
290	143.88	431.64	719.39	863.27	863.27	863.27	863.27	863.27	863.27	0.38	0.21	0.15	0.00	0.00
291	142.53	427.60	712.66	997.73	1140.26	1140.26	1140.26	1140.26	1140.26	0.39	0.22	0.15	0.12	0.00
292	155.47	466.41	777.35	1088.29	1243.76	1243.76	1243.76	1243.76	1243.76	0.40	0.22	0.15	0.12	0.00
293	165.70	497.11	828.51	1159.92	1325.62	1325.62	1325.62	1325.62	1325.62	0.41	0.22	0.15	0.12	0.00
294	146.91	440.72	734.53	1028.35	1322.16	1469.07	1469.07	1469.07	1469.07	0.38	0.21	0.14	0.11	0.09
295	154.34	463.02	771.70	1080.38	1389.07	1543.41	1543.41	1543.41	1543.41	0.39	0.21	0.15	0.11	0.09

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
296	158.06	474.18	790.30	1106.42	1422.55	1580.61	1580.61	1580.61	1580.61	0.40	0.22	0.15	0.12	0.10
297	157.60	472.80	788.00	1103.20	1418.40	1576.00	1576.00	1576.00	1576.00	0.42	0.23	0.17	0.13	0.11
298	156.35	469.06	781.76	1094.46	1407.17	1563.52	1563.52	1563.52	1563.52	0.44	0.25	0.18	0.14	0.12
299	158.84	476.52	794.20	1111.88	1429.56	1588.41	1588.41	1588.41	1588.41	0.46	0.26	0.19	0.15	0.12
300	162.93	488.78	814.63	1140.48	1466.34	1629.26	1629.26	1629.26	1629.26	0.48	0.27	0.20	0.15	0.13
301	168.36	505.09	841.82	1178.55	1515.28	1683.65	1683.65	1683.65	1683.65	0.49	0.28	0.20	0.16	0.13
302	173.54	520.63	867.72	1214.80	1561.89	1735.43	1735.43	1735.43	1735.43	0.51	0.29	0.21	0.16	0.14
303	151.76	455.28	758.79	1062.31	1365.83	1669.34	1821.10	1821.10	1821.10	0.47	0.28	0.20	0.16	0.13
304	152.62	457.86	763.10	1068.34	1373.58	1678.82	1831.44	1831.44	1831.44	0.48	0.28	0.21	0.17	0.14
305	171.25	513.76	856.27	1198.77	1541.28	1712.53	1712.53	1712.53	1712.53	0.53	0.31	0.22	0.18	0.15
306	150.48	451.45	752.41	1053.37	1354.34	1504.82	1504.82	1504.82	1504.82	0.50	0.30	0.22	0.18	0.15
307	170.04	510.11	850.18	1020.22	1020.22	1020.22	1020.22	1020.22	1020.22	0.55	0.33	0.24	0.00	0.00
308	133.93	401.78	535.70	535.70	535.70	535.70	535.70	535.70	535.70	0.49	0.31	0.00	0.00	0.00
309	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
311	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
312	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
313	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
314	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
316	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
317	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
318	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
319	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
320	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
321	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
322	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
323	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
324	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
325	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
326	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
327	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
328	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
329	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
331	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
332	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
333	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
334	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
344	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345	158.01	474.04	632.05	632.05	632.05	632.05	632.05	632.05	632.05	0.41	0.22	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
346	139.32	417.96	696.60	835.92	835.92	835.92	835.92	835.92	835.92	0.42	0.24	0.18	0.00	0.00
347	166.19	498.57	830.95	1163.33	1329.52	1329.52	1329.52	1329.52	1329.52	0.49	0.28	0.20	0.16	0.00
348	150.71	452.13	753.55	1054.97	1356.39	1657.81	1808.52	1808.52	1808.52	0.47	0.28	0.20	0.16	0.13
349	159.79	479.36	798.93	1118.50	1438.07	1757.64	1917.43	1917.43	1917.43	0.49	0.28	0.20	0.16	0.13
350	167.63	502.90	838.17	1173.44	1508.71	1843.98	2011.61	2011.61	2011.61	0.50	0.28	0.21	0.16	0.13
351	154.10	462.30	770.50	1078.70	1386.90	1695.10	2003.30	2157.40	2157.40	0.47	0.27	0.20	0.16	0.13
352	156.40	469.20	782.00	1094.79	1407.59	1720.39	2033.19	2189.59	2189.59	0.48	0.28	0.21	0.16	0.14
353	155.02	465.05	775.09	1085.12	1395.15	1705.19	2015.22	2170.24	2170.24	0.50	0.30	0.22	0.17	0.15
354	153.30	459.91	766.52	1073.13	1379.74	1686.35	1992.96	2146.26	2146.26	0.51	0.31	0.23	0.18	0.15
355	155.04	465.11	775.18	1085.25	1395.32	1705.39	2015.46	2170.50	2170.50	0.53	0.32	0.24	0.19	0.16
356	155.84	467.51	779.19	1090.86	1402.53	1714.21	2025.88	2181.72	2181.72	0.53	0.32	0.24	0.20	0.16
357	174.89	524.66	874.44	1224.22	1573.99	1923.77	2098.66	2098.66	2098.66	0.58	0.35	0.26	0.21	0.17
358	172.45	517.35	862.25	1207.15	1552.05	1896.96	2069.41	2069.41	2069.41	0.58	0.35	0.26	0.21	0.17
359	170.19	510.56	850.93	1191.30	1531.67	1872.04	2042.23	2042.23	2042.23	0.57	0.35	0.26	0.21	0.17
360	165.47	496.40	827.34	1158.28	1489.21	1820.15	1985.62	1985.62	1985.62	0.57	0.35	0.26	0.21	0.18
361	160.63	481.89	803.15	1124.40	1445.66	1766.92	1927.55	1927.55	1927.55	0.57	0.35	0.26	0.21	0.18
362	154.55	463.64	772.73	1081.82	1390.91	1700.01	1854.55	1854.55	1854.55	0.56	0.35	0.27	0.22	0.18
363	151.42	454.27	757.12	1059.97	1362.82	1514.25	1514.25	1514.25	1514.25	0.57	0.36	0.27	0.22	0.19
364	155.72	467.17	778.62	934.35	934.35	934.35	934.35	934.35	934.35	0.59	0.37	0.29	0.00	0.00
365	169.74	339.48	339.48	339.48	339.48	339.48	339.48	339.48	339.48	0.64	0.00	0.00	0.00	0.00
366	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
367	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
368	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
370	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
371	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
372	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
373	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
374	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
376	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
377	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
378	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
379	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
380	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
381	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
382	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
383	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
384	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
386	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
387	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
388	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
389	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
399	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
401	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
402	140.59	421.78	562.37	562.37	562.37	562.37	562.37	562.37	562.37	0.46	0.28	0.00	0.00	0.00
403	147.02	441.07	735.11	1029.16	1176.18	1176.18	1176.18	1176.18	1176.18	0.50	0.30	0.22	0.18	0.00
404	168.07	504.22	840.37	1176.51	1512.66	1680.74	1680.74	1680.74	1680.74	0.56	0.34	0.25	0.20	0.17
405	156.64	469.92	783.20	1096.48	1409.76	1723.04	2036.32	2192.96	2192.96	0.55	0.33	0.25	0.20	0.17
406	161.36	484.08	806.79	1129.51	1452.23	1774.95	2097.67	2420.38	2581.74	0.55	0.34	0.25	0.20	0.17
407	164.21	492.64	821.06	1149.49	1477.91	1806.34	2134.76	2463.19	2627.40	0.56	0.34	0.25	0.20	0.17
408	162.11	486.34	810.57	1134.79	1459.02	1783.25	2107.47	2431.70	2593.81	0.56	0.34	0.25	0.20	0.17
409	155.72	467.17	778.61	1090.06	1401.50	1712.95	2024.39	2335.84	2491.56	0.56	0.34	0.26	0.21	0.18
410	166.15	498.46	830.77	1163.07	1495.38	1827.69	2159.99	2326.15	2326.15	0.60	0.37	0.28	0.23	0.19
411	161.49	484.46	807.43	1130.40	1453.37	1776.34	2099.31	2260.80	2260.80	0.59	0.37	0.28	0.23	0.19
412	156.89	470.68	784.47	1098.26	1412.05	1725.83	2039.62	2196.52	2196.52	0.59	0.37	0.28	0.23	0.19
413	154.58	463.75	772.92	1082.09	1391.25	1700.42	2009.59	2164.17	2164.17	0.58	0.37	0.28	0.23	0.19
414	174.10	522.30	870.51	1218.71	1566.91	1915.11	2089.21	2089.21	2089.21	0.63	0.39	0.30	0.24	0.20
415	171.24	513.73	856.22	1198.70	1541.19	1883.68	2054.92	2054.92	2054.92	0.63	0.39	0.30	0.24	0.20
416	167.90	503.69	839.48	1175.27	1511.06	1846.85	2014.75	2014.75	2014.75	0.62	0.39	0.30	0.24	0.21
417	163.11	489.33	815.55	1141.77	1467.99	1794.22	1957.33	1957.33	1957.33	0.62	0.39	0.30	0.24	0.21
418	157.67	473.00	788.33	1103.66	1418.99	1734.33	1891.99	1891.99	1891.99	0.61	0.39	0.30	0.24	0.21
419	151.45	454.34	757.24	1060.13	1363.02	1665.92	1817.36	1817.36	1817.36	0.60	0.39	0.30	0.25	0.21
420	171.96	515.87	859.78	1203.69	1375.65	1375.65	1375.65	1375.65	1375.65	0.67	0.43	0.33	0.27	0.00
421	139.22	417.66	696.10	835.32	835.32	835.32	835.32	835.32	835.32	0.59	0.39	0.31	0.00	0.00
422	122.23	244.46	244.46	244.46	244.46	244.46	244.46	244.46	244.46	0.55	0.00	0.00	0.00	0.00
423	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
424	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
425	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
426	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
427	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
428	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
429	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
430	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
431	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
432	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
433	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
434	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
436	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
437	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
438	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
439	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
440	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
441	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
442	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
444	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
445	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
456	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
457	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
458	128.17	384.52	512.69	512.69	512.69	512.69	512.69	512.69	512.69	0.46	0.28	0.00	0.00	0.00
459	144.33	433.00	721.67	866.01	866.01	866.01	866.01	866.01	866.01	0.53	0.33	0.25	0.00	0.00
460	147.98	443.94	739.91	1035.87	1331.83	1479.81	1479.81	1479.81	1479.81	0.55	0.35	0.27	0.22	0.18
461	166.62	499.85	833.08	1166.31	1499.54	1832.77	1999.39	1999.39	1999.39	0.61	0.38	0.29	0.24	0.20
462	159.68	479.03	798.38	1117.73	1437.08	1756.43	2075.79	2395.14	2554.81	0.60	0.38	0.29	0.24	0.20
463	164.68	494.03	823.39	1152.74	1482.10	1811.45	2140.81	2470.17	2634.84	0.61	0.38	0.29	0.24	0.20
464	163.95	491.84	819.74	1147.63	1475.53	1803.42	2131.32	2459.21	2623.16	0.61	0.38	0.29	0.24	0.20
465	160.34	481.02	801.69	1122.37	1443.05	1763.73	2084.41	2405.08	2565.42	0.61	0.38	0.29	0.24	0.20
466	155.56	466.67	777.79	1088.91	1400.02	1711.14	2022.25	2333.37	2488.93	0.60	0.38	0.29	0.24	0.21
467	165.39	496.18	826.97	1157.76	1488.54	1819.33	2150.12	2315.51	2315.51	0.64	0.41	0.31	0.26	0.22
468	159.69	479.07	798.44	1117.82	1437.20	1756.57	2075.95	2235.64	2235.64	0.63	0.41	0.31	0.26	0.22
469	156.08	468.24	780.40	1092.55	1404.71	1716.87	2029.03	2185.11	2185.11	0.63	0.41	0.31	0.26	0.22
470	153.79	461.36	768.94	1076.51	1384.09	1691.66	1999.24	2153.02	2153.02	0.62	0.40	0.31	0.26	0.22
471	173.94	521.82	869.71	1217.59	1565.47	1913.36	2087.30	2087.30	2087.30	0.68	0.43	0.33	0.27	0.23
472	171.85	515.55	859.25	1202.96	1546.66	1890.36	2062.21	2062.21	2062.21	0.67	0.43	0.33	0.27	0.23
473	167.86	503.59	839.31	1175.04	1510.76	1846.49	2014.35	2014.35	2014.35	0.67	0.43	0.33	0.27	0.23
474	162.75	488.25	813.75	1139.24	1464.74	1790.24	1952.99	1952.99	1952.99	0.66	0.43	0.33	0.27	0.23
475	155.82	467.45	779.09	1090.72	1402.36	1713.99	1869.81	1869.81	1869.81	0.65	0.42	0.33	0.27	0.23
476	169.52	508.55	847.59	1186.62	1525.66	1695.17	1695.17	1695.17	1695.17	0.70	0.45	0.35	0.29	0.25
477	150.91	452.73	754.55	1056.37	1207.28	1207.28	1207.28	1207.28	1207.28	0.66	0.44	0.34	0.29	0.00
478	147.71	443.12	590.82	590.82	590.82	590.82	590.82	590.82	590.82	0.65	0.44	0.00	0.00	0.00
479	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
480	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
481	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
482	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
483	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
484	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
486	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
487	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
488	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
489	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
492	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
493	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
494	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
497	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
498	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
499	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
501	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
510	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
511	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
512	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
513	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
514	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
515	136.88	410.63	547.51	547.51	547.51	547.51	547.51	547.51	547.51	0.53	0.34	0.00	0.00	0.00
516	146.41	439.24	732.07	1024.89	1171.31	1171.31	1171.31	1171.31	1171.31	0.58	0.37	0.29	0.24	0.00
517	172.03	516.09	860.15	1204.21	1548.27	1720.30	1720.30	1720.30	1720.30	0.66	0.42	0.32	0.26	0.23
518	164.99	494.96	824.93	1154.91	1484.88	1814.86	2144.83	2309.82	2309.82	0.66	0.42	0.33	0.27	0.23
519	165.12	495.36	825.60	1155.83	1486.07	1816.31	2146.55	2476.79	2641.91	0.66	0.42	0.33	0.27	0.23
520	165.17	495.50	825.83	1156.16	1486.49	1816.82	2147.15	2477.48	2642.64	0.66	0.42	0.33	0.27	0.23
521	163.93	491.79	819.64	1147.50	1475.36	1803.21	2131.07	2458.93	2622.85	0.65	0.42	0.32	0.27	0.23
522	160.30	480.91	801.52	1122.13	1442.74	1763.34	2083.95	2404.56	2564.86	0.65	0.42	0.32	0.27	0.23
S23	172.31	516.94	861.57	1206.19	1550.82	1895.45	2240.07	2412.39	2412.39	0.69	0.45	0.34	0.28	0.24
524	164.08	492.23	820.38	1148.53	1476.68	1804.83	2132.98	2297.06	2297.06	0.68	0.44	0.34	0.29	0.25
525	158.25	474.75	791.25	1107.76	1424.26	1740.76	2057.26	2215.51	2215.51	0.67	0.44	0.34	0.29	0.25
S26	156.26	468.78	781.31	1093.83	1406.35	1718.87	2031.39	2187.65	2187.65	0.66	0.44	0.34	0.29	0.25
527	155.08	465.24	775.39	1085.55	1395.71	1705.86	2016.02	2171.10	2171.10	0.66	0.44	0.34	0.28	0.24
528	153.19	459.56	765.94	1072.32	1378.69	1685.07	1991.44	2144.63	2144.63	0.66	0.43	0.34	0.28	0.24
529	172.41	517.24	862.07	1206.90	1551.73	1896.56	2068.97	2068.97	2068.97	0.71	0.46	0.36	0.30	0.26
530	168.31	504.93	841.54	1178.16	1514.78	1851.40	2019.71	2019.71	2019.71	0.70	0.46	0.36	0.30	0.26
531	161.37	484.12	806.87	1129.61	1452.36	1775.11	1936.48	1936.48	1936.48	0.69	0.45	0.36	0.30	0.26
532	174.60	523.79	872.98	1222.17	1571.36	1745.95	1745.95	1745.95	1745.95	0.74	0.49	0.38	0.32	0.27
533	159.16	477.48	795.80	1114.12	1432.44	1591.60	1591.60	1591.60	1591.60	0.70	0.47	0.37	0.31	0.27
534	159.91	479.72	799.53	959.44	959.44	959.44	959.44	959.44	959.44	0.72	0.48	0.38	0.00	0.00
535	159.73	319.46	319.46	319.46	319.46	319.46	319.46	319.46	319.46	0.72	0.00	0.00	0.00	0.00
536	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
537	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
539	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
540	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
541	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
542	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
543	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
544	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
545	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
546	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
547	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
549	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
551	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
552	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
553	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
554	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
556	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
557	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
567	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
569	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
570	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
571	138.04	276.07	276.07	276.07	276.07	276.07	276.07	276.07	276.07	0.55	0.00	0.00	0.00	0.00
572	144.26	432.77	721.28	865.54	865.54	865.54	865.54	865.54	865.54	0.59	0.38	0.30	0.00	0.00
573	148.07	444.22	740.37	1036.52	1332.67	1480.75	1480.75	1480.75	1480.75	0.63	0.41	0.32	0.27	0.23
574	170.92	512.75	854.58	1196.41	1538.24	1880.08	2050.99	2050.99	2050.99	0.70	0.46	0.36	0.30	0.25
575	163.82	491.45	819.09	1146.73	1474.36	1802.00	2129.64	2457.27	2621.09	0.69	0.46	0.36	0.30	0.26
576	165.46	496.37	827.28	1158.20	1489.11	1820.02	2150.94	2481.85	2647.31	0.69	0.46	0.36	0.30	0.25
577	164.79	494.37	823.94	1153.52	1483.10	1812.67	2142.25	2471.83	2636.62	0.69	0.45	0.35	0.29	0.25
578	163.61	490.83	818.05	1145.27	1472.49	1799.70	2126.92	2454.14	2617.75	0.69	0.45	0.35	0.29	0.25
579	158.57	475.70	792.84	1109.97	1427.10	1744.24	2061.37	2378.51	2537.07	0.68	0.45	0.35	0.29	0.25
580	170.81	512.43	854.05	1195.67	1537.29	1878.91	2220.53	2391.33	2391.33	0.72	0.48	0.37	0.31	0.27
581	163.88	491.63	819.38	1147.13	1474.88	1802.63	2130.38	2294.25	2294.25	0.71	0.47	0.37	0.31	0.27
582	160.94	482.83	804.71	1126.59	1448.48	1770.36	2092.24	2253.19	2253.19	0.70	0.47	0.37	0.31	0.27
583	159.04	477.11	795.19	1113.27	1431.34	1749.42	2067.50	2226.54	2226.54	0.70	0.47	0.37	0.31	0.27
584	157.13	471.40	785.67	1099.94	1414.21	1728.48	2042.75	2199.88	2199.88	0.69	0.46	0.37	0.31	0.27
585	154.83	464.48	774.14	1083.79	1393.45	1703.10	2012.76	2167.58	2167.58	0.69	0.46	0.36	0.30	0.26
586	173.60	520.80	868.01	1215.21	1562.41	1909.62	2083.22	2083.22	2083.22	0.74	0.49	0.39	0.32	0.28
587	166.99	500.98	834.97	1168.96	1502.95	1836.94	2003.93	2003.93	2003.93	0.73	0.49	0.38	0.32	0.28
588	156.56	469.67	782.78	1095.89	1409.00	1722.11	1878.66	1878.66	1878.66	0.71	0.48	0.38	0.32	0.28

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
589	168.11	504.34	840.57	1176.80	1513.02	1681.14	1681.14	1681.14	1681.14	0.75	0.51	0.40	0.34	0.29
590	170.29	510.88	851.46	1192.05	1362.34	1362.34	1362.34	1362.34	1362.34	0.77	0.52	0.41	0.35	0.00
591	134.37	403.10	671.83	806.19	806.19	806.19	806.19	806.19	806.19	0.66	0.46	0.37	0.00	0.00
592	112.86	225.71	225.71	225.71	225.71	225.71	225.71	225.71	225.71	0.59	0.00	0.00	0.00	0.00
593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
594	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
597	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
598	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
599	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
602	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
603	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
607	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
608	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
609	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
610	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
611	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
612	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
613	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
622	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627	149.24	298.48	298.48	298.48	298.48	298.48	298.48	298.48	298.48	0.60	0.00	0.00	0.00	0.00
628	128.72	386.16	514.88	514.88	514.88	514.88	514.88	514.88	514.88	0.56	0.38	0.00	0.00	0.00
629	148.39	445.17	741.95	1038.73	1187.12	1187.12	1187.12	1187.12	1187.12	0.64	0.42	0.33	0.28	0.00
630	150.59	451.76	752.94	1054.11	1355.28	1656.46	1807.04	1807.04	1807.04	0.67	0.45	0.35	0.30	0.26
631	169.20	507.61	846.02	1184.43	1522.84	1861.25	2199.66	2368.86	2368.86	0.74	0.49	0.39	0.32	0.28
632	164.75	494.25	823.75	1153.26	1482.76	1812.26	2141.76	2471.26	2636.01	0.72	0.48	0.38	0.32	0.28
633	165.02	495.06	825.09	1155.13	1485.17	1815.21	2145.24	2475.28	2640.30	0.73	0.48	0.38	0.32	0.28
634	164.38	493.15	821.92	1150.69	1479.46	1808.23	2137.00	2465.77	2630.15	0.72	0.48	0.38	0.32	0.28
635	162.94	488.81	814.69	1140.56	1466.44	1792.31	2118.19	2444.06	2607.00	0.72	0.48	0.38	0.32	0.27
636	157.55	472.66	787.77	1102.88	1417.98	1733.09	2048.20	2363.31	2520.86	0.71	0.48	0.38	0.32	0.27
637	171.22	513.66	856.10	1198.55	1540.99	1883.43	2225.87	2397.09	2397.09	0.75	0.50	0.40	0.33	0.29
638	165.47	496.41	827.35	1158.28	1489.22	1820.16	2151.10	2316.57	2316.57	0.74	0.50	0.39	0.33	0.29

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
639	164.16	492.48	820.80	1149.12	1477.44	1805.77	2134.09	2298.25	2298.25	0.74	0.50	0.39	0.33	0.29
640	162.23	486.70	811.16	1135.63	1460.10	1784.56	2109.03	2271.26	2271.26	0.73	0.49	0.39	0.33	0.29
641	159.83	479.49	799.16	1118.82	1438.48	1758.15	2077.81	2237.64	2237.64	0.73	0.49	0.39	0.33	0.29
642	156.67	470.02	783.37	1096.72	1410.07	1723.41	2036.76	2193.44	2193.44	0.72	0.49	0.39	0.33	0.28
643	173.03	519.10	865.17	1211.23	1557.30	1903.37	2076.40	2076.40	2076.40	0.77	0.52	0.41	0.35	0.30
644	165.04	495.12	825.19	1155.27	1485.35	1815.43	1980.47	1980.47	1980.47	0.76	0.51	0.41	0.34	0.30
645	154.50	463.50	772.50	1081.49	1390.49	1699.49	1853.99	1853.99	1853.99	0.73	0.50	0.40	0.34	0.30
646	165.59	496.77	827.94	1159.12	1490.30	1655.89	1655.89	1655.89	1655.89	0.77	0.53	0.42	0.36	0.31
647	149.10	447.31	745.52	1043.73	1192.83	1192.83	1192.83	1192.83	1192.83	0.73	0.50	0.41	0.35	0.00
648	143.13	429.40	572.53	572.53	572.53	572.53	572.53	572.53	572.53	0.71	0.50	0.00	0.00	0.00
649	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
651	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
652	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
653	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
654	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
655	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
656	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
657	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
658	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
659	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
660	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
661	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
662	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
663	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
664	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
666	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
667	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
668	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
669	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
678	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
679	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
680	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
681	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
682	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
683	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
684	97.20	194.40	194.40	194.40	194.40	194.40	194.40	194.40	194.40	0.47	0.00	0.00	0.00	0.00
685	141.03	423.10	705.16	846.20	846.20	846.20	846.20	846.20	846.20	0.63	0.42	0.34	0.00	0.00
686	151.57	454.71	757.85	1060.98	1364.12	1515.69	1515.69	1515.69	1515.69	0.68	0.46	0.36	0.30	0.26
687	173.28	519.85	866.41	1212.97	1559.54	1906.10	2079.38	2079.38	2079.38	0.77	0.51	0.40	0.34	0.29
688	164.01	492.04	820.06	1148.08	1476.11	1804.13	2132.16	2460.18	2624.19	0.75	0.51	0.40	0.34	0.30

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
689	164.69	494.08	823.47	1152.85	1482.24	1811.63	2141.01	2470.40	2635.09	0.75	0.51	0.41	0.34	0.30
690	164.30	492.89	821.48	1150.07	1478.66	1807.25	2135.85	2464.44	2628.73	0.75	0.51	0.41	0.34	0.30
691	163.83	491.50	819.16	1146.83	1474.49	1802.16	2129.82	2457.48	2621.32	0.75	0.51	0.40	0.34	0.30
692	161.04	483.13	805.21	1127.30	1449.39	1771.47	2093.56	2415.64	2576.68	0.74	0.50	0.40	0.34	0.30
693	157.35	472.06	786.76	1101.46	1416.17	1730.87	2045.57	2360.28	2517.63	0.73	0.50	0.40	0.34	0.29
694	174.68	524.04	873.39	1222.75	1572.11	1921.46	2270.82	2445.50	2445.50	0.79	0.53	0.42	0.35	0.31
695	172.62	517.87	863.11	1208.35	1553.60	1898.84	2244.08	2416.70	2416.70	0.78	0.53	0.42	0.35	0.31
696	169.30	507.91	846.51	1185.12	1523.72	1862.33	2200.93	2370.23	2370.23	0.77	0.52	0.42	0.35	0.31
697	164.67	494.00	823.33	1152.67	1482.00	1811.33	2140.67	2305.33	2305.33	0.76	0.52	0.41	0.35	0.31
698	161.16	483.47	805.78	1128.09	1450.41	1772.72	2095.03	2256.19	2256.19	0.75	0.51	0.41	0.35	0.30
699	156.91	470.74	784.56	1098.39	1412.21	1726.04	2039.86	2196.77	2196.77	0.74	0.51	0.41	0.35	0.30
700	172.64	517.91	863.18	1208.46	1553.73	1899.00	2071.64	2071.64	2071.64	0.80	0.54	0.43	0.37	0.32
701	163.81	491.42	819.04	1146.65	1474.27	1801.88	1965.69	1965.69	1965.69	0.78	0.53	0.43	0.36	0.32
702	151.34	454.01	756.69	1059.36	1362.04	1664.71	1816.05	1816.05	1816.05	0.74	0.51	0.42	0.35	0.31
703	158.63	475.88	793.14	1110.39	1427.65	1586.28	1586.28	1586.28	1586.28	0.78	0.54	0.43	0.37	0.33
704	155.71	467.13	778.56	934.27	934.27	934.27	934.27	934.27	934.27	0.77	0.54	0.44	0.00	0.00
705	149.61	299.22	299.22	299.22	299.22	299.22	299.22	299.22	299.22	0.76	0.00	0.00	0.00	0.00
706	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
707	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
708	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
709	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
710	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
711	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
712	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
713	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
714	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
715	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
716	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
717	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
718	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
719	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
720	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
721	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
722	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
723	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
724	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
725	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
733	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
734	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
736	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
737	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
738	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
739	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
740	90.57	181.14	181.14	181.14	181.14	181.14	181.14	181.14	181.14	0.46	0.00	0.00	0.00	0.00
741	123.05	369.16	492.21	492.21	492.21	492.21	492.21	492.21	492.21	0.58	0.40	0.00	0.00	0.00
742	145.22	435.66	726.11	1016.55	1161.77	1161.77	1161.77	1161.77	1161.77	0.67	0.45	0.36	0.31	0.00
743	174.07	522.21	870.34	1218.48	1566.62	1740.68	1740.68	1740.68	1740.68	0.78	0.52	0.42	0.35	0.30
744	167.45	502.35	837.24	1172.14	1507.04	1841.94	2176.83	2344.28	2344.28	0.78	0.53	0.42	0.36	0.31
745	164.14	492.41	820.68	1148.96	1477.23	1805.50	2133.78	2462.05	2626.19	0.77	0.53	0.42	0.36	0.31
746	163.94	491.82	819.71	1147.59	1475.47	1803.36	2131.24	2459.12	2623.06	0.78	0.53	0.43	0.36	0.32
747	163.57	490.72	817.87	1145.02	1472.17	1799.31	2126.46	2453.61	2617.18	0.77	0.53	0.43	0.36	0.32
748	162.46	487.39	812.32	1137.24	1462.17	1787.09	2112.02	2436.95	2599.41	0.77	0.53	0.42	0.36	0.31
749	160.63	481.89	803.15	1124.40	1445.66	1766.92	2088.18	2409.44	2570.06	0.76	0.53	0.42	0.36	0.31
750	161.05	483.16	805.27	1127.38	1449.49	1771.60	2093.71	2415.82	2576.87	0.76	0.52	0.42	0.36	0.31
751	160.33	480.99	801.64	1122.30	1442.96	1763.62	2084.27	2404.93	2565.26	0.76	0.52	0.42	0.36	0.31
752	158.05	474.14	790.24	1106.33	1422.43	1738.52	2054.62	2370.71	2528.76	0.76	0.52	0.42	0.35	0.31
753	172.81	518.42	864.03	1209.64	1555.25	1900.87	2246.48	2419.28	2419.28	0.81	0.55	0.44	0.37	0.33
754	167.14	501.42	835.71	1169.99	1504.27	1838.55	2172.84	2339.98	2339.98	0.79	0.54	0.44	0.37	0.32
755	162.10	486.30	810.50	1134.70	1458.90	1783.10	2107.30	2269.40	2269.40	0.78	0.54	0.43	0.37	0.32
756	156.23	468.70	781.17	1093.64	1406.11	1718.58	2031.05	2187.28	2187.28	0.76	0.53	0.43	0.36	0.32
757	170.98	512.93	854.89	1196.84	1538.80	1880.75	2051.73	2051.73	2051.73	0.82	0.56	0.45	0.38	0.34
758	159.57	478.70	797.84	1116.98	1436.11	1755.25	1914.82	1914.82	1914.82	0.79	0.55	0.44	0.38	0.33
759	170.49	511.47	852.45	1193.44	1534.42	1704.91	1704.91	1704.91	1704.91	0.83	0.58	0.47	0.40	0.35
760	165.20	495.60	826.00	1156.40	1321.59	1321.59	1321.59	1321.59	1321.59	0.82	0.57	0.47	0.40	0.00
761	168.52	505.56	674.08	674.08	674.08	674.08	674.08	674.08	674.08	0.84	0.59	0.00	0.00	0.00
762	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
763	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
764	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
765	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
766	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
767	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
768	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
769	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
771	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
772	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
773	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
774	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
775	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
776	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
777	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
778	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
779	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
780	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
781	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
789	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
790	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
791	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
792	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
793	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
794	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
795	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
796	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
797	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
798	170.90	512.70	683.60	683.60	683.60	683.60	683.60	683.60	683.60	0.76	0.51	0.00	0.00	0.00
799	171.62	514.86	858.11	1201.35	1372.97	1372.97	1372.97	1372.97	1372.97	0.78	0.53	0.42	0.35	0.00
800	165.58	496.74	827.91	1159.07	1490.23	1821.40	1986.98	1986.98	1986.98	0.78	0.53	0.43	0.36	0.32
801	160.90	482.70	804.50	1126.30	1448.10	1769.90	2091.70	2413.50	2574.39	0.78	0.54	0.43	0.37	0.32
802	163.65	490.96	818.26	1145.56	1472.87	1800.17	2127.47	2454.78	2618.43	0.80	0.55	0.45	0.38	0.33
803	163.23	489.68	816.13	1142.58	1469.03	1795.48	2121.93	2448.38	2611.60	0.80	0.55	0.45	0.38	0.33
804	163.18	489.54	815.90	1142.27	1468.63	1794.99	2121.35	2447.71	2610.89	0.80	0.55	0.44	0.38	0.33
805	163.61	490.82	818.03	1145.24	1472.45	1799.66	2126.87	2454.08	2617.68	0.80	0.55	0.44	0.38	0.33
806	163.75	491.26	818.77	1146.27	1473.78	1801.29	2128.79	2456.30	2620.05	0.80	0.55	0.44	0.38	0.33
807	163.65	490.95	818.25	1145.55	1472.85	1800.14	2127.44	2454.74	2618.39	0.79	0.55	0.44	0.38	0.33
808	163.42	490.27	817.12	1143.97	1470.82	1797.66	2124.51	2451.36	2614.78	0.79	0.55	0.44	0.38	0.33
809	161.31	483.93	806.56	1129.18	1451.80	1774.43	2097.05	2419.67	2580.98	0.79	0.54	0.44	0.37	0.33
810	156.26	468.77	781.28	1093.80	1406.31	1718.82	2031.34	2343.85	2500.11	0.77	0.54	0.43	0.37	0.33
811	169.88	509.64	849.40	1189.15	1528.91	1868.67	2208.43	2378.31	2378.31	0.82	0.57	0.46	0.39	0.34
812	161.90	485.71	809.52	1133.33	1457.14	1780.95	2104.76	2266.66	2266.66	0.80	0.56	0.45	0.38	0.34
813	153.49	460.47	767.44	1074.42	1381.40	1688.37	1995.35	2148.84	2148.84	0.78	0.54	0.44	0.38	0.33
814	165.91	497.73	829.55	1161.38	1493.20	1825.02	1990.93	1990.93	1990.93	0.82	0.57	0.47	0.40	0.35
815	154.62	463.86	773.10	1082.34	1391.58	1700.83	1855.45	1855.45	1855.45	0.79	0.56	0.45	0.39	0.34
816	165.89	497.67	829.46	1161.24	1493.02	1658.91	1658.91	1658.91	1658.91	0.84	0.59	0.48	0.41	0.36
817	145.06	435.18	725.30	1015.42	1160.48	1160.48	1160.48	1160.48	1160.48	0.77	0.54	0.45	0.39	0.00
818	130.81	392.42	523.22	523.22	523.22	523.22	523.22	523.22	523.22	0.71	0.51	0.00	0.00	0.00
819	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
820	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
821	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
822	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
823	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
824	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
825	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
826	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
827	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
828	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
829	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
830	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
831	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
832	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
833	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
834	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
835	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
836	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
837	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
845	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
846	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
847	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
848	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
849	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
851	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
852	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
853	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
854	136.82	273.63	273.63	273.63	273.63	273.63	273.63	273.63	273.63	0.67	0.00	0.00	0.00	0.00
855	161.76	485.27	808.78	970.54	970.54	970.54	970.54	970.54	970.54	0.76	0.52	0.42	0.00	0.00
856	163.72	491.16	818.59	1146.03	1473.47	1637.19	1637.19	1637.19	1637.19	0.78	0.54	0.43	0.37	0.32
857	159.20	477.60	796.00	1114.40	1432.80	1751.20	2069.60	2228.80	2228.80	0.78	0.54	0.44	0.38	0.33
858	162.07	486.22	810.36	1134.51	1458.65	1782.79	2106.94	2431.08	2593.15	0.81	0.56	0.46	0.39	0.34
859	162.60	487.79	812.99	1138.18	1463.38	1788.57	2113.77	2438.96	2601.56	0.81	0.57	0.46	0.40	0.35
860	163.41	490.23	817.06	1143.88	1470.70	1797.52	2124.34	2451.17	2614.58	0.82	0.57	0.46	0.40	0.35
861	164.03	492.08	820.13	1148.19	1476.24	1804.29	2132.35	2460.40	2624.43	0.82	0.57	0.46	0.40	0.35
862	164.42	493.27	822.12	1150.97	1479.82	1808.67	2137.52	2466.37	2630.79	0.82	0.57	0.46	0.39	0.35
863	164.24	492.72	821.20	1149.69	1478.17	1806.65	2135.13	2463.62	2627.86	0.82	0.57	0.46	0.39	0.35
864	163.92	491.77	819.62	1147.47	1475.32	1803.17	2131.02	2458.87	2622.79	0.81	0.57	0.46	0.39	0.35
865	163.57	490.72	817.87	1145.02	1472.16	1799.31	2126.46	2453.61	2617.18	0.81	0.57	0.46	0.39	0.34
866	161.65	484.96	808.27	1131.58	1454.88	1778.19	2101.50	2424.81	2586.46	0.81	0.56	0.46	0.39	0.34
867	157.17	471.52	785.86	1100.21	1414.56	1728.90	2043.25	2357.59	2514.77	0.79	0.56	0.45	0.39	0.34
868	168.72	506.15	843.58	1181.01	1518.45	1855.88	2193.31	2362.03	2362.03	0.84	0.59	0.47	0.41	0.36
869	159.40	478.20	797.00	1115.81	1434.61	1753.41	2072.21	2231.61	2231.61	0.81	0.57	0.46	0.40	0.35
870	173.45	520.36	867.27	1214.18	1561.09	1907.99	2081.45	2081.45	2081.45	0.87	0.61	0.49	0.42	0.37
871	162.28	486.85	811.42	1135.99	1460.56	1785.13	1947.41	1947.41	1947.41	0.83	0.59	0.48	0.41	0.36
872	152.82	458.45	764.09	1069.72	1375.36	1680.99	1833.81	1833.81	1833.81	0.80	0.57	0.47	0.40	0.36
873	159.51	478.53	797.55	1116.57	1435.59	1595.10	1595.10	1595.10	1595.10	0.83	0.59	0.48	0.42	0.37
874	154.77	464.31	773.85	928.61	928.61	928.61	928.61	928.61	928.61	0.82	0.58	0.48	0.00	0.00
875	136.66	273.31	273.31	273.31	273.31	273.31	273.31	273.31	273.31	0.75	0.00	0.00	0.00	0.00
876	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
877	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Iniitial Stress	Layer2 Iniitial Stress	Layer3 Iniitial Stress	Layer4 Iniitial Stress	Layer5 Iniitial Stress	Layer6 Iniitial Stress	Layer7 Iniitial Stress	Layer8 Iniitial Stress	Layer9 Iniitial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
878	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
879	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
880	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
881	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
882	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
883	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
884	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
885	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
886	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
887	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
888	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
889	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
890	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
891	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
892	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
893	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
901	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
902	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
903	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
904	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
905	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
906	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
907	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
908	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
909	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
911	139.22	417.66	556.88	556.88	556.88	556.88	556.88	556.88	556.88	0.69	0.48	0.00	0.00	0.00
912	156.76	470.29	783.82	1097.35	1254.11	1254.11	1254.11	1254.11	1254.11	0.77	0.53	0.43	0.37	0.00
913	157.14	471.41	785.69	1099.97	1414.24	1728.52	1885.66	1885.66	1885.66	0.78	0.55	0.44	0.38	0.33
914	171.64	514.92	858.20	1201.47	1544.75	1888.03	2231.31	2402.95	2402.95	0.85	0.59	0.48	0.41	0.36
915	162.09	486.26	810.44	1134.62	1458.79	1782.97	2107.15	2431.32	2593.41	0.83	0.58	0.47	0.41	0.36
916	163.51	490.53	817.55	1144.57	1471.59	1798.61	2125.63	2452.65	2616.16	0.84	0.59	0.48	0.41	0.36
917	164.07	492.22	820.37	1148.51	1476.66	1804.81	2132.95	2461.10	2625.17	0.84	0.59	0.48	0.41	0.36
918	164.55	493.64	822.73	1151.82	1480.91	1810.00	2139.09	2468.18	2632.72	0.84	0.59	0.48	0.41	0.36
919	164.39	493.17	821.95	1150.73	1479.51	1808.29	2137.07	2465.86	2630.25	0.84	0.59	0.48	0.41	0.36
920	164.03	492.10	820.17	1148.24	1476.31	1804.38	2132.44	2460.51	2624.55	0.83	0.59	0.48	0.41	0.36
921	163.67	491.02	818.37	1145.72	1473.06	1800.41	2127.76	2455.10	2618.78	0.83	0.58	0.48	0.41	0.36
922	163.09	489.27	815.44	1141.62	1467.80	1793.98	2120.15	2446.33	2609.42	0.83	0.58	0.48	0.41	0.36
923	159.23	477.70	796.17	1114.64	1433.10	1751.57	2070.04	2388.51	2547.74	0.82	0.58	0.47	0.40	0.36
924	155.74	467.23	778.72	1090.21	1401.70	1713.19	2024.67	2336.16	2491.91	0.81	0.57	0.47	0.40	0.36
925	168.32	504.97	841.61	1178.26	1514.91	1851.55	2188.20	2356.52	2356.52	0.86	0.60	0.49	0.42	0.37
926	160.42	481.26	802.11	1122.95	1443.79	1764.64	2085.48	2245.90	2245.90	0.83	0.59	0.48	0.42	0.37

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
927	173.48	520.43	867.38	1214.34	1561.29	1908.25	2081.72	2081.72	2081.72	0.89	0.62	0.51	0.44	0.39
928	164.48	493.45	822.41	1151.38	1480.35	1809.31	1973.80	1973.80	1973.80	0.86	0.61	0.50	0.43	0.38
929	154.13	462.39	770.65	1078.91	1387.17	1695.44	1849.57	1849.57	1849.57	0.82	0.59	0.48	0.42	0.37
930	169.61	508.83	848.05	1187.27	1356.88	1356.88	1356.88	1356.88	1356.88	0.89	0.63	0.52	0.44	0.00
931	168.52	505.56	674.09	674.09	674.09	674.09	674.09	674.09	674.09	0.89	0.63	0.00	0.00	0.00
932	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
933	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
934	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
935	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
936	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
937	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
939	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
941	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
942	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
943	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
944	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
946	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
947	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
948	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
957	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
958	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
959	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
960	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
962	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
963	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
964	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
965	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
966	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
967	97.17	194.35	194.35	194.35	194.35	194.35	194.35	194.35	194.35	0.54	0.00	0.00	0.00	0.00
968	142.19	426.58	710.96	853.15	853.15	853.15	853.15	853.15	853.15	0.72	0.51	0.41	0.00	0.00
969	153.76	461.28	768.79	1076.31	1383.83	1537.59	1537.59	1537.59	1537.59	0.78	0.54	0.44	0.38	0.33
970	172.88	518.63	864.38	1210.13	1555.88	1901.63	2074.51	2074.51	2074.51	0.86	0.60	0.49	0.42	0.37
971	160.09	480.26	800.43	1120.61	1440.78	1760.96	2081.13	2401.30	2561.39	0.83	0.59	0.48	0.41	0.36
972	162.58	487.74	812.90	1138.06	1463.22	1788.38	2113.55	2438.71	2601.29	0.85	0.60	0.49	0.42	0.37
973	163.72	491.17	818.62	1146.07	1473.52	1800.97	2128.41	2455.86	2619.59	0.85	0.61	0.50	0.43	0.38
974	163.96	491.89	819.81	1147.74	1475.66	1803.59	2131.51	2459.44	2623.40	0.85	0.61	0.50	0.43	0.38
975	163.96	491.87	819.78	1147.70	1475.61	1803.52	2131.44	2459.35	2623.31	0.85	0.60	0.49	0.43	0.38

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
976	163.79	491.38	818.97	1146.55	1474.14	1801.72	2129.31	2456.90	2620.69	0.85	0.60	0.49	0.43	0.38
977	163.56	490.69	817.82	1144.95	1472.08	1799.21	2126.34	2453.47	2617.03	0.85	0.60	0.49	0.42	0.38
978	162.14	486.41	810.68	1134.95	1459.22	1783.49	2107.76	2432.03	2594.17	0.85	0.60	0.49	0.42	0.37
979	159.75	479.24	798.73	1118.22	1437.71	1757.20	2076.70	2396.19	2555.93	0.84	0.59	0.49	0.42	0.37
980	157.62	472.87	788.12	1103.36	1418.61	1733.86	2049.10	2364.35	2521.97	0.83	0.59	0.48	0.42	0.37
981	174.82	524.45	874.09	1223.72	1573.35	1922.99	2272.62	2447.44	2447.44	0.90	0.63	0.51	0.44	0.39
982	169.31	507.92	846.54	1185.15	1523.77	1862.38	2200.99	2370.30	2370.30	0.88	0.62	0.51	0.44	0.39
983	164.59	493.76	822.94	1152.11	1481.29	1810.46	2139.64	2304.23	2304.23	0.86	0.61	0.50	0.43	0.38
984	157.79	473.38	788.97	1104.56	1420.15	1735.73	2051.32	2209.12	2209.12	0.84	0.60	0.49	0.43	0.38
985	166.90	500.71	834.52	1168.33	1502.14	1835.95	2002.85	2002.85	2002.85	0.88	0.63	0.51	0.44	0.39
986	153.42	460.27	767.12	1073.97	1380.82	1687.66	1841.09	1841.09	1841.09	0.83	0.60	0.49	0.43	0.38
987	147.02	441.05	735.09	1029.13	1176.15	1176.15	1176.15	1176.15	1176.15	0.81	0.59	0.49	0.42	0.00
988	134.23	402.69	536.92	536.92	536.92	536.92	536.92	536.92	536.92	0.76	0.56	0.00	0.00	0.00
989	104.70	209.39	209.39	209.39	209.39	209.39	209.39	209.39	209.39	0.64	0.00	0.00	0.00	0.00
990	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
991	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
992	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
993	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
994	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
995	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
996	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Iniitial Stress	Layer2 Iniitial Stress	Layer3 Iniitial Stress	Layer4 Iniitial Stress	Layer5 Iniitial Stress	Layer6 Iniitial Stress	Layer7 Iniitial Stress	Layer8 Iniitial Stress	Layer9 Iniitial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1024	118.16	354.47	472.62	472.62	472.62	472.62	472.62	472.62	472.62	0.64	0.46	0.00	0.00	0.00
1025	144.28	432.84	721.40	1009.96	1154.24	1154.24	1154.24	1154.24	1154.24	0.75	0.53	0.43	0.37	0.00
1026	174.79	524.38	873.97	1223.56	1573.15	1747.95	1747.95	1747.95	1747.95	0.87	0.61	0.49	0.42	0.37
1027	165.63	496.88	828.14	1159.40	1490.65	1821.91	2153.17	2318.80	2318.80	0.85	0.60	0.49	0.42	0.38
1028	161.06	483.19	805.31	1127.44	1449.56	1771.68	2093.81	2415.93	2577.00	0.85	0.61	0.50	0.43	0.38
1029	163.29	489.87	816.45	1143.03	1469.61	1796.19	2122.77	2449.35	2612.64	0.87	0.62	0.51	0.44	0.39
1030	163.38	490.14	816.90	1143.66	1470.42	1797.18	2123.94	2450.70	2614.08	0.87	0.62	0.51	0.44	0.39
1031	163.35	490.04	816.73	1143.42	1470.12	1796.81	2123.50	2450.19	2613.54	0.87	0.62	0.51	0.44	0.39
1032	163.35	490.06	816.77	1143.47	1470.18	1796.89	2123.60	2450.30	2613.66	0.87	0.62	0.51	0.44	0.39
1033	163.12	489.35	815.58	1141.81	1468.04	1794.27	2120.50	2446.73	2609.84	0.87	0.62	0.51	0.44	0.39
1034	162.85	488.54	814.24	1139.93	1465.63	1791.32	2117.02	2442.71	2605.56	0.86	0.62	0.51	0.44	0.39
1035	160.88	482.63	804.38	1126.13	1447.89	1769.64	2091.39	2413.15	2574.02	0.86	0.61	0.50	0.44	0.39
1036	158.69	476.06	793.43	1110.81	1428.18	1745.56	2062.93	2380.30	2538.99	0.85	0.61	0.50	0.43	0.38
1037	156.79	470.38	783.97	1097.55	1411.14	1724.73	2038.31	2351.90	2508.69	0.84	0.60	0.50	0.43	0.38
1038	155.87	467.62	779.37	1091.12	1402.87	1714.62	2026.37	2338.12	2494.00	0.84	0.60	0.49	0.43	0.38
1039	172.26	516.78	861.30	1205.83	1550.35	1894.87	2239.39	2411.65	2411.65	0.90	0.64	0.53	0.45	0.40
1040	167.11	501.32	835.53	1169.75	1503.96	1838.17	2172.39	2339.49	2339.49	0.89	0.63	0.52	0.45	0.40
1041	157.89	473.67	789.45	1105.23	1421.01	1736.79	2052.57	2210.46	2210.46	0.85	0.61	0.51	0.44	0.39
1042	165.82	497.46	829.10	1160.74	1492.38	1824.02	1989.84	1989.84	1989.84	0.89	0.64	0.53	0.46	0.41
1043	156.29	468.87	781.45	1094.03	1406.61	1562.90	1562.90	1562.90	1562.90	0.86	0.62	0.51	0.45	0.40
1044	152.34	457.03	761.72	914.06	914.06	914.06	914.06	914.06	914.06	0.85	0.61	0.51	0.00	0.00
1045	145.86	291.71	291.71	291.71	291.71	291.71	291.71	291.71	291.71	0.82	0.00	0.00	0.00	0.00
1046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1047	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1048	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1052	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1053	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1056	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1057	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1058	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1059	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1060	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1061	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1068	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1069	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1070	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1071	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1072	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1073	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1074	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1075	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1077	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1078	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1079	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1080	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1081	172.95	518.84	691.79	691.79	691.79	691.79	691.79	691.79	691.79	0.86	0.60	0.00	0.00	0.00
1082	146.31	438.92	731.53	1024.14	1316.76	1463.06	1463.06	1463.06	1463.06	0.77	0.55	0.45	0.39	0.34
1083	166.28	498.83	831.39	1163.94	1496.50	1829.05	1995.33	1995.33	1995.33	0.86	0.61	0.50	0.43	0.38
1084	171.21	513.63	856.06	1198.48	1540.90	1883.32	2225.75	2396.96	2396.96	0.89	0.63	0.52	0.45	0.40
1085	160.82	482.45	804.08	1125.71	1447.34	1768.97	2090.60	2412.24	2573.05	0.87	0.62	0.51	0.44	0.39
1086	161.35	484.05	806.75	1129.45	1452.15	1774.85	2097.56	2420.26	2581.61	0.88	0.63	0.52	0.45	0.40
1087	161.42	484.27	807.12	1129.97	1452.82	1775.67	2098.52	2421.36	2582.79	0.88	0.63	0.52	0.45	0.40
1088	161.86	485.57	809.29	1133.00	1456.71	1780.43	2104.14	2427.86	2589.71	0.88	0.63	0.52	0.45	0.40
1089	162.02	486.05	810.09	1134.13	1458.16	1782.20	2106.24	2430.27	2592.29	0.88	0.63	0.52	0.45	0.40
1090	162.27	486.82	811.37	1135.92	1460.47	1785.02	2109.57	2434.12	2596.39	0.88	0.63	0.52	0.45	0.40
1091	161.93	485.79	809.65	1133.51	1457.38	1781.24	2105.10	2428.96	2590.89	0.88	0.63	0.52	0.45	0.40
1092	159.73	479.18	798.63	1118.09	1437.54	1756.99	2076.45	2395.90	2555.63	0.87	0.62	0.52	0.45	0.40
1093	158.42	475.27	792.11	1108.96	1425.80	1742.65	2059.49	2376.34	2534.76	0.86	0.62	0.51	0.45	0.40
1094	157.35	472.04	786.73	1101.42	1416.11	1730.80	2045.49	2360.18	2517.53	0.86	0.62	0.51	0.44	0.40
1095	155.99	467.96	779.93	1091.90	1403.87	1715.84	2027.81	2339.79	2495.77	0.85	0.61	0.51	0.44	0.39
1096	171.16	513.48	855.80	1198.13	1540.45	1882.77	2225.09	2396.25	2396.25	0.92	0.65	0.54	0.47	0.41
1097	164.63	493.88	823.13	1152.39	1481.64	1810.89	2140.14	2304.77	2304.77	0.89	0.64	0.53	0.46	0.41
1098	171.24	513.70	856.17	1198.65	1541.12	1883.59	2054.82	2054.82	2054.82	0.92	0.66	0.55	0.47	0.42
1099	171.70	515.11	858.52	1201.93	1545.33	1717.04	1717.04	1717.04	1717.04	0.93	0.67	0.55	0.48	0.42
1100	147.58	442.73	737.89	1033.04	1180.62	1180.62	1180.62	1180.62	1180.62	0.83	0.60	0.50	0.44	0.00
1101	148.06	444.17	592.23	592.23	592.23	592.23	592.23	592.23	592.23	0.83	0.60	0.00	0.00	0.00
1102	152.88	305.75	305.75	305.75	305.75	305.75	305.75	305.75	305.75	0.84	0.00	0.00	0.00	0.00
1103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1106	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1107	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1109	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1113	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1128	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1131	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1134	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1136	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1137	159.87	319.74	319.74	319.74	319.74	319.74	319.74	319.74	319.74	0.82	0.00	0.00	0.00	0.00
1138	170.60	511.80	853.00	1023.60	1023.60	1023.60	1023.60	1023.60	1023.60	0.87	0.61	0.50	0.00	0.00
1139	161.79	485.37	808.96	1132.54	1456.12	1617.92	1617.92	1617.92	1617.92	0.85	0.60	0.49	0.42	0.38
1140	157.49	472.46	787.44	1102.41	1417.38	1732.36	1889.84	1889.84	1889.84	0.84	0.60	0.50	0.43	0.38
1141	172.60	517.80	863.01	1208.21	1553.41	1898.62	2071.22	2071.22	2071.22	0.92	0.66	0.54	0.47	0.41
1142	160.49	481.48	802.47	1123.46	1444.45	1765.44	2086.43	2246.93	2246.93	0.88	0.64	0.53	0.46	0.41
1143	169.33	507.99	846.65	1185.30	1523.96	1862.62	2201.28	2370.61	2370.61	0.92	0.66	0.55	0.48	0.42
1144	157.63	472.88	788.13	1103.38	1418.63	1733.88	2049.13	2364.38	2522.00	0.88	0.63	0.53	0.46	0.41
1145	160.50	481.51	802.51	1123.52	1444.52	1765.53	2086.53	2407.54	2568.04	0.89	0.64	0.53	0.46	0.41
1146	158.83	476.48	794.14	1111.80	1429.45	1747.11	2064.76	2382.42	2541.25	0.88	0.64	0.53	0.46	0.41
1147	174.57	523.72	872.87	1222.02	1571.17	1920.32	2269.47	2444.05	2444.05	0.94	0.68	0.56	0.48	0.43
1148	169.71	509.14	848.56	1187.99	1527.42	1866.84	2206.27	2375.98	2375.98	0.92	0.66	0.55	0.48	0.42
1149	163.28	489.84	816.41	1142.97	1469.53	1796.09	2122.65	2285.94	2285.94	0.90	0.65	0.54	0.47	0.42
1150	156.98	470.94	784.89	1098.85	1412.81	1726.77	2040.73	2197.71	2197.71	0.87	0.63	0.52	0.46	0.41
1151	172.15	516.46	860.76	1205.07	1549.38	1893.68	2065.84	2065.84	2065.84	0.93	0.67	0.55	0.48	0.43
1152	163.68	491.05	818.42	1145.78	1473.15	1800.51	1964.20	1964.20	1964.20	0.90	0.65	0.54	0.47	0.42
1153	151.61	454.83	758.05	1061.27	1364.49	1667.70	1819.31	1819.31	1819.31	0.85	0.62	0.51	0.45	0.40
1154	159.81	479.43	799.05	1118.67	1438.29	1598.10	1598.10	1598.10	1598.10	0.89	0.64	0.53	0.46	0.41
1155	168.30	504.90	841.51	1178.11	1346.41	1346.41	1346.41	1346.41	1346.41	0.92	0.66	0.55	0.48	0.00
1156	144.73	434.18	723.64	1013.09	1157.82	1157.82	1157.82	1157.82	1157.82	0.82	0.59	0.49	0.43	0.00
1157	136.84	410.53	684.21	821.05	821.05	821.05	821.05	821.05	821.05	0.78	0.57	0.47	0.00	0.00
1158	145.41	290.81	290.81	290.81	290.81	290.81	290.81	290.81	290.81	0.80	0.00	0.00	0.00	0.00
1159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1163	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1166	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1167	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1168	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1171	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1172	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1181	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1182	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1183	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1184	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1185	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1186	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1187	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1188	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1189	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1191	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1192	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1193	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1194	143.81	431.42	575.23	575.23	575.23	575.23	575.23	575.23	575.23	0.77	0.55	0.00	0.00	0.00
1195	159.36	478.07	796.78	956.14	956.14	956.14	956.14	956.14	956.14	0.85	0.60	0.49	0.00	0.00
1196	155.30	465.90	776.51	1087.11	1242.41	1242.41	1242.41	1242.41	1242.41	0.84	0.60	0.50	0.43	0.00
1197	146.02	438.05	730.08	1022.12	1314.15	1460.17	1460.17	1460.17	1460.17	0.81	0.59	0.49	0.43	0.38
1198	158.08	474.25	790.41	1106.58	1422.74	1580.82	1580.82	1580.82	1580.82	0.88	0.63	0.53	0.46	0.41
1199	172.14	516.41	860.68	1204.95	1549.22	1721.36	1721.36	1721.36	1721.36	0.95	0.68	0.56	0.49	0.44
1200	159.34	478.03	796.72	1115.40	1434.09	1752.77	1912.12	1912.12	1912.12	0.90	0.65	0.54	0.47	0.42
1201	163.89	491.66	819.44	1147.22	1474.99	1802.77	1966.66	1966.66	1966.66	0.92	0.66	0.55	0.48	0.43
1202	160.78	482.35	803.92	1125.48	1447.05	1768.62	1929.40	1929.40	1929.40	0.90	0.66	0.55	0.48	0.43
1203	155.93	467.78	779.63	1091.48	1403.33	1715.18	1871.11	1871.11	1871.11	0.88	0.64	0.53	0.47	0.42
1204	150.35	451.05	751.76	1052.46	1353.16	1653.87	1804.22	1804.22	1804.22	0.86	0.63	0.52	0.46	0.41
1205	167.71	503.14	838.56	1173.99	1509.41	1677.12	1677.12	1677.12	1677.12	0.93	0.67	0.56	0.49	0.43
1206	160.18	480.53	800.88	1121.23	1441.59	1601.76	1601.76	1601.76	1601.76	0.90	0.65	0.54	0.47	0.42
1207	152.59	457.77	762.96	1068.14	1373.32	1525.91	1525.91	1525.91	1525.91	0.87	0.63	0.53	0.46	0.41
1208	173.00	519.00	865.01	1211.01	1384.01	1384.01	1384.01	1384.01	1384.01	0.95	0.69	0.57	0.49	0.00
1209	155.95	467.85	779.74	1091.64	1247.59	1247.59	1247.59	1247.59	1247.59	0.88	0.64	0.53	0.47	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1210	169.98	509.93	849.88	1019.86	1019.86	1019.86	1019.86	1019.86	1019.86	0.94	0.68	0.56	0.00	0.00
1211	144.13	432.39	720.65	864.78	864.78	864.78	864.78	864.78	864.78	0.82	0.60	0.50	0.00	0.00
1212	153.20	459.59	612.78	612.78	612.78	612.78	612.78	612.78	612.78	0.85	0.61	0.00	0.00	0.00
1213	119.52	358.56	478.09	478.09	478.09	478.09	478.09	478.09	478.09	0.70	0.51	0.00	0.00	0.00
1214	133.60	267.20	267.20	267.20	267.20	267.20	267.20	267.20	267.20	0.75	0.00	0.00	0.00	0.00
1215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1216	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1217	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1218	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1219	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1220	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1222	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1223	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1224	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1226	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1227	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1228	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1229	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1236	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1237	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1238	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1239	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1241	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1242	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1243	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1244	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1245	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1246	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1247	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1248	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1249	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1251	134.63	269.27	269.27	269.27	269.27	269.27	269.27	269.27	269.27	0.75	0.00	0.00	0.00	0.00
1252	139.77	419.30	559.07	559.07	559.07	559.07	559.07	559.07	559.07	0.78	0.57	0.00	0.00	0.00
1253	136.94	410.83	684.72	821.67	821.67	821.67	821.67	821.67	821.67	0.78	0.57	0.47	0.00	0.00
1254	162.31	486.92	811.53	973.83	973.83	973.83	973.83	973.83	973.83	0.90	0.65	0.54	0.00	0.00
1255	143.72	431.17	718.62	1006.06	1149.79	1149.79	1149.79	1149.79	1149.79	0.83	0.61	0.51	0.45	0.00
1256	156.32	468.97	781.62	1094.27	1250.60	1250.60	1250.60	1250.60	1250.60	0.89	0.65	0.54	0.48	0.00
1257	165.82	497.47	829.12	1160.77	1326.60	1326.60	1326.60	1326.60	1326.60	0.94	0.68	0.57	0.50	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1258	163.12	489.36	815.60	1141.84	1304.96	1304.96	1304.96	1304.96	1304.96	0.93	0.67	0.56	0.49	0.00
1259	157.25	471.75	786.24	1100.74	1257.99	1257.99	1257.99	1257.99	1257.99	0.90	0.66	0.55	0.48	0.00
1260	149.44	448.31	747.18	1046.05	1195.49	1195.49	1195.49	1195.49	1195.49	0.87	0.64	0.53	0.47	0.00
1261	140.27	420.80	701.33	981.86	1122.13	1122.13	1122.13	1122.13	1122.13	0.83	0.61	0.51	0.45	0.00
1262	163.82	491.45	819.08	982.90	982.90	982.90	982.90	982.90	982.90	0.93	0.68	0.56	0.00	0.00
1263	147.42	442.26	737.10	884.52	884.52	884.52	884.52	884.52	884.52	0.86	0.63	0.53	0.00	0.00
1264	172.40	517.20	689.59	689.59	689.59	689.59	689.59	689.59	689.59	0.96	0.70	0.00	0.00	0.00
1265	144.74	434.23	578.97	578.97	578.97	578.97	578.97	578.97	578.97	0.84	0.62	0.00	0.00	0.00
1266	172.19	344.39	344.39	344.39	344.39	344.39	344.39	344.39	344.39	0.95	0.00	0.00	0.00	0.00
1267	126.01	252.02	252.02	252.02	252.02	252.02	252.02	252.02	252.02	0.74	0.00	0.00	0.00	0.00
1268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1271	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1272	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1292	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1293	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1294	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1296	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1297	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1298	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1299	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1301	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1302	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1304	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1305	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1306	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1308	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1309	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1310	150.51	301.01	301.01	301.01	301.01	301.01	301.01	301.01	301.01	0.85	0.00	0.00	0.00	0.00
1311	133.73	401.19	534.92	534.92	534.92	534.92	534.92	534.92	534.92	0.79	0.58	0.00	0.00	0.00
1312	160.72	482.16	642.88	642.88	642.88	642.88	642.88	642.88	642.88	0.92	0.67	0.00	0.00	0.00
1313	174.77	524.32	699.10	699.10	699.10	699.10	699.10	699.10	699.10	0.99	0.72	0.00	0.00	0.00
1314	169.75	509.25	679.00	679.00	679.00	679.00	679.00	679.00	679.00	0.97	0.71	0.00	0.00	0.00
1315	160.21	480.62	640.83	640.83	640.83	640.83	640.83	640.83	640.83	0.93	0.68	0.00	0.00	0.00
1316	147.20	441.59	588.78	588.78	588.78	588.78	588.78	588.78	588.78	0.87	0.64	0.00	0.00	0.00
1317	123.19	369.56	492.75	492.75	492.75	492.75	492.75	492.75	492.75	0.76	0.57	0.00	0.00	0.00
1318	147.97	295.93	295.93	295.93	295.93	295.93	295.93	295.93	295.93	0.87	0.00	0.00	0.00	0.00

Analysis Location	Layer1 Initial Stress	Layer2 Initial Stress	Layer3 Initial Stress	Layer4 Initial Stress	Layer5 Initial Stress	Layer6 Initial Stress	Layer7 Initial Stress	Layer8 Initial Stress	Layer9 Initial Stress	Layer1 Primary Settlement	Layer2 Primary Settlement	Layer3 Primary Settlement	Layer4 Primary Settlement	Layer5 Primary Settlement
1348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1349	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1351	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1352	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1354	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1355	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1356	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1357	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1358	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1404	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1406	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1407	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
151	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
154	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
156	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
158	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
196	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
197	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
199	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
201	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
203	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
204	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
205	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
207	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
208	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
209	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
212	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
213	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
214	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
216	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
217	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
218	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
219	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
222	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
223	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
242	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.84
243	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.90
246	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.11
247	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.16
248	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.20
249	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.23
250	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.14
251	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
252	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
253	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
254	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
256	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
257	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
258	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
259	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
260	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
261	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
263	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
264	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
265	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
266	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
267	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
271	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
272	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
273	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
276	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
277	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
278	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
289	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
290	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.93
291	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.15
292	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.19
293	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	1.21
294	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.28
295	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.31

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
296	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.36
297	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.43
298	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.49
299	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.55
300	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	1.61
301	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	1.67
302	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	1.72
303	0.12	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	1.80
304	0.12	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	1.83
305	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	1.79
306	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.70
307	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.36
308	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
309	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
310	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
311	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
312	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
313	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
314	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
316	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
317	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
318	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
319	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
320	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
321	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
322	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
323	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
324	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
325	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
326	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
327	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
328	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
329	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
331	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
332	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
333	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
334	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
344	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
345	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
346	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.04
347	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	1.45
348	0.11	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	1.79
349	0.12	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	1.84
350	0.12	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	1.87
351	0.11	0.10	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	1.95
352	0.12	0.10	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.01
353	0.12	0.11	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.08
354	0.13	0.12	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.14
355	0.14	0.12	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.20
356	0.14	0.12	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.24
357	0.15	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.20
358	0.15	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.20
359	0.15	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.19
360	0.15	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.19
361	0.16	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.18
362	0.16	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.17
363	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.96
364	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.47
365	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72
366	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
367	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
368	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
370	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
371	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
372	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
373	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
374	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
376	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
377	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
378	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
379	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
380	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
381	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
382	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
383	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
384	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
386	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
387	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
388	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
389	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
399	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
401	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
402	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
403	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.48
404	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	1.92
405	0.15	0.13	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.30
406	0.15	0.13	0.12	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.52
407	0.15	0.13	0.12	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.53
408	0.15	0.13	0.12	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.53
409	0.15	0.14	0.12	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	2.54
410	0.16	0.15	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.52
411	0.17	0.15	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.51
412	0.17	0.15	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.50
413	0.17	0.15	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.49
414	0.18	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.44
415	0.18	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.42
416	0.18	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.41
417	0.18	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.40
418	0.18	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.38
419	0.18	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.36
420	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.02
421	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.49
422	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
423	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
424	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
425	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
426	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
427	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
428	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
429	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
430	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
431	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
432	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
433	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
434	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
436	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
437	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
438	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
439	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
440	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
441	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
442	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
443	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
444	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
445	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
456	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
457	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
458	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
459	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.30
460	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	1.92
461	0.17	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.37
462	0.18	0.16	0.14	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.78
463	0.18	0.16	0.14	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.82
464	0.18	0.16	0.14	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.81
465	0.18	0.16	0.14	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	2.81
466	0.18	0.16	0.14	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	2.80
467	0.19	0.17	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.75
468	0.19	0.17	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.73
469	0.19	0.17	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.71
470	0.19	0.17	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.69
471	0.20	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.64
472	0.20	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.62
473	0.20	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.60
474	0.20	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.58
475	0.21	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.56
476	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.44
477	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.00
478	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23
479	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
480	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
481	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
482	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
483	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
484	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
485	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
486	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
487	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
488	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
489	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
491	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
492	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
493	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
494	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
497	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
498	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
499	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
501	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
510	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
511	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
512	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
513	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
514	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
515	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
516	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.75
517	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.30
518	0.20	0.18	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.83
519	0.20	0.18	0.16	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.08
520	0.20	0.18	0.16	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.07
521	0.20	0.18	0.16	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.06
522	0.20	0.18	0.16	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.04
523	0.21	0.19	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.98
524	0.22	0.19	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	2.95
525	0.22	0.19	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.92
526	0.22	0.19	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.90
527	0.22	0.19	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.89
528	0.22	0.19	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	2.87
529	0.23	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.80
530	0.23	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.78
531	0.23	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.73
532	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.60
533	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.50
534	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.80
535	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
536	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
537	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
538	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
539	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
540	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
541	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
542	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
543	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
544	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
545	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
546	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
547	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
549	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
551	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
552	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
553	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
554	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
556	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
557	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
567	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
568	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
569	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
570	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
571	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
572	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.48
573	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	2.20
574	0.22	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.78
575	0.22	0.20	0.18	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.28
576	0.22	0.20	0.18	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.29
577	0.22	0.20	0.18	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.27
578	0.22	0.20	0.18	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.26
579	0.22	0.20	0.18	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	3.23
580	0.23	0.21	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.15
581	0.24	0.21	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.11
582	0.24	0.21	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.09
583	0.24	0.21	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.07
584	0.23	0.21	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.06
585	0.23	0.21	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.03
586	0.25	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.96
587	0.25	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	2.92
588	0.25	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.84

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
589	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.69
590	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.37
591	0.00	0.00	0.00	0.00	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	1.67
592	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
594	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
597	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
598	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
599	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
601	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
602	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
603	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
606	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
607	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
608	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
609	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
610	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
611	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
612	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
613	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
622	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
623	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
624	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
625	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
626	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
627	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
628	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06
629	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	1.95
630	0.23	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.68
631	0.25	0.22	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.24
632	0.24	0.22	0.20	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.47
633	0.24	0.22	0.20	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.47
634	0.24	0.22	0.20	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.46
635	0.24	0.22	0.20	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.45
636	0.24	0.22	0.20	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	3.41
637	0.26	0.23	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.33
638	0.26	0.23	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.29

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
639	0.25	0.23	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.27
640	0.25	0.23	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.25
641	0.25	0.23	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.23
642	0.25	0.23	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.20
643	0.27	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.11
644	0.27	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.05
645	0.26	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	2.96
646	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.79
647	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.27
648	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34
649	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
651	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
652	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
653	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
654	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
655	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
656	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
657	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
658	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
659	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
660	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
661	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
662	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
663	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
664	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
666	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
667	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
668	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
669	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
678	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
679	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
680	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
681	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
682	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
683	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
684	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
685	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.59
686	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	2.43
687	0.26	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.07
688	0.26	0.24	0.22	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.63

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
689	0.27	0.24	0.22	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.66
690	0.26	0.24	0.22	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.64
691	0.26	0.24	0.22	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.63
692	0.26	0.24	0.22	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.61
693	0.26	0.24	0.22	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	3.57
694	0.27	0.25	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.50
695	0.27	0.25	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.48
696	0.27	0.25	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.45
697	0.27	0.25	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.41
698	0.27	0.24	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.38
699	0.27	0.24	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.34
700	0.28	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.23
701	0.28	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.16
702	0.28	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.04
703	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	2.82
704	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.97
705	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
706	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
707	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
708	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
709	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
710	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
711	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
712	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
713	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
714	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
715	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
716	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
717	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
718	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
719	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
720	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
721	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
722	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
723	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
724	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
725	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
733	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
734	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
736	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
737	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
738	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
739	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
740	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
741	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
742	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.07
743	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.79
744	0.28	0.25	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.48
745	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.79
746	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.80
747	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.79
748	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.77
749	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.75
750	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.75
751	0.28	0.25	0.23	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.73
752	0.28	0.25	0.23	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	3.71
753	0.29	0.26	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.62
754	0.29	0.26	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.57
755	0.29	0.26	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.52
756	0.29	0.26	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.46
757	0.30	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.34
758	0.30	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.23
759	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.02
760	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.57
761	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59
762	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
763	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
764	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
765	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
766	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
767	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
768	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
769	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
771	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
772	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
773	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
774	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
775	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
776	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
777	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
778	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
779	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
780	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
781	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
789	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
790	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
791	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
792	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
793	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
794	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
795	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
796	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
797	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
798	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44
799	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.41
800	0.28	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.17
801	0.29	0.26	0.24	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.85
802	0.30	0.27	0.25	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.94
803	0.30	0.27	0.25	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.94
804	0.30	0.27	0.25	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.93
805	0.30	0.27	0.25	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.93
806	0.30	0.27	0.25	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.92
807	0.30	0.27	0.25	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.92
808	0.29	0.27	0.24	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.91
809	0.29	0.27	0.24	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	3.88
810	0.29	0.27	0.24	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	3.83
811	0.31	0.28	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.72
812	0.30	0.28	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.64
813	0.30	0.27	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.55
814	0.31	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.40
815	0.31	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.28
816	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.07
817	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.42
818	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
819	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
820	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
821	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
822	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
823	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
824	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
825	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
826	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
827	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
828	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
829	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
830	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
831	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
832	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
833	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
834	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
835	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
836	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
837	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
845	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
846	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
847	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
848	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
849	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
851	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
852	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
853	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
854	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73
855	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.92
856	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	2.82
857	0.30	0.27	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.57
858	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.02
859	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.06
860	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.07
861	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.07
862	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.07
863	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.06
864	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.05
865	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.04
866	0.31	0.28	0.26	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.01
867	0.31	0.28	0.26	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	3.96
868	0.32	0.29	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.83
869	0.32	0.29	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.73
870	0.33	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.58
871	0.33	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.46
872	0.32	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.35
873	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.06
874	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	2.10
875	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
876	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
877	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
878	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
879	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
880	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
881	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
882	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
883	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
884	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
885	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
886	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
887	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
888	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
889	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
890	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
891	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
892	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
893	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
901	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
902	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
903	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
904	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
905	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
906	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
907	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
908	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
909	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
911	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31
912	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.39
913	0.30	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.22
914	0.32	0.29	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.88
915	0.32	0.29	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.15
916	0.33	0.30	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.19
917	0.33	0.30	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.20
918	0.33	0.30	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.20
919	0.33	0.30	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.19
920	0.33	0.30	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.18
921	0.32	0.30	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.17
922	0.32	0.29	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.16
923	0.32	0.29	0.27	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.11
924	0.32	0.29	0.27	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.07
925	0.33	0.30	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.94
926	0.33	0.30	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.85

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
927	0.35	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.68
928	0.34	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.58
929	0.34	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.45
930	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.80
931	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68
932	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
933	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
934	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
935	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
936	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
937	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
939	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
941	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
942	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
943	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
944	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
946	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
947	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
948	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
949	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
957	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
958	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
959	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
960	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
962	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
963	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
964	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
965	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
966	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
967	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
968	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	1.84
969	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	2.83
970	0.33	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.55
971	0.33	0.30	0.28	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.18
972	0.34	0.31	0.28	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.28
973	0.34	0.31	0.29	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.32
974	0.34	0.31	0.29	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.32
975	0.34	0.31	0.29	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.31

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
976	0.34	0.31	0.29	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.30
977	0.34	0.31	0.28	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.29
978	0.34	0.31	0.28	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.27
979	0.34	0.31	0.28	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.24
980	0.33	0.31	0.28	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.21
981	0.35	0.32	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.12
982	0.35	0.32	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.05
983	0.35	0.32	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.99
984	0.34	0.31	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	3.91
985	0.36	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.69
986	0.35	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.52
987	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.59
988	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45
989	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
990	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
991	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
992	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
993	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
994	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
995	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
996	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
999	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1001	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1024	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21
1025	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.35
1026	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.17
1027	0.34	0.31	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	3.94
1028	0.34	0.31	0.29	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.32
1029	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.41
1030	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.42
1031	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.42
1032	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.41
1033	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.40
1034	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.40
1035	0.35	0.32	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.36
1036	0.35	0.32	0.29	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.33
1037	0.35	0.32	0.29	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.30
1038	0.34	0.32	0.29	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.28
1039	0.36	0.33	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.19
1040	0.36	0.33	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.12
1041	0.35	0.32	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	4.00
1042	0.37	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.76
1043	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	3.21
1044	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	2.19
1045	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
1046	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1047	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1048	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1049	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1052	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1053	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1054	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1056	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1057	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1058	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1059	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1060	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1061	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1068	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1069	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1070	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1071	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1072	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1073	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1074	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1075	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1076	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1077	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1078	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1079	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1080	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1081	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62
1082	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	2.84
1083	0.34	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.58
1084	0.36	0.33	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.14
1085	0.36	0.33	0.30	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.43
1086	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.49
1087	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.50
1088	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.51
1089	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.50
1090	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.50
1091	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.49
1092	0.36	0.33	0.31	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.46
1093	0.36	0.33	0.31	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.43
1094	0.36	0.33	0.30	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.41
1095	0.36	0.33	0.30	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.39
1096	0.37	0.34	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.27
1097	0.37	0.34	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.18
1098	0.38	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.89
1099	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.45
1100	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.65
1101	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
1102	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91
1103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1106	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1107	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1109	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1113	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1128	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1131	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1134	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1136	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1137	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
1138	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.22
1139	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.12
1140	0.35	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.55
1141	0.37	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.86
1142	0.37	0.34	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.15
1143	0.38	0.35	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.33
1144	0.37	0.34	0.32	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.53
1145	0.37	0.34	0.32	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	4.58
1146	0.37	0.34	0.32	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	4.54
1147	0.39	0.36	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.41
1148	0.38	0.35	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.33
1149	0.38	0.35	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	4.22
1150	0.37	0.34	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	4.11
1151	0.39	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.94
1152	0.38	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.81
1153	0.36	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.63
1154	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.32
1155	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.93
1156	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.61
1157	0.00	0.00	0.00	0.00	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	2.01
1158	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
1159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1161	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1163	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1164	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1166	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1167	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1168	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1169	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1171	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1172	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1173	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1181	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1182	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1183	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1184	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1185	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1186	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1187	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1188	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1189	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1191	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1192	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1193	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1194	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46
1195	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.17
1196	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.66
1197	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	3.05
1198	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	3.27
1199	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.52
1200	0.38	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.82
1201	0.39	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.90
1202	0.39	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	3.84
1203	0.38	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.76
1204	0.37	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	3.67
1205	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.47
1206	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	3.37
1207	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	3.26
1208	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	3.02
1209	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.82

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1210	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.41
1211	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	2.12
1212	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
1213	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
1214	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
1215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1216	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1217	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1218	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1219	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1220	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1221	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1222	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1223	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1224	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1226	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1227	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1228	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1229	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1236	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1237	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1238	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1239	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1241	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1242	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1243	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1244	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1245	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1246	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1247	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1248	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1249	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1250	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1251	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
1252	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48
1253	0.00	0.00	0.00	0.00	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	2.02
1254	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.31
1255	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.66
1256	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.86
1257	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	3.00

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1258	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	2.96
1259	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.89
1260	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.78
1261	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	2.66
1262	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.40
1263	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	2.22
1264	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83
1265	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
1266	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
1267	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
1268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1271	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1272	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1292	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1293	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1294	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1296	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1297	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1298	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1299	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1301	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1302	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1304	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1305	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1306	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1308	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1309	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1310	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92
1311	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
1312	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
1313	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87
1314	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83
1315	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
1316	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65
1317	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44
1318	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94

Analysis Location	Layer6 Primary Settlement	Layer7 Primary Settlement	Layer8 Primary Settlement	Layer9 Primary Settlement	Layer1 Secondary Settlement	Layer2 Secondary Settlement	Layer3 Secondary Settlement	Layer4 Secondary Settlement	Layer5 Secondary Settlement	Layer6 Secondary Settlement	Layer7 Secondary Settlement	Layer8 Secondary Settlement	Layer9 Secondary Settlement	Total Settlement (Feet)
1348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1349	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1351	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1352	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1354	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1355	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1356	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1357	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1358	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1359	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1404	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1406	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1407	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
148	33.33%	0.00%
149	33.33%	0.00%
150	33.33%	0.00%
151	33.33%	0.00%
152	33.33%	0.00%
153	33.33%	0.00%
154	33.33%	0.00%
155	33.33%	0.00%
156	33.33%	0.00%
157	33.33%	0.00%
158	33.33%	0.00%
159	33.33%	0.00%
160	33.33%	0.00%
195	11.87%	0.04%
196	12.44%	0.02%
197	16.78%	0.34%
198	19.83%	0.00%
199	25.91%	0.00%
200	33.33%	0.00%
201	33.33%	0.00%
202	33.33%	0.00%
203	33.33%	0.00%
204	33.33%	0.00%
205	33.33%	0.00%
206	33.33%	0.00%
207	33.33%	0.00%
208	33.33%	0.00%
209	33.33%	0.00%
210	33.33%	0.00%
211	33.33%	0.00%
212	33.33%	0.00%
213	33.33%	0.00%
214	33.33%	0.00%
215	33.33%	0.00%
216	33.33%	0.00%
217	33.33%	0.00%
218	33.33%	0.00%
219	33.33%	0.00%
220	33.33%	0.00%
221	27.25%	0.00%
222	23.58%	0.00%
223	28.01%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
242	5.62%	-0.03%
243	5.65%	-0.06%
246	4.58%	-0.06%
247	5.50%	-0.06%
248	2.44%	0.04%
249	5.59%	-0.03%
250	5.21%	0.06%
251	3.92%	0.11%
252	10.65%	0.32%
253	22.63%	0.59%
254	24.34%	0.00%
255	17.51%	0.00%
256	20.19%	0.00%
257	23.51%	0.00%
258	33.33%	0.00%
259	33.33%	0.00%
260	33.33%	0.00%
261	33.33%	0.00%
262	33.33%	0.00%
263	33.33%	0.00%
264	33.33%	0.00%
265	33.33%	0.00%
266	33.33%	0.00%
267	33.33%	0.00%
268	33.33%	0.00%
269	33.33%	0.00%
270	33.33%	0.00%
271	33.33%	0.00%
272	33.33%	0.00%
273	33.33%	0.00%
274	33.33%	0.00%
275	33.33%	0.00%
276	33.33%	0.00%
277	24.51%	0.00%
278	33.33%	0.00%
289	2.74%	-0.01%
290	1.55%	0.02%
291	3.15%	0.01%
292	2.45%	0.09%
293	3.06%	0.11%
294	4.34%	0.14%
295	4.50%	0.13%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
296	4.44%	0.05%
297	7.60%	-0.04%
298	5.70%	-0.06%
299	5.70%	-0.06%
300	4.39%	-0.05%
301	3.90%	-0.03%
302	2.96%	0.00%
303	3.84%	0.00%
304	3.91%	0.02%
305	5.25%	0.06%
306	4.08%	0.10%
307	6.90%	0.15%
308	10.41%	0.35%
309	12.06%	0.44%
310	27.47%	0.98%
311	31.27%	0.00%
312	32.59%	0.00%
313	22.70%	0.00%
314	19.01%	0.00%
315	33.33%	0.00%
316	22.22%	0.00%
317	22.22%	0.00%
318	22.22%	0.00%
319	22.22%	0.00%
320	22.22%	0.00%
321	22.22%	0.00%
322	22.22%	0.00%
323	22.22%	0.00%
324	22.22%	0.00%
325	22.22%	0.00%
326	22.22%	0.00%
327	22.22%	0.00%
328	22.22%	0.00%
329	22.22%	0.00%
330	22.22%	0.00%
331	22.22%	0.00%
332	25.09%	0.00%
333	33.33%	0.00%
334	33.33%	0.00%
343	12.69%	0.00%
344	17.77%	0.00%
345	0.62%	0.14%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
346	3.38%	0.06%
347	3.33%	0.00%
348	1.60%	-0.01%
349	1.43%	-0.01%
350	2.25%	-0.02%
351	1.83%	-0.01%
352	6.27%	0.00%
353	8.16%	0.00%
354	5.16%	-0.03%
355	5.42%	-0.04%
356	3.91%	-0.04%
357	2.61%	0.00%
358	1.60%	0.02%
359	2.17%	0.01%
360	4.06%	0.00%
361	4.09%	0.01%
362	4.48%	0.04%
363	7.57%	0.20%
364	6.84%	0.23%
365	6.74%	0.27%
366	10.74%	0.38%
367	32.64%	0.98%
368	33.35%	0.00%
369	33.35%	0.00%
370	31.88%	0.00%
371	31.43%	0.00%
372	20.53%	0.00%
373	33.33%	0.00%
374	33.33%	0.00%
375	33.33%	0.00%
376	33.33%	0.00%
377	33.33%	0.00%
378	33.33%	0.00%
379	33.33%	0.00%
380	33.33%	0.00%
381	33.33%	0.00%
382	33.33%	0.00%
383	33.33%	0.00%
384	33.33%	0.00%
385	33.33%	0.00%
386	33.33%	0.00%
387	28.90%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
388	33.33%	0.00%
389	33.33%	0.00%
390	33.33%	0.00%
399	14.40%	0.00%
400	13.17%	0.00%
401	33.33%	0.00%
402	4.45%	0.13%
403	1.54%	-0.01%
404	1.77%	-0.01%
405	1.20%	-0.01%
406	1.54%	-0.01%
407	0.76%	0.00%
408	6.71%	0.03%
409	6.67%	0.03%
410	4.60%	0.03%
411	4.73%	0.06%
412	2.15%	0.01%
413	2.13%	0.01%
414	2.46%	0.00%
415	2.18%	0.01%
416	4.20%	0.03%
417	5.15%	0.01%
418	5.09%	0.03%
419	5.24%	0.09%
420	7.66%	0.22%
421	5.16%	0.24%
422	9.74%	0.24%
423	8.67%	0.23%
424	29.91%	0.98%
425	33.35%	0.00%
426	32.27%	0.00%
427	34.91%	0.00%
428	31.93%	0.00%
429	31.95%	0.00%
430	0.00%	0.00%
431	0.00%	0.00%
432	0.00%	0.00%
433	0.00%	0.00%
434	0.00%	0.00%
435	2.61%	0.00%
436	2.07%	0.00%
437	2.09%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
438	2.09%	0.00%
439	2.09%	0.00%
440	2.09%	0.00%
441	2.09%	0.00%
442	2.57%	0.00%
443	33.33%	0.00%
444	33.33%	0.00%
445	33.33%	0.00%
455	21.47%	0.00%
456	13.94%	0.00%
457	33.33%	0.00%
458	9.38%	0.29%
459	3.84%	0.21%
460	5.22%	0.10%
461	1.35%	-0.01%
462	1.76%	-0.01%
463	1.05%	0.00%
464	3.45%	0.01%
465	7.73%	0.07%
466	7.45%	0.05%
467	5.61%	0.03%
468	5.83%	0.04%
469	2.05%	0.01%
470	2.07%	0.01%
471	2.07%	0.02%
472	2.82%	0.02%
473	5.08%	0.03%
474	5.41%	0.04%
475	7.82%	0.06%
476	8.88%	0.18%
477	6.97%	0.27%
478	4.10%	0.30%
479	8.01%	0.25%
480	33.31%	0.00%
481	33.35%	0.00%
482	33.35%	0.00%
483	34.93%	0.00%
484	34.90%	0.00%
485	31.94%	0.00%
486	34.83%	0.00%
487	0.00%	0.00%
488	0.00%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
489	0.00%	0.00%
490	0.00%	0.00%
491	2.61%	0.00%
492	2.07%	0.00%
493	2.07%	0.00%
494	2.07%	0.00%
495	2.09%	0.00%
496	2.09%	0.00%
497	2.09%	0.00%
498	15.39%	0.00%
499	33.33%	0.00%
500	33.33%	0.00%
501	33.33%	0.00%
510	33.33%	0.00%
511	21.27%	0.00%
512	13.61%	0.00%
513	33.33%	0.00%
514	33.33%	0.00%
515	8.51%	0.31%
516	3.38%	0.12%
517	3.56%	0.06%
518	2.09%	0.01%
519	1.04%	0.00%
520	1.78%	0.01%
521	1.10%	0.00%
522	7.35%	0.05%
523	11.21%	0.07%
524	6.01%	0.04%
525	6.55%	0.04%
526	2.12%	0.02%
527	2.41%	0.03%
528	3.07%	0.03%
529	3.65%	0.03%
530	5.98%	0.05%
531	7.57%	0.05%
532	9.95%	0.07%
533	6.59%	0.20%
534	5.75%	0.31%
535	5.33%	0.38%
536	5.86%	0.18%
537	33.31%	0.00%
538	33.31%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
539	33.35%	0.00%
540	32.11%	0.00%
541	31.43%	0.00%
542	34.84%	0.00%
543	0.00%	0.00%
544	0.00%	0.00%
545	0.00%	0.00%
546	2.61%	0.00%
547	2.61%	0.00%
548	2.07%	0.00%
549	2.07%	0.00%
550	2.07%	0.00%
551	2.07%	0.00%
552	2.09%	0.00%
553	2.09%	0.00%
554	33.33%	0.00%
555	33.33%	0.00%
556	33.33%	0.00%
557	33.33%	0.00%
566	33.33%	0.00%
567	33.33%	0.00%
568	14.97%	0.00%
569	33.33%	0.00%
570	33.33%	0.00%
571	10.67%	0.32%
572	9.55%	0.35%
573	2.64%	0.11%
574	1.39%	0.00%
575	1.78%	-0.01%
576	1.97%	-0.01%
577	1.18%	0.00%
578	1.14%	0.00%
579	7.12%	0.05%
580	9.77%	0.07%
581	6.02%	0.04%
582	4.56%	0.04%
583	4.08%	0.04%
584	3.31%	0.03%
585	3.79%	0.03%
586	4.91%	0.03%
587	7.94%	0.06%
588	12.49%	0.11%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
589	10.75%	0.17%
590	8.73%	0.38%
591	4.72%	0.31%
592	6.92%	0.30%
593	7.80%	0.16%
594	33.31%	0.00%
595	33.39%	0.00%
596	34.51%	0.00%
597	39.31%	0.00%
598	32.62%	0.00%
599	34.83%	0.00%
600	0.00%	0.00%
601	2.61%	0.00%
602	2.61%	0.00%
603	2.61%	0.00%
604	2.61%	0.00%
605	2.07%	0.00%
606	2.07%	0.00%
607	2.07%	0.00%
608	2.07%	0.00%
609	2.09%	0.00%
610	33.33%	0.00%
611	33.33%	0.00%
612	33.33%	0.00%
613	33.33%	0.00%
622	33.33%	0.00%
623	33.33%	0.00%
624	13.81%	0.00%
625	33.33%	0.00%
626	33.33%	0.00%
627	7.45%	0.67%
628	9.81%	0.40%
629	9.45%	0.35%
630	3.61%	0.12%
631	1.32%	0.00%
632	1.56%	-0.01%
633	1.29%	-0.01%
634	1.02%	0.00%
635	6.78%	0.04%
636	6.08%	0.05%
637	9.76%	0.09%
638	3.90%	0.04%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
639	4.02%	0.04%
640	4.61%	0.04%
641	4.93%	0.04%
642	5.26%	0.04%
643	6.48%	0.05%
644	9.12%	0.08%
645	11.62%	0.12%
646	10.92%	0.35%
647	4.64%	0.26%
648	5.04%	0.41%
649	6.10%	0.47%
650	31.52%	0.51%
651	33.39%	0.00%
652	33.38%	0.00%
653	34.89%	0.00%
654	31.94%	0.00%
655	39.92%	0.00%
656	31.86%	0.00%
657	2.14%	0.00%
658	2.14%	0.00%
659	2.14%	0.00%
660	2.00%	0.00%
661	0.00%	0.00%
662	0.00%	0.00%
663	0.00%	0.00%
664	0.00%	0.00%
665	0.00%	0.00%
666	33.33%	0.00%
667	33.33%	0.00%
668	33.33%	0.00%
669	33.33%	0.00%
678	33.33%	0.00%
679	33.33%	0.00%
680	12.99%	0.00%
681	33.33%	0.00%
682	33.33%	0.00%
683	33.33%	0.00%
684	10.59%	0.50%
685	8.26%	0.42%
686	3.68%	0.13%
687	4.06%	0.12%
688	1.85%	-0.01%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
689	1.28%	-0.01%
690	1.29%	-0.01%
691	1.02%	0.00%
692	4.84%	0.02%
693	3.79%	0.03%
694	8.36%	0.09%
695	9.26%	0.09%
696	8.43%	0.07%
697	4.47%	0.03%
698	4.56%	0.04%
699	6.61%	0.05%
700	6.44%	0.05%
701	10.09%	0.09%
702	11.96%	0.13%
703	11.76%	0.40%
704	4.18%	0.29%
705	5.98%	0.49%
706	9.14%	0.21%
707	28.99%	0.26%
708	33.27%	0.00%
709	33.27%	0.00%
710	39.31%	0.00%
711	35.44%	0.00%
712	31.98%	0.00%
713	2.13%	0.00%
714	2.13%	0.00%
715	2.00%	0.00%
716	2.00%	0.00%
717	2.41%	0.00%
718	0.00%	0.00%
719	0.00%	0.00%
720	0.00%	0.00%
721	0.00%	0.00%
722	33.33%	0.00%
723	33.33%	0.00%
724	33.33%	0.00%
725	33.33%	0.00%
733	24.95%	0.00%
734	33.33%	0.00%
735	33.33%	0.00%
736	14.40%	0.00%
737	33.33%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
738	33.33%	0.00%
739	33.33%	0.00%
740	13.53%	0.37%
741	10.26%	0.55%
742	8.59%	0.34%
743	3.31%	0.13%
744	3.99%	0.10%
745	1.55%	-0.01%
746	1.08%	0.00%
747	1.17%	-0.01%
748	5.13%	0.00%
749	4.07%	0.03%
750	5.47%	0.05%
751	5.81%	0.06%
752	6.72%	0.07%
753	10.73%	0.11%
754	8.76%	0.08%
755	6.32%	0.05%
756	6.40%	0.05%
757	6.47%	0.05%
758	11.34%	0.11%
759	12.36%	0.24%
760	9.59%	0.43%
761	5.18%	0.36%
762	10.33%	0.39%
763	11.65%	0.13%
764	37.50%	0.00%
765	30.09%	0.00%
766	32.29%	0.00%
767	34.86%	0.00%
768	39.92%	0.00%
769	28.92%	0.00%
770	2.00%	0.00%
771	2.00%	0.00%
772	2.00%	0.00%
773	2.41%	0.00%
774	2.41%	0.00%
775	0.00%	0.00%
776	0.00%	0.00%
777	0.00%	0.00%
778	33.33%	0.00%
779	33.33%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
780	33.33%	0.00%
781	33.33%	0.00%
789	33.33%	0.00%
790	33.33%	0.00%
791	33.33%	0.00%
792	14.51%	0.00%
793	33.33%	0.00%
794	33.33%	0.00%
795	33.41%	0.00%
796	31.73%	0.47%
797	14.20%	0.58%
798	10.89%	0.62%
799	8.85%	0.36%
800	3.18%	0.13%
801	1.05%	0.00%
802	1.33%	-0.01%
803	0.88%	0.00%
804	0.80%	0.00%
805	0.26%	0.00%
806	0.09%	0.00%
807	0.61%	0.01%
808	0.22%	0.00%
809	8.69%	0.06%
810	6.87%	0.06%
811	9.29%	0.08%
812	9.68%	0.08%
813	7.62%	0.06%
814	9.51%	0.08%
815	10.22%	0.10%
816	11.15%	0.17%
817	8.28%	0.44%
818	8.83%	0.77%
819	10.69%	0.44%
820	31.94%	0.39%
821	33.40%	0.00%
822	33.34%	0.00%
823	33.34%	0.00%
824	32.67%	0.00%
825	34.80%	0.00%
826	2.00%	0.00%
827	2.00%	0.00%
828	2.00%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
829	1.19%	0.00%
830	2.41%	0.00%
831	2.41%	0.00%
832	0.00%	0.00%
833	0.00%	0.00%
834	33.33%	0.00%
835	33.33%	0.00%
836	33.33%	0.00%
837	33.33%	0.00%
845	33.33%	0.00%
846	33.33%	0.00%
847	33.33%	0.00%
848	33.33%	0.00%
849	33.41%	0.00%
850	33.33%	0.00%
851	33.33%	0.00%
852	33.33%	0.00%
853	14.63%	0.34%
854	13.83%	0.50%
855	12.82%	0.67%
856	2.39%	0.14%
857	3.05%	0.09%
858	7.28%	-0.07%
859	6.30%	0.03%
860	0.58%	0.00%
861	0.79%	0.00%
862	0.07%	0.00%
863	0.19%	0.00%
864	0.39%	0.00%
865	0.41%	0.00%
866	6.59%	0.03%
867	5.34%	0.04%
868	11.63%	0.09%
869	9.12%	0.10%
870	9.52%	0.10%
871	10.15%	0.10%
872	9.64%	0.11%
873	8.08%	0.32%
874	9.16%	0.60%
875	9.90%	0.53%
876	10.94%	0.22%
877	33.55%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
878	33.04%	0.00%
879	34.22%	0.00%
880	33.34%	0.00%
881	33.33%	0.00%
882	4.64%	0.00%
883	2.00%	0.00%
884	2.00%	0.00%
885	1.19%	0.00%
886	2.41%	0.00%
887	2.41%	0.00%
888	2.41%	0.00%
889	15.39%	0.00%
890	33.33%	0.00%
891	33.33%	0.00%
892	33.33%	0.00%
893	33.33%	0.00%
901	33.33%	0.00%
902	33.33%	0.00%
903	33.33%	0.00%
904	0.00%	0.00%
905	33.33%	0.00%
906	33.33%	0.00%
907	33.33%	0.00%
908	33.33%	0.00%
909	33.33%	0.00%
910	13.04%	0.47%
911	11.08%	0.73%
912	7.48%	0.45%
913	1.05%	0.10%
914	0.64%	0.05%
915	2.70%	0.02%
916	1.12%	0.00%
917	1.08%	0.00%
918	1.16%	0.00%
919	0.74%	0.00%
920	0.74%	0.00%
921	0.74%	0.00%
922	4.72%	0.00%
923	3.81%	0.01%
924	3.76%	0.02%
925	8.66%	0.08%
926	12.85%	0.13%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
927	12.63%	0.15%
928	13.12%	0.19%
929	10.46%	0.26%
930	7.94%	0.47%
931	10.18%	0.54%
932	12.19%	0.30%
933	33.34%	0.00%
934	33.34%	0.00%
935	33.34%	0.00%
936	33.35%	0.00%
937	33.35%	0.00%
938	33.35%	0.00%
939	4.64%	0.00%
940	2.00%	0.00%
941	1.19%	0.00%
942	2.41%	0.00%
943	2.41%	0.00%
944	2.41%	0.00%
945	15.39%	0.00%
946	33.33%	0.00%
947	33.33%	0.00%
948	33.33%	0.00%
949	33.33%	0.00%
957	33.33%	0.00%
958	33.33%	0.00%
959	33.33%	0.00%
960	0.00%	0.00%
961	0.00%	0.00%
962	33.33%	0.00%
963	33.33%	0.00%
964	33.33%	0.00%
965	30.88%	0.71%
966	7.76%	0.20%
967	14.03%	0.37%
968	9.61%	0.72%
969	8.53%	0.41%
970	0.39%	0.05%
971	1.56%	0.03%
972	2.66%	0.01%
973	0.83%	0.00%
974	0.96%	0.00%
975	1.07%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
976	0.93%	0.00%
977	0.64%	0.00%
978	4.07%	-0.01%
979	2.38%	0.01%
980	2.35%	0.01%
981	7.19%	0.04%
982	6.03%	0.04%
983	11.87%	0.11%
984	11.28%	0.13%
985	14.44%	0.19%
986	8.52%	0.48%
987	7.76%	0.60%
988	8.91%	0.64%
989	14.90%	0.47%
990	33.35%	0.00%
991	33.35%	0.00%
992	33.35%	0.00%
993	33.33%	0.00%
994	33.33%	0.00%
995	5.38%	0.00%
996	5.38%	0.00%
997	1.19%	0.00%
998	2.41%	0.00%
999	4.48%	0.00%
1000	4.48%	0.00%
1001	4.48%	0.00%
1002	33.33%	0.00%
1003	33.33%	0.00%
1004	33.33%	0.00%
1005	33.33%	0.00%
1012	33.33%	0.00%
1013	33.33%	0.00%
1014	33.33%	0.00%
1015	33.33%	0.00%
1016	4.35%	0.00%
1017	5.28%	0.00%
1018	33.33%	0.00%
1019	33.33%	0.00%
1020	33.33%	0.00%
1021	33.33%	0.00%
1022	30.09%	0.93%
1023	13.83%	0.50%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1024	11.19%	0.64%
1025	7.54%	0.46%
1026	0.83%	0.04%
1027	0.72%	0.04%
1028	1.28%	0.03%
1029	2.28%	0.02%
1030	0.72%	0.00%
1031	0.96%	0.00%
1032	0.90%	0.00%
1033	1.01%	0.00%
1034	1.05%	0.00%
1035	2.29%	0.01%
1036	2.17%	0.01%
1037	1.55%	0.01%
1038	1.49%	0.01%
1039	6.79%	0.04%
1040	5.81%	0.05%
1041	9.80%	0.13%
1042	11.86%	0.29%
1043	8.23%	0.49%
1044	8.58%	0.41%
1045	9.07%	0.34%
1046	33.35%	0.00%
1047	33.33%	0.00%
1048	33.33%	0.00%
1049	33.33%	0.00%
1050	33.33%	0.00%
1051	33.33%	0.00%
1052	33.33%	0.00%
1053	33.33%	0.00%
1054	33.33%	0.00%
1055	33.33%	0.00%
1056	33.33%	0.00%
1057	33.33%	0.00%
1058	33.33%	0.00%
1059	33.33%	0.00%
1060	33.33%	0.00%
1061	33.33%	0.00%
1068	33.33%	0.00%
1069	33.33%	0.00%
1070	33.34%	0.00%
1071	33.33%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1072	0.00%	0.00%
1073	5.28%	0.00%
1074	7.69%	0.00%
1075	33.33%	0.00%
1076	33.33%	0.00%
1077	33.33%	0.00%
1078	33.33%	0.00%
1079	29.54%	1.08%
1080	14.77%	0.61%
1081	7.55%	0.62%
1082	7.89%	0.42%
1083	0.88%	0.04%
1084	0.75%	0.04%
1085	1.02%	0.03%
1086	0.37%	0.02%
1087	1.41%	0.01%
1088	1.77%	0.00%
1089	1.70%	0.00%
1090	0.84%	0.00%
1091	2.26%	0.01%
1092	2.58%	0.00%
1093	2.59%	-0.01%
1094	2.28%	-0.01%
1095	2.49%	-0.02%
1096	5.51%	0.05%
1097	9.13%	0.12%
1098	12.14%	0.21%
1099	9.47%	0.37%
1100	8.41%	0.46%
1101	6.18%	0.44%
1102	3.90%	0.75%
1103	33.33%	0.00%
1104	33.33%	0.00%
1105	33.33%	0.00%
1106	31.69%	0.00%
1107	33.33%	0.00%
1108	33.33%	0.00%
1109	33.33%	0.00%
1110	33.33%	0.00%
1111	33.33%	0.00%
1112	33.33%	0.00%
1113	33.33%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1114	33.33%	0.00%
1115	33.33%	0.00%
1116	33.33%	0.00%
1117	33.33%	0.00%
1124	33.33%	0.00%
1125	33.33%	0.00%
1126	33.33%	0.00%
1127	33.33%	0.00%
1128	5.35%	0.00%
1129	0.00%	0.00%
1130	7.69%	0.00%
1131	7.69%	0.00%
1132	33.33%	0.00%
1133	33.33%	0.00%
1134	33.33%	0.00%
1135	31.25%	0.61%
1136	14.38%	0.84%
1137	12.19%	0.47%
1138	8.73%	0.54%
1139	7.21%	0.33%
1140	1.45%	0.03%
1141	1.20%	0.03%
1142	1.62%	0.01%
1143	1.57%	0.00%
1144	1.39%	0.00%
1145	1.04%	0.01%
1146	1.07%	0.01%
1147	1.20%	0.01%
1148	3.59%	-0.05%
1149	3.48%	-0.05%
1150	3.49%	-0.05%
1151	2.63%	-0.02%
1152	6.69%	-0.05%
1153	6.32%	-0.03%
1154	9.73%	-0.01%
1155	10.63%	0.04%
1156	9.68%	0.24%
1157	7.36%	0.31%
1158	7.45%	0.11%
1159	33.33%	0.00%
1160	31.08%	0.00%
1161	30.19%	0.00%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1162	33.36%	0.00%
1163	33.33%	0.00%
1164	33.33%	0.00%
1165	33.33%	0.00%
1166	33.33%	0.00%
1167	33.33%	0.00%
1168	33.33%	0.00%
1169	33.33%	0.00%
1170	33.33%	0.00%
1171	28.67%	0.00%
1172	30.57%	0.00%
1173	33.33%	0.00%
1180	33.33%	0.00%
1181	33.33%	0.00%
1182	33.33%	0.00%
1183	4.48%	0.00%
1184	4.48%	0.00%
1185	7.69%	0.00%
1186	7.69%	0.00%
1187	7.69%	0.00%
1188	33.33%	0.00%
1189	33.33%	0.00%
1190	33.33%	0.00%
1191	33.33%	0.00%
1192	31.52%	0.53%
1193	10.88%	1.15%
1194	8.04%	0.80%
1195	8.68%	0.42%
1196	6.08%	0.38%
1197	2.46%	0.00%
1198	2.16%	0.00%
1199	1.97%	-0.01%
1200	1.97%	-0.01%
1201	2.00%	-0.01%
1202	1.70%	0.00%
1203	1.48%	0.00%
1204	1.49%	0.01%
1205	1.42%	0.01%
1206	0.93%	0.02%
1207	0.72%	0.02%
1208	1.04%	0.01%
1209	6.70%	0.02%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1210	5.65%	0.20%
1211	6.26%	0.19%
1212	6.36%	0.13%
1213	6.21%	0.07%
1214	2.01%	0.12%
1215	53.09%	0.00%
1216	30.77%	0.00%
1217	28.86%	0.00%
1218	33.36%	0.00%
1219	33.33%	0.00%
1220	33.33%	0.00%
1221	33.33%	0.00%
1222	33.33%	0.00%
1223	33.33%	0.00%
1224	33.33%	0.00%
1225	33.33%	0.00%
1226	33.33%	0.00%
1227	33.33%	0.00%
1228	27.06%	0.00%
1229	27.68%	0.00%
1236	33.33%	0.00%
1237	33.33%	0.00%
1238	22.19%	0.00%
1239	33.33%	0.00%
1240	33.33%	0.00%
1241	33.33%	0.00%
1242	33.33%	0.00%
1243	33.33%	0.00%
1244	33.33%	0.00%
1245	33.33%	0.00%
1246	21.82%	0.00%
1247	33.33%	0.00%
1248	31.28%	0.60%
1249	15.88%	0.15%
1250	9.80%	0.79%
1251	6.72%	0.65%
1252	6.99%	0.66%
1253	3.78%	0.43%
1254	3.50%	-0.04%
1255	2.78%	-0.02%
1256	2.77%	-0.02%
1257	2.43%	-0.02%

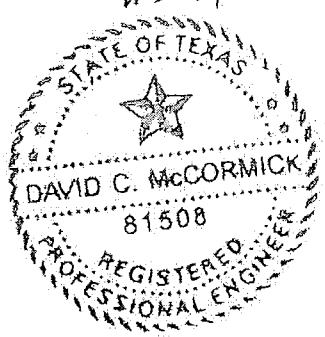
Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1258	2.36%	-0.02%
1259	2.10%	0.00%
1260	2.19%	0.00%
1261	1.56%	0.01%
1262	1.59%	0.01%
1263	4.81%	0.23%
1264	4.14%	0.25%
1265	5.50%	0.36%
1266	5.96%	0.36%
1267	4.93%	0.31%
1268	4.52%	0.24%
1269	0.90%	0.09%
1270	2.54%	0.03%
1271	40.21%	0.00%
1272	29.87%	0.00%
1292	32.87%	0.00%
1293	23.14%	0.00%
1294	33.33%	0.00%
1295	33.33%	0.00%
1296	33.33%	0.00%
1297	33.33%	0.00%
1298	33.33%	0.00%
1299	33.33%	0.00%
1300	33.33%	0.00%
1301	33.33%	0.00%
1302	33.33%	0.00%
1303	23.78%	0.00%
1304	23.50%	0.00%
1305	33.33%	0.00%
1306	57.03%	0.00%
1307	17.98%	-0.08%
1308	16.02%	-0.08%
1309	14.16%	0.32%
1310	11.53%	0.17%
1311	10.01%	0.21%
1312	2.47%	-0.02%
1313	6.18%	-0.18%
1314	6.92%	-0.22%
1315	7.82%	-0.29%
1316	2.17%	-0.01%
1317	6.98%	0.40%
1318	4.63%	0.38%

Analysis Location	Proposed Liner Final Slope	Strain Tension Compression
1348	21.41%	0.00%
1349	33.33%	0.00%
1350	33.33%	0.00%
1351	33.33%	0.00%
1352	33.33%	0.00%
1353	33.33%	0.00%
1354	33.33%	0.00%
1355	33.33%	0.00%
1356	33.33%	0.00%
1357	33.33%	0.00%
1358	33.33%	0.00%
1359	33.33%	0.00%
1360	33.33%	0.00%
1404	30.68%	0.00%
1405	33.33%	0.00%
1406	33.33%	0.00%
1407	33.33%	0.00%

Appendix 4D
Geotechnical Engineering Report
Slope Stability Analysis Laredo Sanitary Landfill Vertical Expansion

Prepared By Terracon Consultants, Inc.
Certificate of Authorization # TX F3272

9.3.14



Geotechnical Engineering Report

Slope Stability Analysis
Laredo Sanitary Landfill Vertical Expansion
Laredo, Texas

September 2014
Project No. 35137109

Prepared for:
Arredondo, Zepada & Brunz, LLC
11355 McCree Road
Dallas, Texas 75238
(214) 341-9900

Prepared by:
Terracon Consultants, Inc.
25809 Interstate 30 South
Bryant, Arkansas 72022
(501) 847-9292

9-4-14

TX F3272

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STATE OF TEXAS
DAVID C. McCORMICK
81508
REGISTERED
PROFESSIONAL ENGINEER

TX F3272

Terracon

September 4, 2014

Arredendo, Zepada & Bruntz, LLC
11355 McCree Road
Dallas, TX - 75238

Attention: Mr. Alfonso Garza

Regarding: Geotechnical Engineering Report
Slope Stability Analysis
Laredo Sanitary Landfill
Laredo, Texas
Terracon Project Number: 35137109

Dear Mr. Garza:

Terracon Consultants, Inc. (Terracon) has completed the stability analysis for the above referenced project. This report presents our evaluation of the stability of the proposed vertical expansion for the Laredo Sanitary Landfill based on our experience with similar materials, published values and the subsurface information obtained from the document 'Vertical expansion permit amendment –Application NO MSW 1693A , Part III, attachment 6B4' prepared by RUST Environment & Infrastructure in June 1998 .

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.
Certificate of Authorization # TX F3272

R. Sonawane.
Richa Bhatnagar, E.I.T
Senior Staff Engineer

F.Owen Carpenter, P.E., P.G.
Engineering Manager, Solid Waste Services

David C. McCormick, P.E
Project Manager

9-4-14

STATE OF TEXAS
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GEOTECHNICAL ENGINEERING REPORT
SLOPE STABILITY ANALYSIS
LAREDO SANITARY LANDFILL
LAREDO, TEXAS

Project No. 35137109
September 2014

1.0 INTRODUCTION

Stability analyses have been completed for the proposed Laredo Sanitary Landfill located in Laredo, Texas. The vertical expansion of Laredo Sanitary Landfill (LSL) will result in a considerable increase in the amount of waste that will be placed within the existing and future waste disposal cells. The main purpose of this report is to present stability analyses for the different cross-sections located in Cells in terms of waste stability, bottom liner stability, foundation and top liner stability.

2.0 PROJECT INFORMATION

2.1 Project Description

ITEM	DESCRIPTION
Site layout	See Appendix A, Figure 1, Site Layout Plan
Critical Cross Sections	See Appendix B, Figure 2, Cross Section A-A', B-B' & C-C'

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	The facility in Webb County, Texas
Existing improvements	Existing Landfill
Current ground cover	--

3.0 SUBSURFACE CONDITIONS

3.1 Typical Profile

The subsurface information and the laboratory test results used in our analysis were obtained from the document ' Vertical expansion permit amendment –Application NO MSW 1693A , Part III, attachment 6B4' prepared by RUST Environment & Infrastructure in June 1998. The subsurface

profile is typically comprised of clay soils underlain by alternating layers of shale and sandstone. The report indicated that the ground water table beneath the landfill was at such depth as to not affect the stability analysis (Application No. MSW 1693A, Part III, attachment 6B4, page no.3 of 5)

4.0 CRITICAL SECTIONS AND LINER CONFIGURATIONS

Three critical cross sections were analyzed as part of this stability analysis. The location of the cross-sections is shown on Figure 1 attached in Appendix A. The cross-sections were selected based on the maximum height of the waste, the steepest slope of the fill and the proximity to a detention pond. The top and the bottom liner configurations were provided to us by Arredendo, Zepada & Bruntz, LLC and are summarized below.

Configuration No. 1	
Bottom Liner System (From top to bottom)	24" Protective soil cover Geonet with geotextile filter fabric 60-mil HDPE Geomembrane Geosynthetic Clay Liner
Final Cover System (From top to bottom)	6" Erosion layer capable supporting vegetation 18" Cover soil (no permeability requirements) Geonet with 6 oz/sy non-woven geotextile on upper and lower faces Geomembrane double sided textured, 20 mil minimum thickness (60-mil minimum if HDPE) Geosynthetic Clay Liner

An alternate final cover configuration was also performed for the most critical cross-section

Alternate Final Cover System (From top to bottom)	6" Erosion layer capable supporting vegetation 18" Cover soil (no permeability requirements) 12" Intermediate Cover

4.1 Material Properties

The table below presents the strength parameters used for the stability analyses for all the conditions analyzed (effective stress). These parameters were selected based on review of the subsurface data and laboratory tests included in the document ' Vertical expansion permit amendment –Application NO MSW 1693A , Part III, attachment 6B4' prepared by RUST Environment & Infrastructure in June 1998 and on our past experience with similar soils and materials where test results were not available for site-specific materials.

Soil/Material Type	Unit Weight	Effective Strength Parameters	
	(pcf)	C (psf)	Θ (degrees)
Final Cover Soils	120	0	28
Existing Intermediate Cover Soils	120	0	28
Waste	75	300	30
In-situ Soil Liner/Bottom Liner Soils	120	0	28
Bottom Liner Geosynthetics	100	0	9
Top Liner Geosynthetics	58	19	18
Sandstone/Shale	125	10000	0

Construction material strength and interface shear tests should be performed to confirm the material properties for each liner system prior to its use in construction. If the above material properties are not met, the design engineer shall assess the overall effect on the stability of the landfill.

5.0 ANALYSIS SUMMARY

5.1 General Discussion

The computer program SLOPE/W® 2007 (Version 7.14) developed by Geo-Slope International was used to evaluate stability of the landfill. This program has several methods available that allow the user to model both circular and block-type failure surfaces (modes). The stability analysis is typically characterized by its calculated factor of safety against failure. The factor of safety may be generally defined as the ratio of the resisting forces to the driving forces. A factor of safety of 1.0 indicates the resisting forces are in equilibrium with the driving forces; therefore, the higher the safety factor, the more is the stability. Further discussion of the trial failure modes that were analyzed is provided below.

In the program SLOPE/W®, the Morgenstern-Price method with half-sine function was selected to calculate the factor of safety. The Morgenstern-Price method is similar to the Spencer method, but allows for various user-specified interslice force functions. The block method function was specified to locate the critical slip surface, and then optimization of the failure plane was performed by the software to "probe" the possibility of a lower safety factor. The soil parameters used for this project are in the above table. The safety factor is shown on the respective cross-section and in the adjoining SLOPE/W analysis in **APPENDIX C**.

5.2 Results of Static Analyses

The stability analyses were performed by inputting shear strength, friction angles, and unit weight parameters into SLOPE/W®. The long term stability conditions were considered for these analyses. Figures showing the failure plane and the corresponding factor of safety are presented in **Appendix C**. The factor of safety shown on the graphical plot corresponds to the optimized failure surface.

5.2.1 Stability of the Waste

Stability analyses were performed for the interim waste slope (existing) and for the final waste height at all the three locations. From the cross-sections provided to us, we understand that the maximum waste elevation will vary between 645 feet and 656 feet at these locations. A circular failure was used to describe the lowest factors of safety for the waste stability. The following table summarizes the results of the slope stability analysis for the interim and final waste.

Interim Waste Slope

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
A-A' (circular)	2.85	1.5
B-B' (circular) (MSW)	3.94	1.5
B-B' (circular) (C&D)	9.77	1.5

Final Waste Slope

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
A-A' (circular)	2.78	1.5
B-B' (circular)	2.75	1.5
C-C' (circular)	2.87	1.5

5.2.2 Stability of Excavation for Pipe Removal

We understand that an existing pipeline needs to be excavated out before the vertical expansion can proceed. According to the information provided to us by Mr. Michael Carleton at AZB, LLC, we understand that the pipeline is located 10 to 15 feet below the existing ground surface. Our analysis is based on the worst case scenario and a depth of 15 feet. According to OSHA standards the soils on site are characterized as Type C soils and the minimum unprotected slope required is atleast 1.5H:1V for slopes with a depth of 10 to 15 feet. However,

our stability analysis indicates that a 15 foot deep slope in Type C soils with 1.5H:1V will not be stable and have a factor of safety lower than 1.

Excavated Slope

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
Analysis 1 (Slopes 1.5H:1V)	0.89	1.3

Our stability analysis indicates that a minimum unsupported slope of 2.5H: 1V is required to keep the slopes of the excavation stable. However, if a trench box or shoring is used, a desired factor of safety of 1.3 can be reached. The design of the box or shoring is the responsibility of the contractor.

Excavated Slope

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
Analysis 2 (Slopes 2.5H:1V)	1.37	1.3

5.2.3 Veneer Stability

The purpose of this analysis is to evaluate the stability of the final cover with respect to shallow circular slip surface passing through the final cover and waste slope, for the static conditions. The final cover is comprised of the following

Final Cover System (From top to bottom)	6" Erosion layer capable supporting vegetation 18" Cover soil (no permeability requirements) Geonet with 6 oz/sy non-woven geotextile on upper and lower faces Geomembrane double sided textured, 20 mil minimum thickness (60-mil minimum if HDPE) Geosynthetic Clay Liner

The results of the slope stability for the three cross-sections is summarized below.

Veneer Stability

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
A-A'	1.77	1.5
B-B'	1.75	1.5
C-C'	1.70	1.5

Alternate final cover stability was also performed on the section (C-C') with the minimum factor of safety obtained with the above cover liner configuration. The alternate final cover included

Alternate Final Cover System (From top to bottom)	6" Erosion layer capable supporting vegetation 18" Cover soil (no permeability requirements) 12" Intermediate Cover

Alternate Final Cover

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
C-C'	2.17	1.5

5.2.4 Bottom Liner Stability

A bottom liner analysis was performed to determine the stability of the liner. The bottom liner in the Presubtitle D (Cross-section B-B' under the C& D waste) area is comprised of only a clay liner whereas the bottom Liner in the Subtitle D (Cross-section C-C' and B-B' under MSW) area is comprised of the following

Bottom Liner System (From top to bottom)	24" Protective soil cover Geonet with geotextile filter fabric 60-mil HDPE Geomembrane Geosynthetic Clay Liner

Bottom Liner Stability

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
A-A'	2.80	1.5
B-B'	1.98	1.5
C-C'	1.55	1.5

The bottom liner for the future expansion cells were modeled with double sided textured geomembrane and double sided geocomposite. The bottom liner sideslopes were modeled at 3H : 1 V.

5.2.5 Foundation stability

Foundation stability was performed to evaluate the foundation soils that underlie the landfill area. The factor of safety for stability of potential failure surfaces that pass through the waste mass and underlying foundation soils were calculated

Foundation Stability

Cross Section	Calculated Factor of Safety	Minimum Factor of Safety
A-A'	4.29	1.5
B-B'	4.14	1.5
C-C'	4.48	1.5

As noted in the above tables, the calculated factors of safety for the proposed configurations exceeded the minimum allowable factor of safety established.

The Laredo sanitary Landfill is not located in a seismic impact zone since the maximum horizontal acceleration in lithified material at the facility is less than 0.1g. Therefore a seismic analysis is not required.

5.2.6 Anchor trench

Hand calculations were performed to check the anchor trench dimensions and ascertain the design anchor resistance capacity between the yield stress and the allowable stress of the geosynthetic layer system. The anchor trench calculations are attached in Appendix D. A stability run was also performed to confirm the factor of safety for the anchor trench with the liner and the protective cover in place but before placing the waste (interim condition) in Appendix C.

Anchor Trench	Calculated Factor of Safety	Minimum Factor of Safety
With geosynthetics only	1.6	1.5
With geosynthetics and protective cover	1.62	1.5

6.0 GENERAL COMMENTS

The analyses and any recommendations presented in this report are based upon the subsurface information obtained from the report prepared by RUST Environment and Infrastructure and from other information discussed in this report. This report does not reflect variations that may occur due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided. Provisions to verify strength of utilized soil and geosynthetic materials and interfaces may be added as part of the construction quality assurance process as applicable.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted engineering practices. No warranties, express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX A
LOCATION DIAGRAM

TEX-MEX RAILROAD
P.O.BOX 419
LAREDO,TX.78042
VOL.526,PG.16
W.C.D.R.

PART B-3 OF SHARE 1 OF THE
HURD ENTERPRISES,LTD.,OWNER:C/O L.B.
WALKER & ASSOC.P.O.BOX 16290
HOUSTON,TX.77222-6290
VOL.684,PG.449 D.R.W.C.T.

JOE S.BARRERA
2002 GUERRERO ST.
LAREDO,TX.78041

PART B-3
OF SHARE 1
OF THE
HURD ENTERPRISES,LTD.,OWNER
C/O L.B.WALKER & ASSOC.
P.O.BOX 16290
HOUSTON,TX.77222-6290
VOL.684,PG.449
D.R.W.C.T.

SERGIO RIVAS SR.
SERGIO RIVAS JR.
JUAN GONZALEZ
902 GALE ST.
LAREDO,TX.78041

ISRAEL PENA
RR3.BOX 36
LAREDO,TX 78043

ENRIQUE FLORES
ABS.296,PORCION 32
A.TREVINO
5.0 ACRES
P.O.BOX 2746
LAREDO,TX.78042,2746
VOL.409,PG.45
D.R.W.C.T.

251.2282 ACRES TRACT
CITY OF LAREDO
VOL.227,PG.195
D.R.W.C.T.

PART B-3
OF SHARE 1
OF THE
HURD ENTERPRISES,LTD.,OWNER
C/O L.B.WALKER & ASSOC.
P.O.BOX 16290
HOUSTON,TX.77222-6290
VOL.684,PG.449
D.R.W.C.T.

POND A
POND B
POND C
POND C-1
POND C-2

CELL 1
CELL 2
CELL 3
CELL 4
CELL 5
CELL 6
CELL 7
CELL 8
CELL 9
CELL 10
CELL 11
CELL 12
CELL 13
CELL 14
CELL 15
CELL 16
CELL 17
CELL 18
PHASE 1

CELL 5/6
CELL 7/8
CELL 9/10
CELL 11/12
CELL 13/14
PHASE 2

CELL 1
CELL 2
CELL 3
CELL 4
PHASE 3

CELL IV-1
CELL IV-2
CELL IV-3
PHASE 4

CELL 1 PHASE 5 CELL 2

METHANE FLARE UNIT
DIESEL AST TANK
GATED ENTRY & SCALES
LEACHATE STORAGE TANK
PROPOSED PERMIT BOUNDARY EXPANSION
WHITE GOODS STORAGE AREA
USED TIRE STORAGE AND CHIPPING AREA

EX. 70' ELECTRIC TRANSMISSION ESMT.
ABAND. 50' GAS PIPELINE ESMT.

S.H.359

MW-1 MW-2 MW-3 MW-4 MW-4R1 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 MW-20 MW-21 MW-22 MW-23
GP-1 GP-2 GP-3 GP-4 GP-5R GP-6 GP-7 GP-8R GP-9 GP-10 GP-11 GP-12 GP-13 GP-14 GP-18 GP-19 GP-20 GP-21
GW#1 GW#2 GW#3 GW#4 GW#5 GW#6 GW#7 GW#8 GW#9 GW#10 GW#11 GW#12 GW#13 GW#14 GW#15 GW#16 GW#17 GW#19 GW#20

3005E 6915E 6905E 6895E 6885E 6880E 6875E 6870E
17071500N 17071000N 17070500N 17070000N 17069500N 17069000N 17068500N 17068000N

LEGEND

- PERMIT BOUNDARY
- PHASE BOUNDARY
- CELL BOUNDARY
- EXISTING GAS PROBE
- EXISTING GAS WELL
- EXISTING GROUNDWATER MONITOR WELL
- PLUGGED & ABANDONED GROUNDWATER MONITOR WELL
- STATE PLANE COORDINATES

N

200 100 0 200 400
SCALE HORIZONTAL FEET

REV	DATE	DESCRIPTION	DES BY	APP BY

CITY PROJ. No.
AZB PROJ. No. 212029
DATE:
DES BY
DRN BY
CHK BY
APP BY

CLASS I PERMIT MODIFICATION
CITY OF LAREDO MSW #1693A
WEBB COUNTY, TEXAS

SITE LAYOUT PLAN

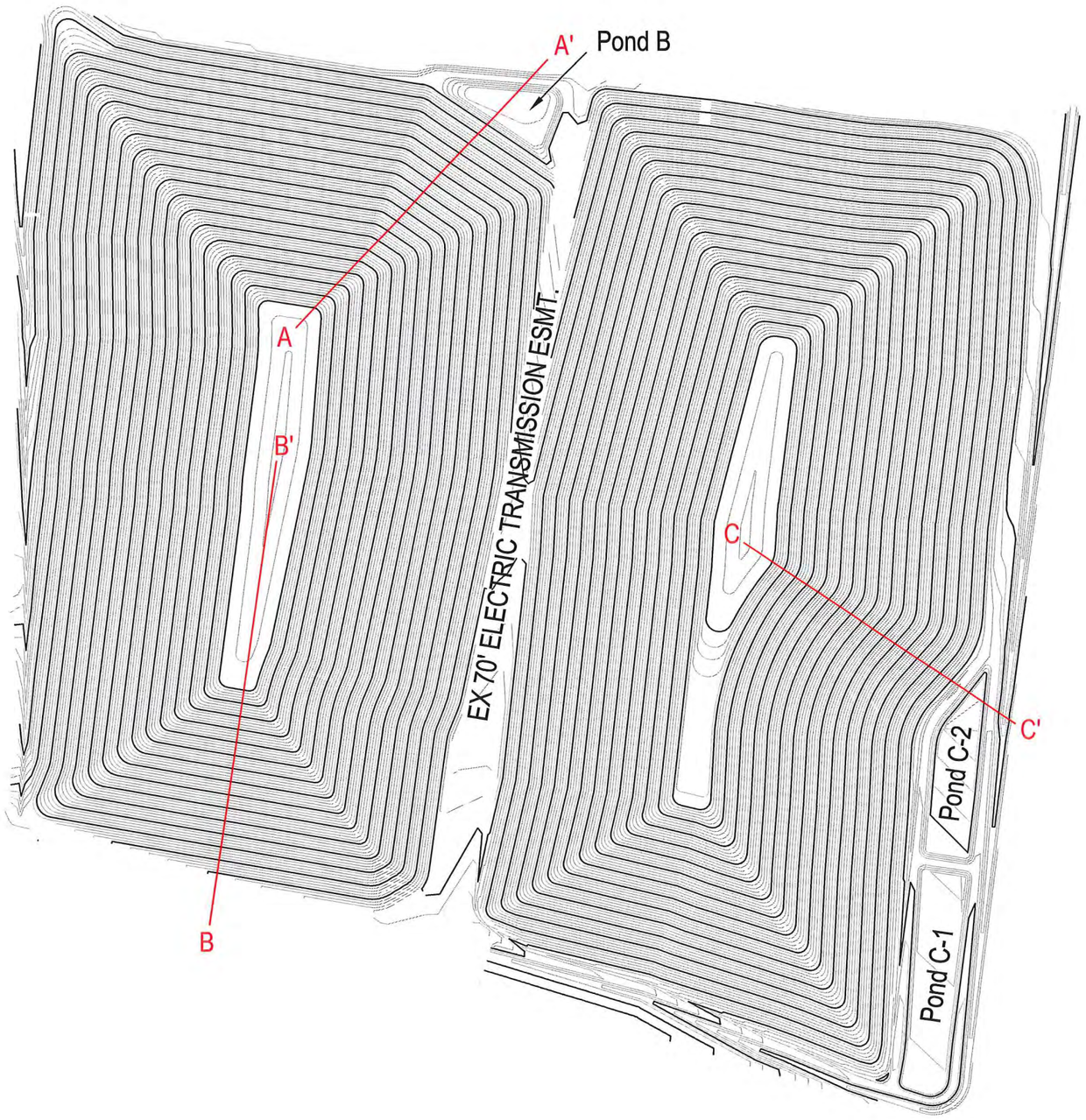
SHEET 1 OF 1
FILE:
DRAWING NO.: 1A

CITY OF LAREDO

AZB ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-10098
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL

FIGURE 1

APPENDIX B
CROSS SECTIONS



N

0 100 200 400

SCALE IN FEET

THE CROSS-SECTIONS WERE SELECTED BASED ON THE MAXIMUM HEIGHT OF THE WASTE, THE STEEPEST SLOPE OF THE FILL AND THE PROXIMITY TO A DETENTION POND. THE CROSS-SECTION DESIGN INFORMATION WAS SUPPLIED BY ARREDENDO, ZEPADA & BRUNTZ, LLC.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
25809 I-30 SOUTH BRYANT, AR 72022
PH. (501) 847-9292 FAX. (501) 847-9210

CROSS SECTION LOCATIONS

SLOPE STABILITY ANALYSIS

CITY OF LAREDO

LAREDO TEXAS

FIGURE 2

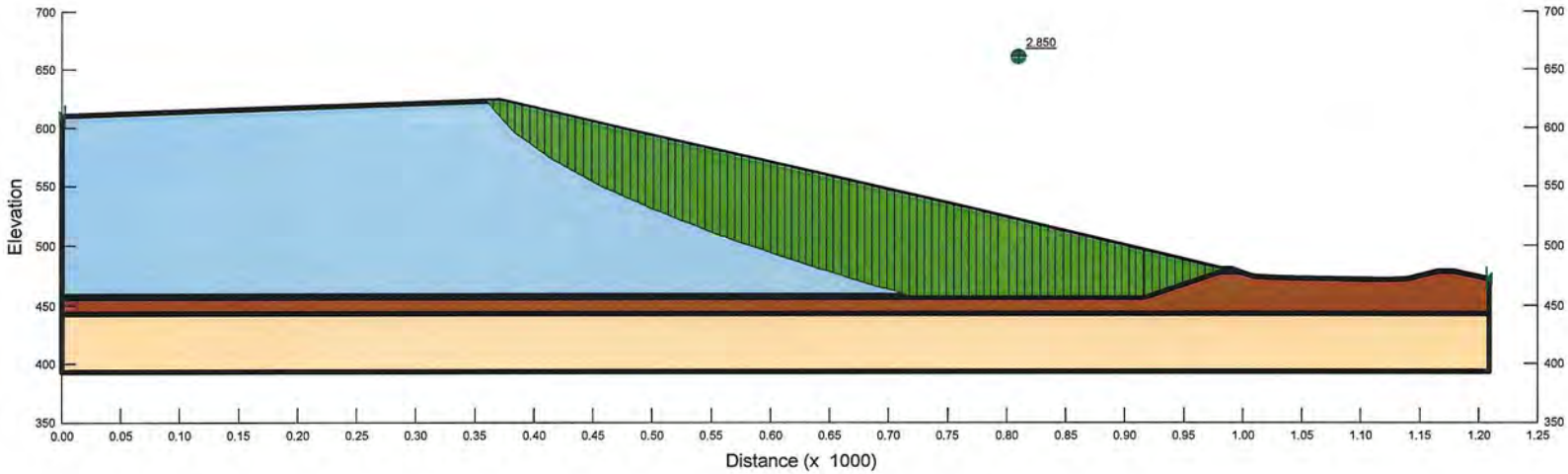
DESIGNED BY:	JDW
DRAWN BY:	JDW
APPVD. BY:	RS
SCALE:	1" = 400'
DATE:	10-21-13
JOB NO.	502-001-35137109
ACAD NO.	001
SHEET NO.:	OF

APPENDIX C
CRITICAL FAILURE SURFACE FIGURES

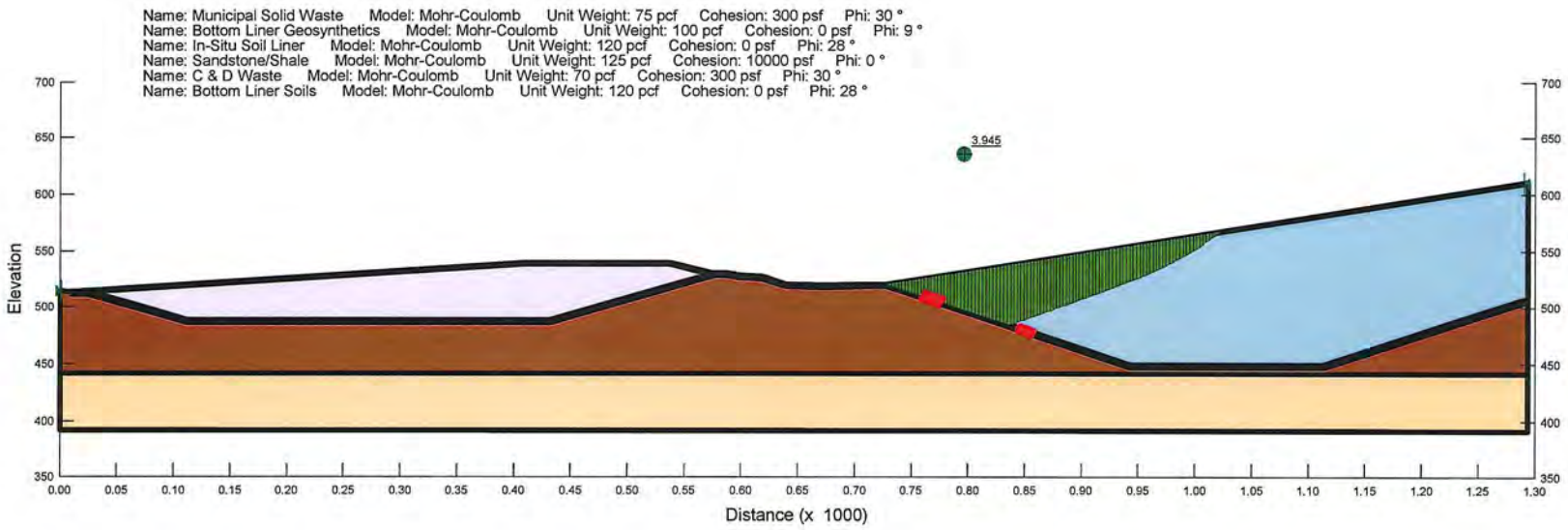
INTERIM WASTE SLOPE SECTIONS

File Name: Section A-A' -Interim Waste Slope-circular.gsz

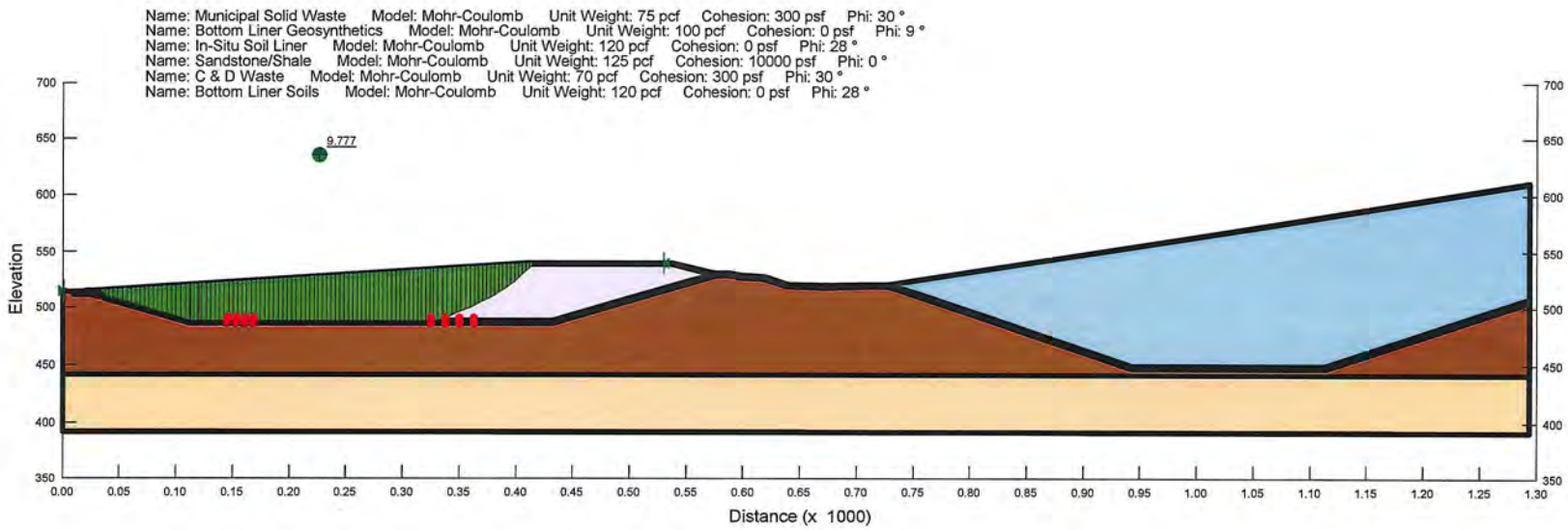
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



File Name: Section B-B' MW Initial Height wtih Int. Cover-MS Waste-block.gsz



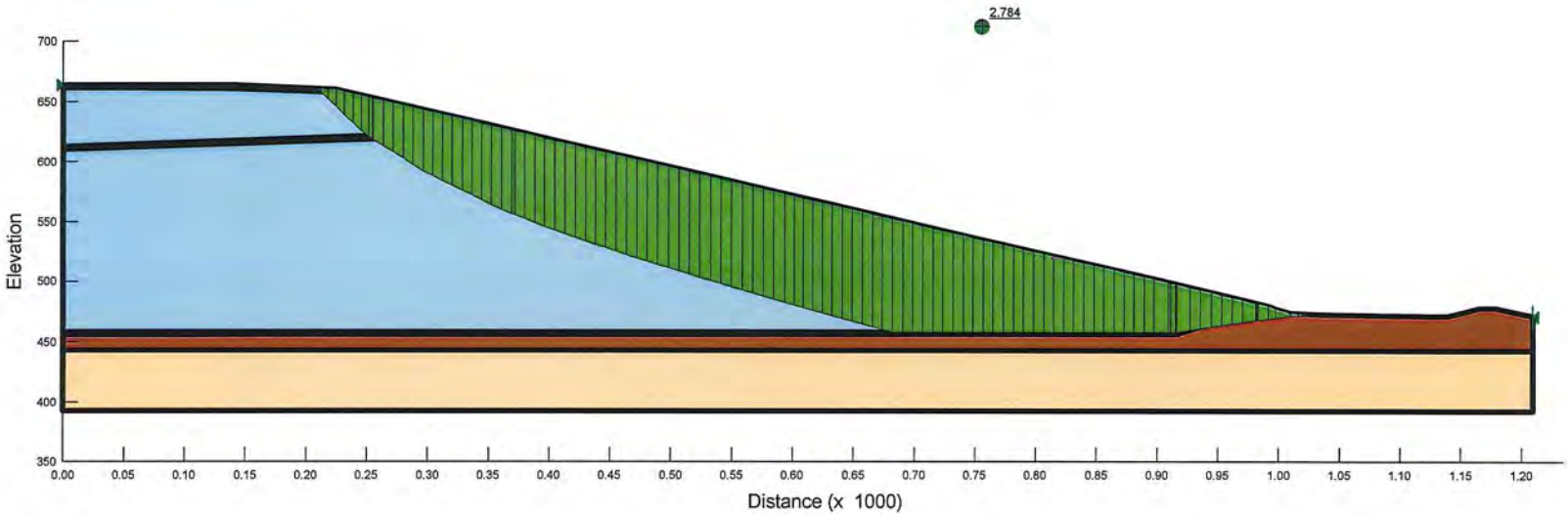
File Name: Section B-B' MW Initial Height wtih Int. Cover- C &D Waste-block.gsz



FINAL WASTE SLOPE SECTIONS

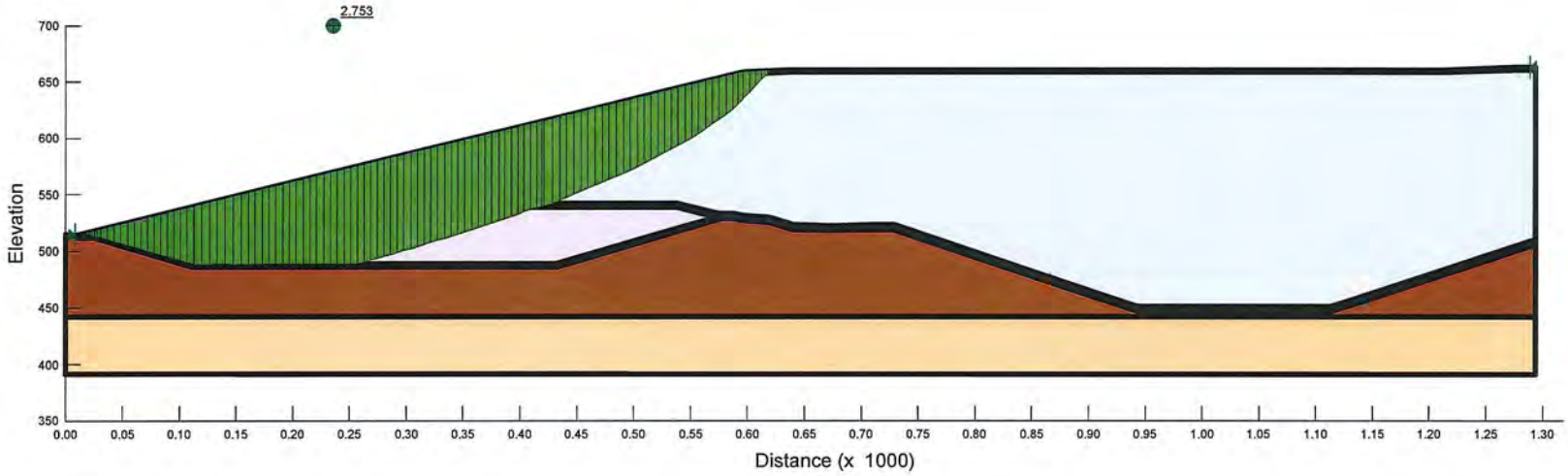
File Name: Section A-A' Full Height Slope-circular.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



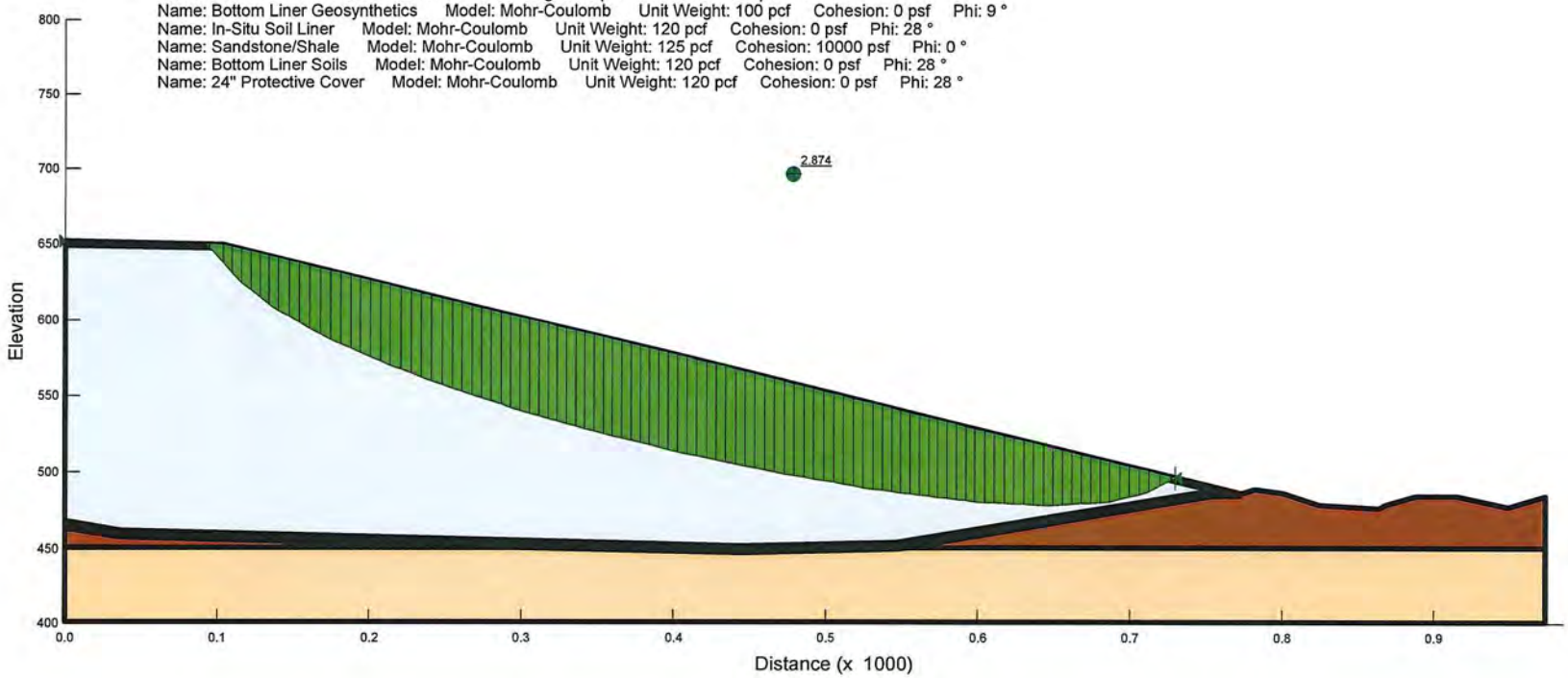
File Name: Section B-B' Full Height -Waste.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



File Name: Section C-C'-Waste.gsz

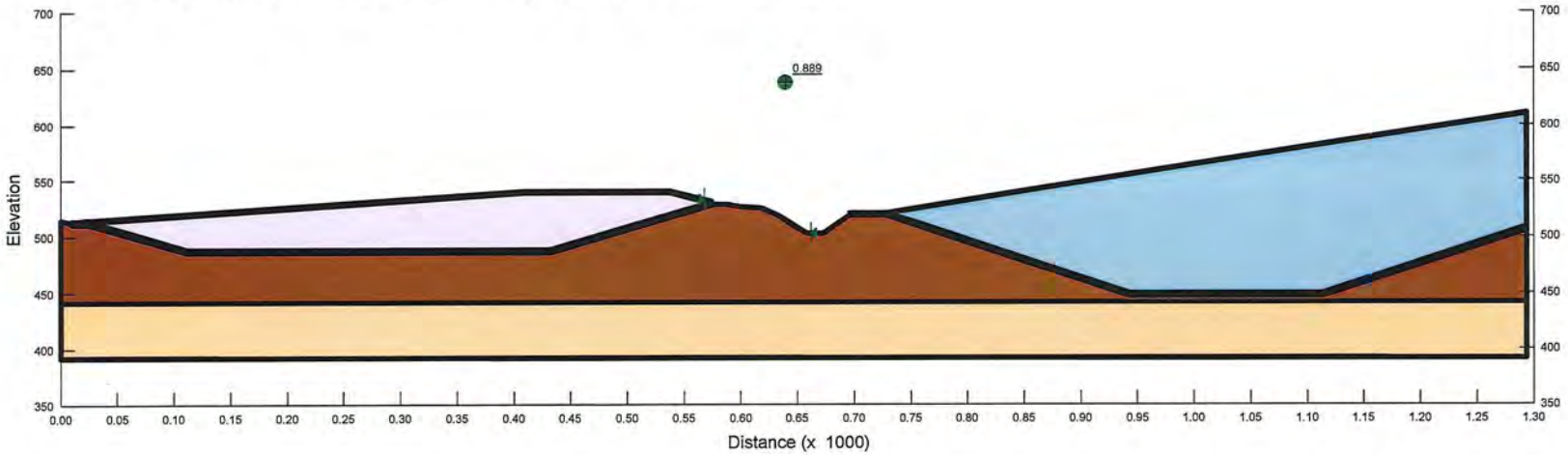
Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



EXCAVATED SLOPE SECTIONS

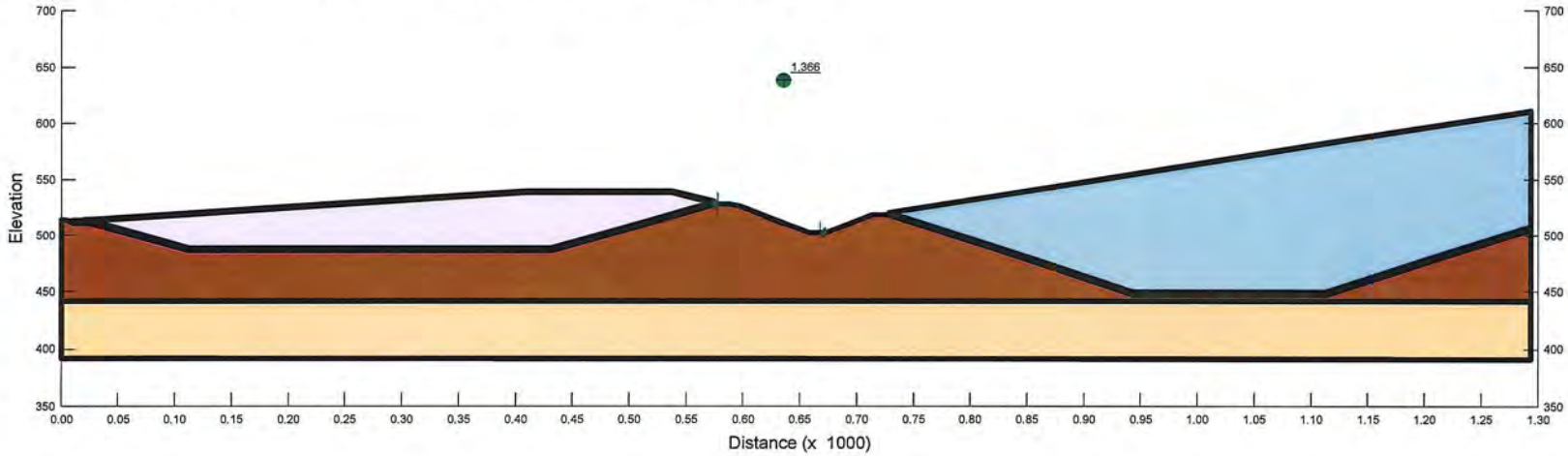
File Name: Section B-B' MW Initial Height wtih Pipeline Excavation1.gsz

Name: Municipal Solid Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



File Name: Section B-B' MW Initial Height wtih Pipeline- Excavation2.gsz

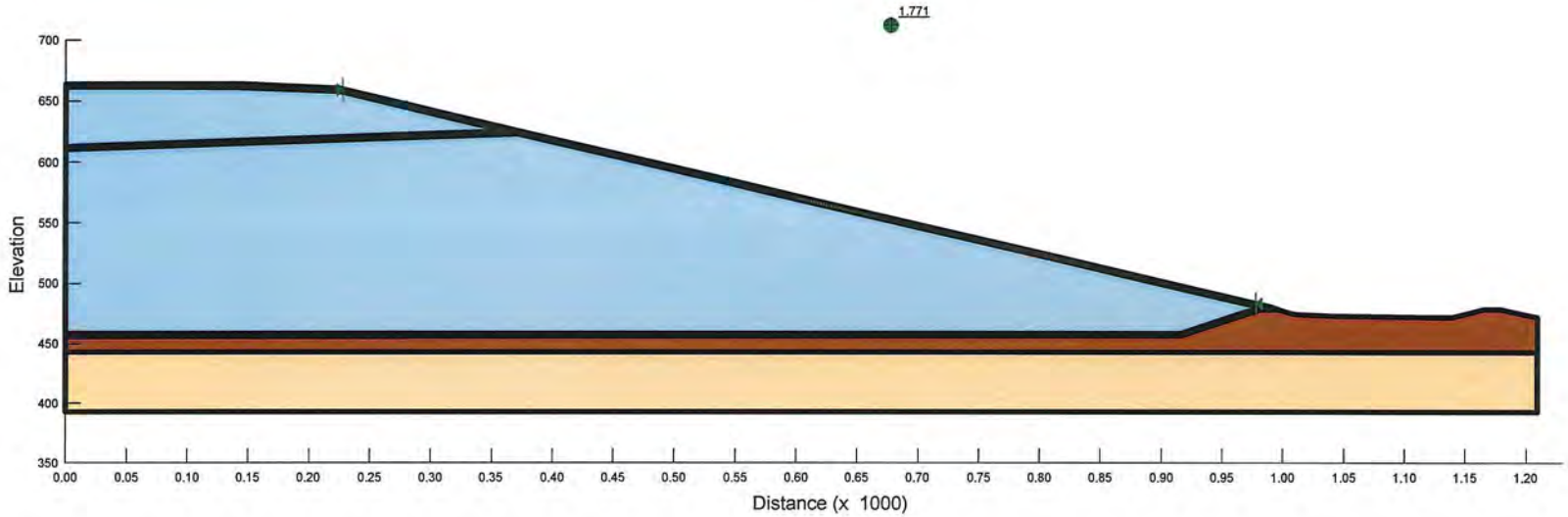
Name: Municipal Solid Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



VENEER STABILITY SECTIONS

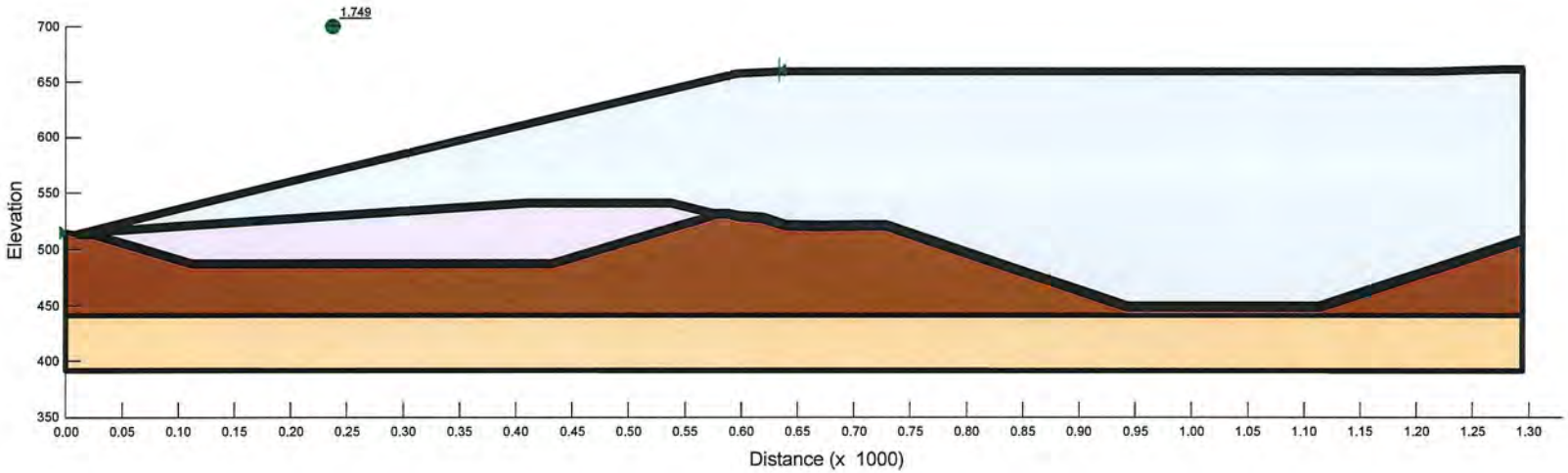
File Name: Section A-A' Full Height -Top Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



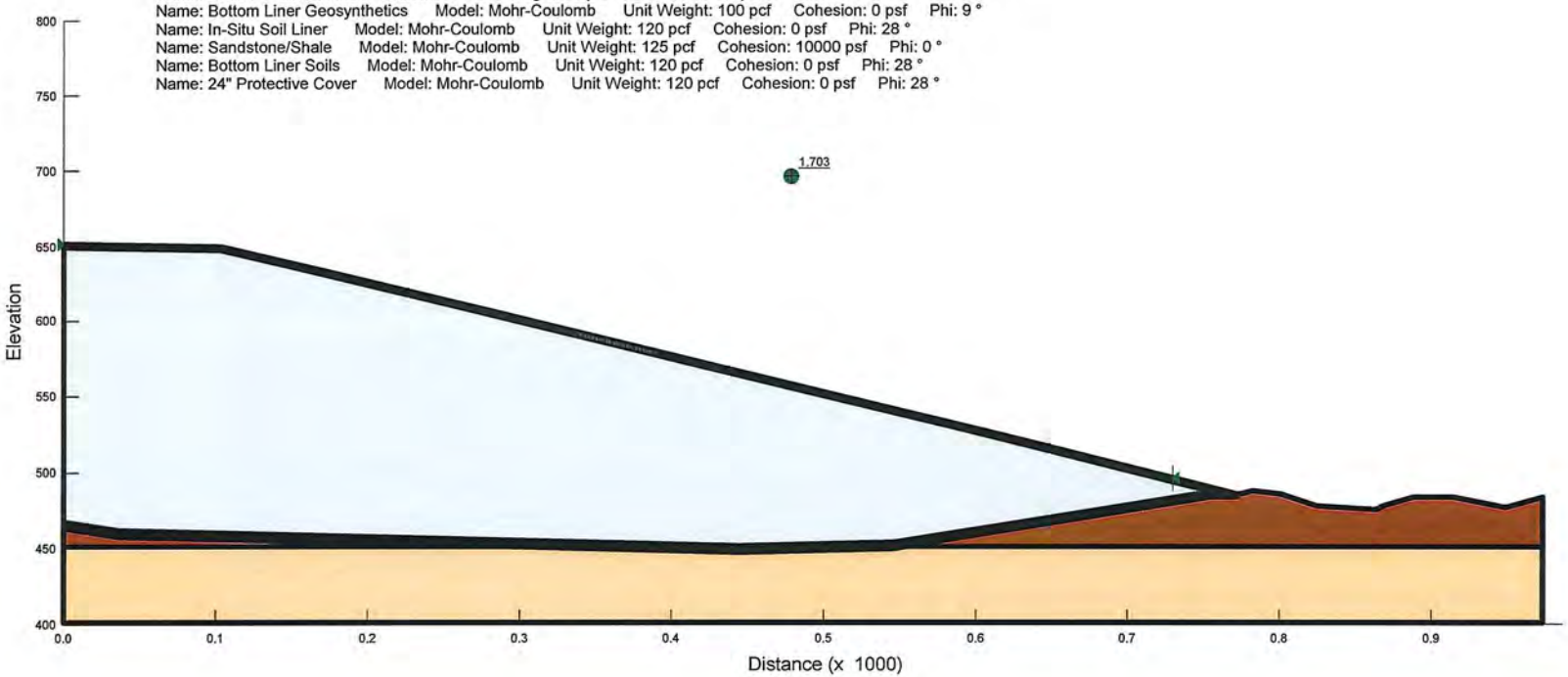
File Name: Section B-B' Full Height -Top Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



File Name: Section C-C'-Top Liner.gsz

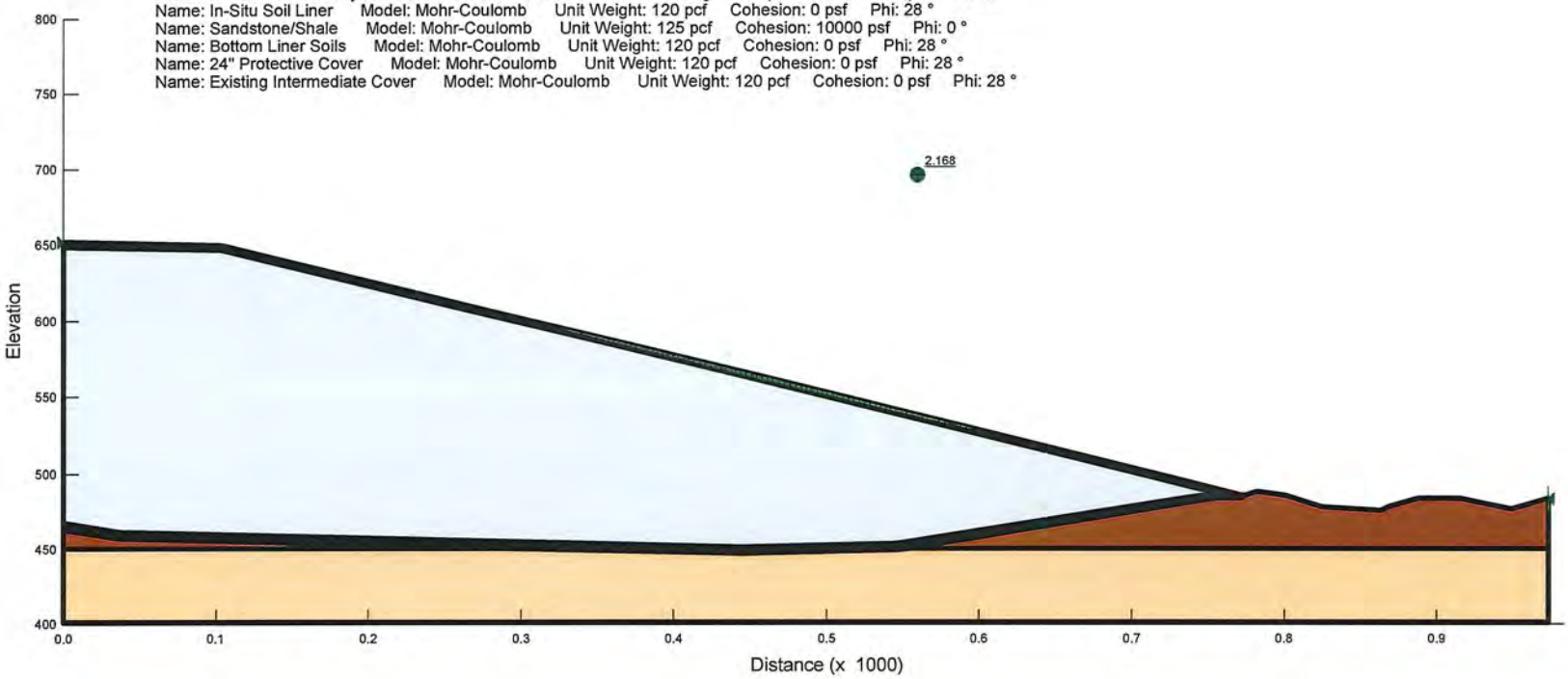
Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



ALTERNATE FINAL COVER SECTION

File Name: Section C-C'-Top Liner (Alternate Liner).gsz

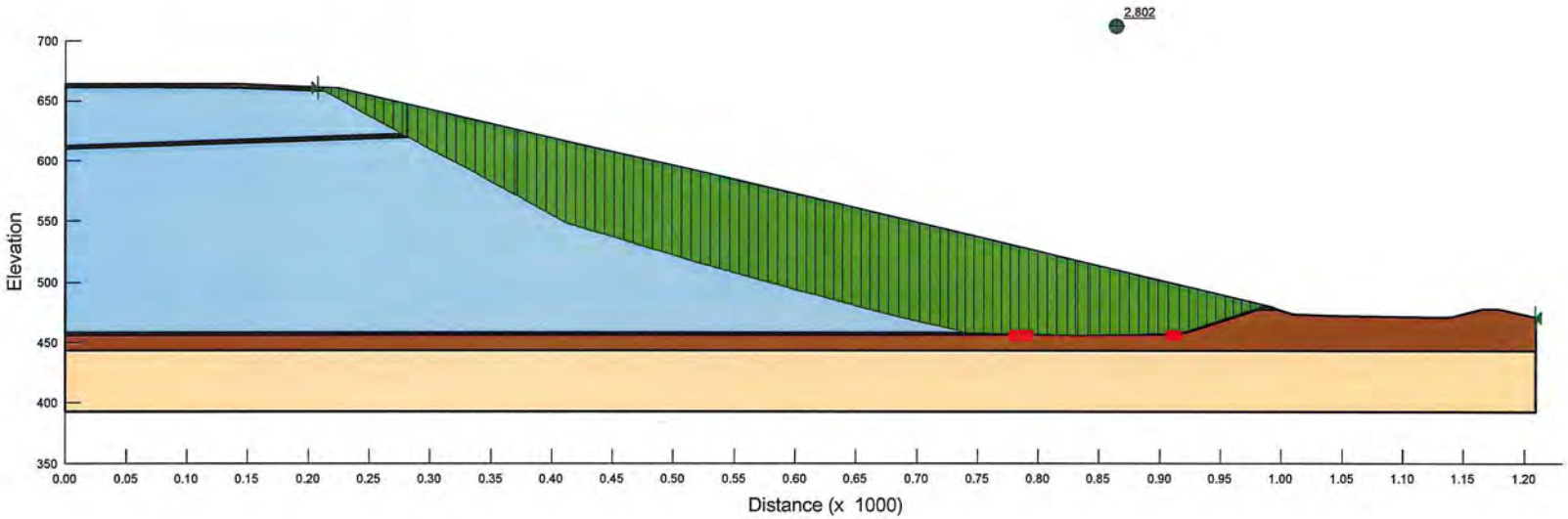
Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Existing Intermediate Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



BOTTOM LINER STABILITY SECTIONS

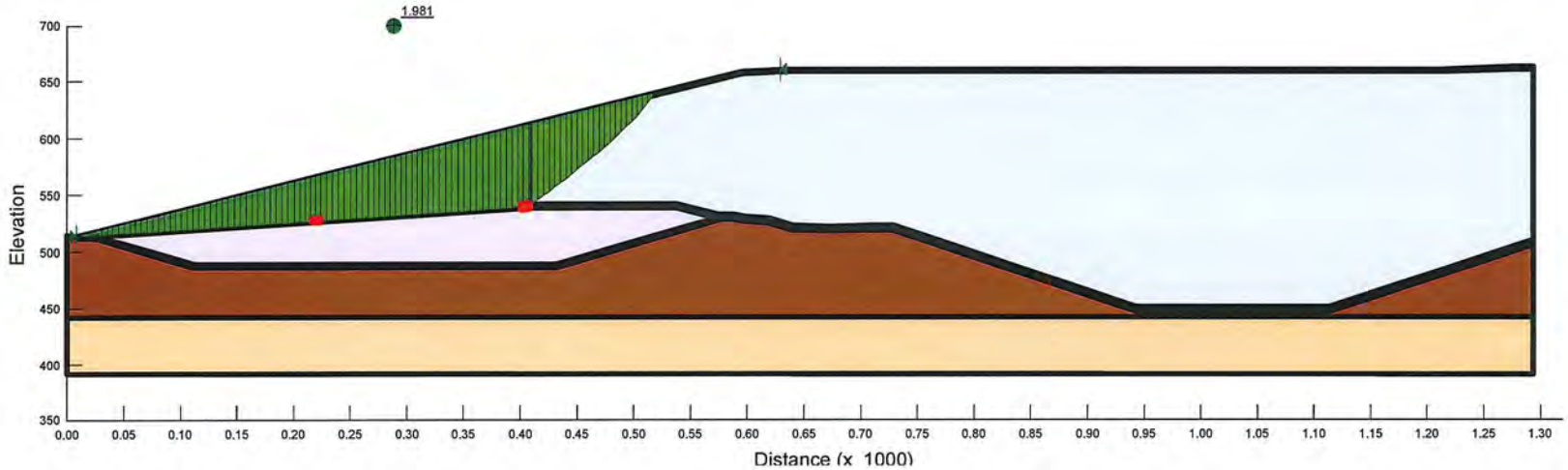
File Name: Section A-A' Bottom Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



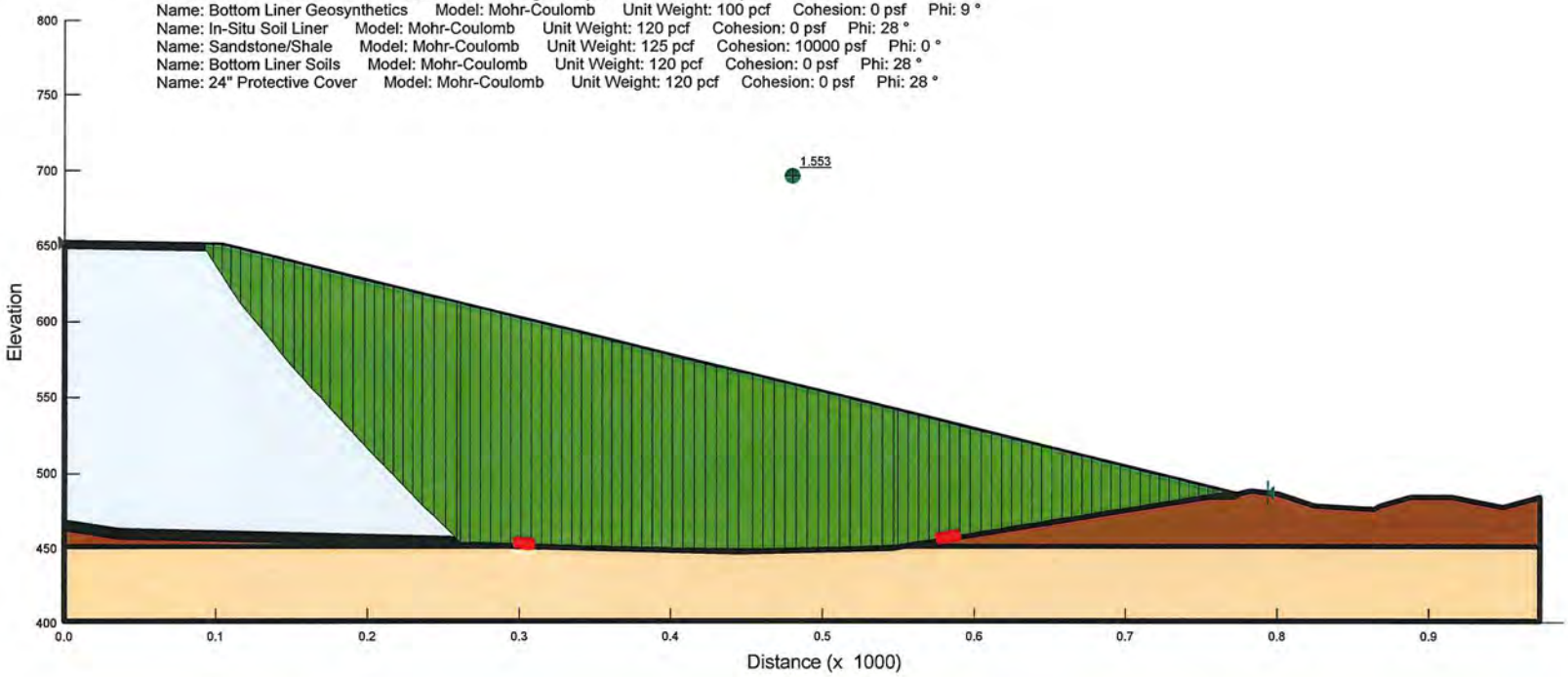
File Name: Section B-B' Full Height -bottom Liner2.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



File Name: Section C-C'-Bottom Liner.gsz

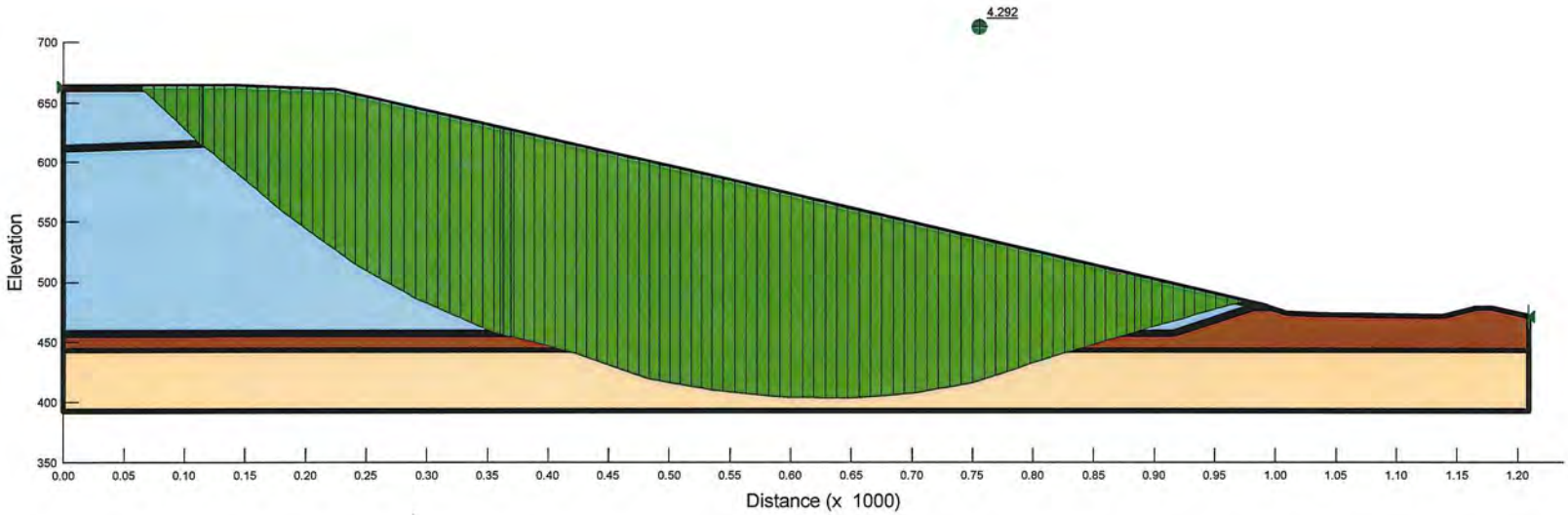
Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



FOUNDATION STABILITY COVER SECTIONS

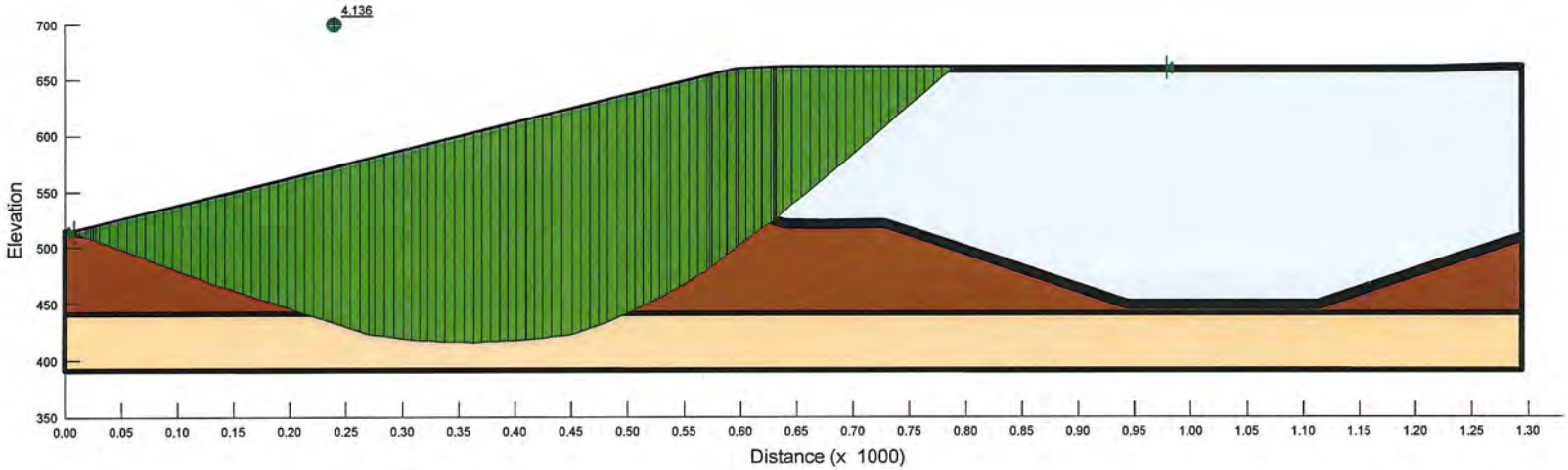
File Name: Section A-A' Foundation.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



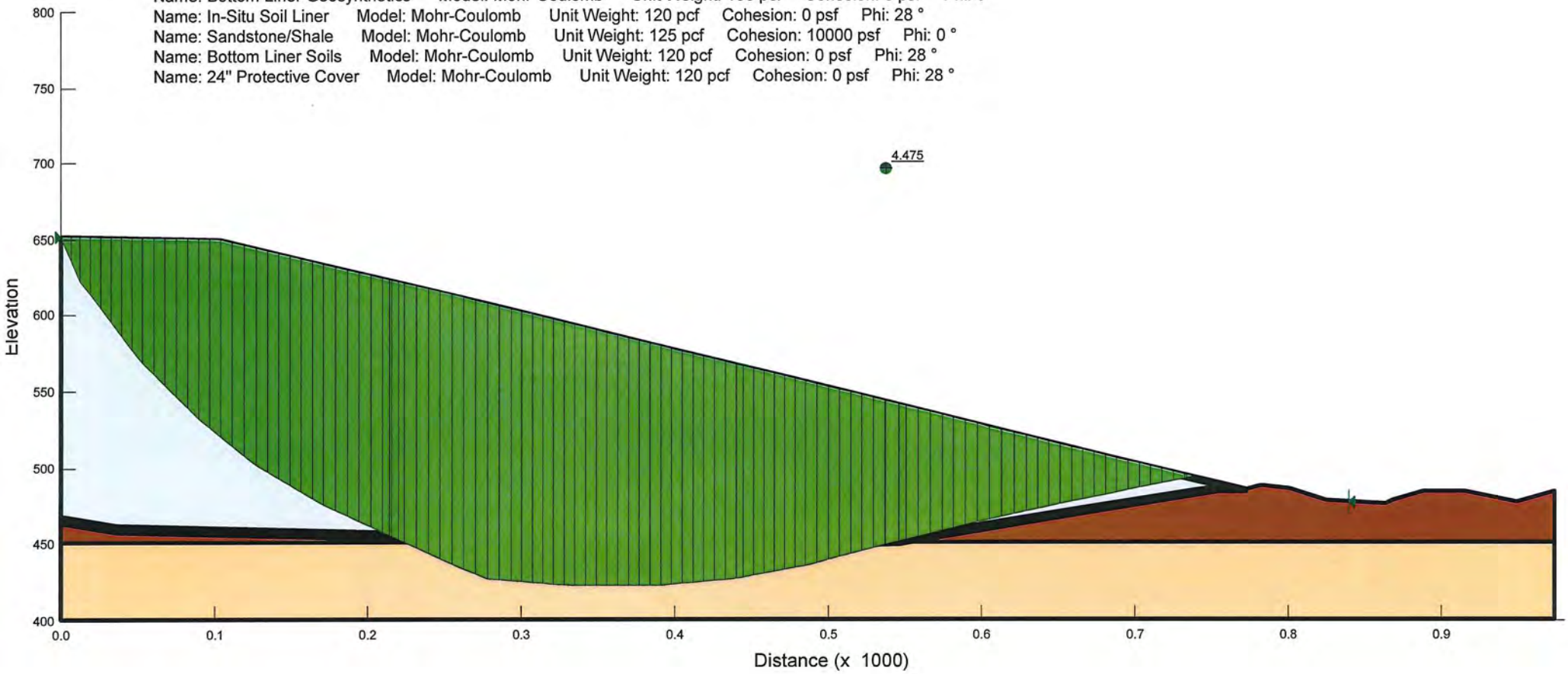
File Name: Section B-B' Full Height -foundation soils.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



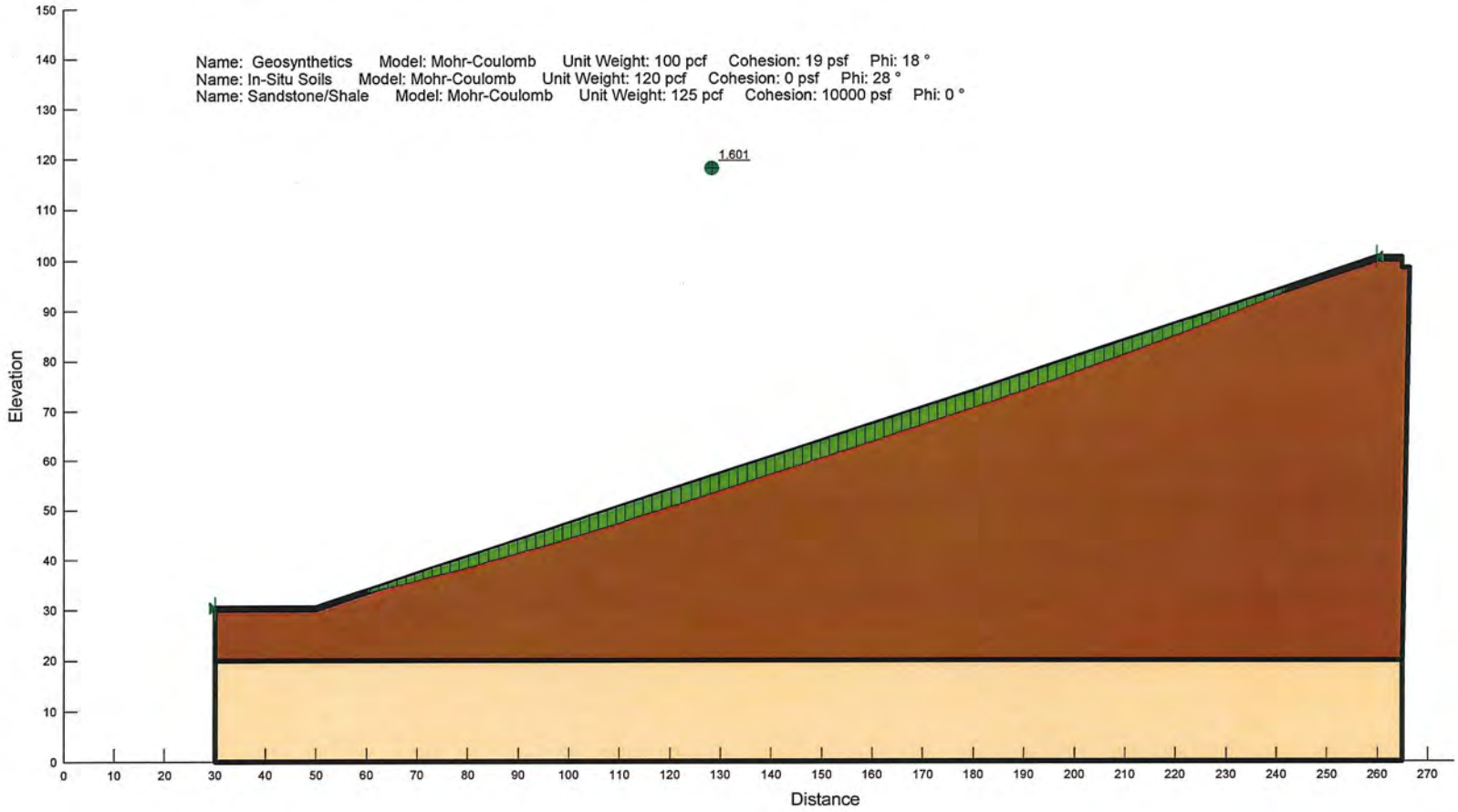
File Name: Section C-C'-foundation.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



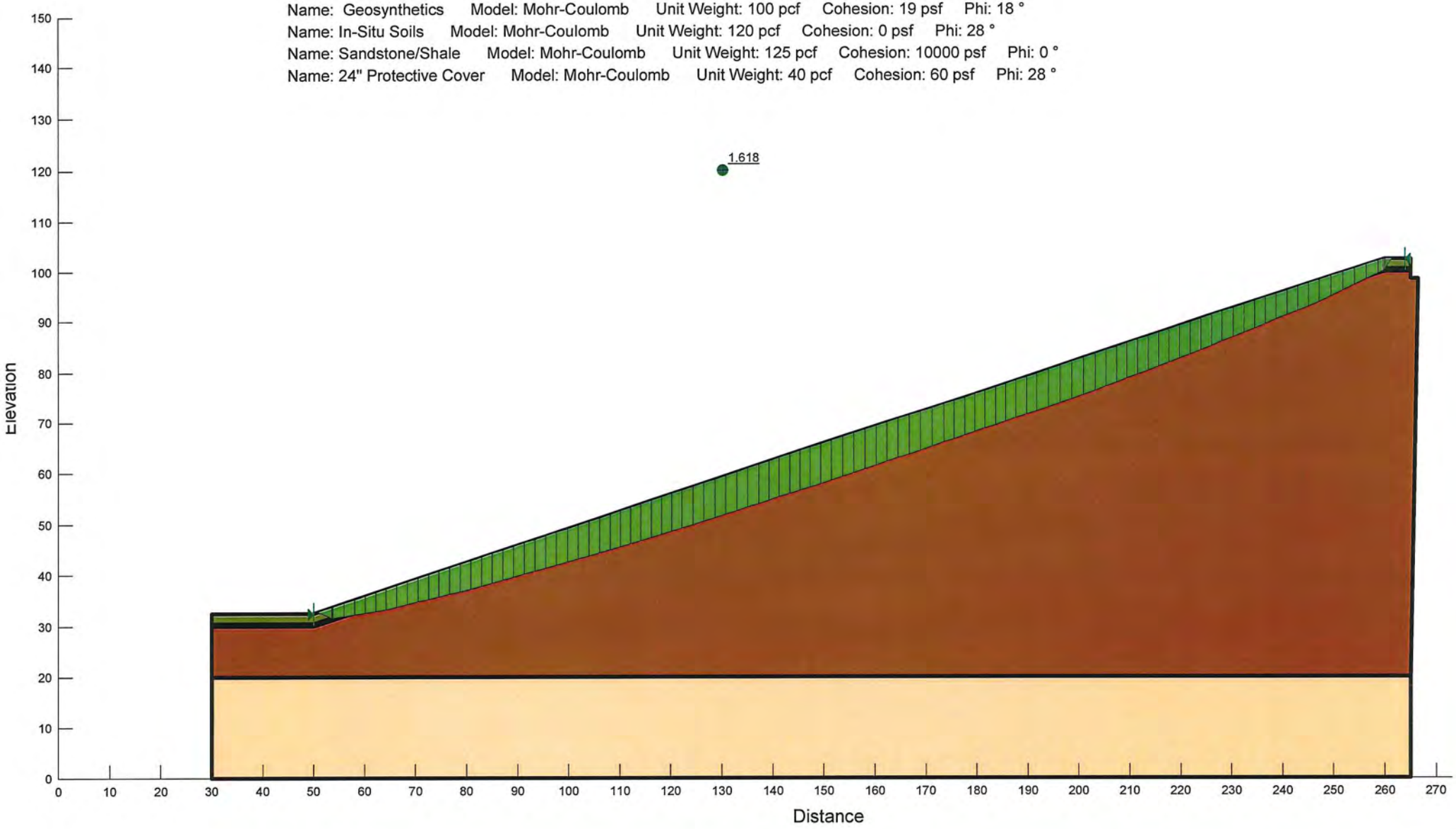
ANCHOR TRENCH SECTIONS

File Name: Anchor Trench.gsz



File Name: Anchor Trench2.gsz

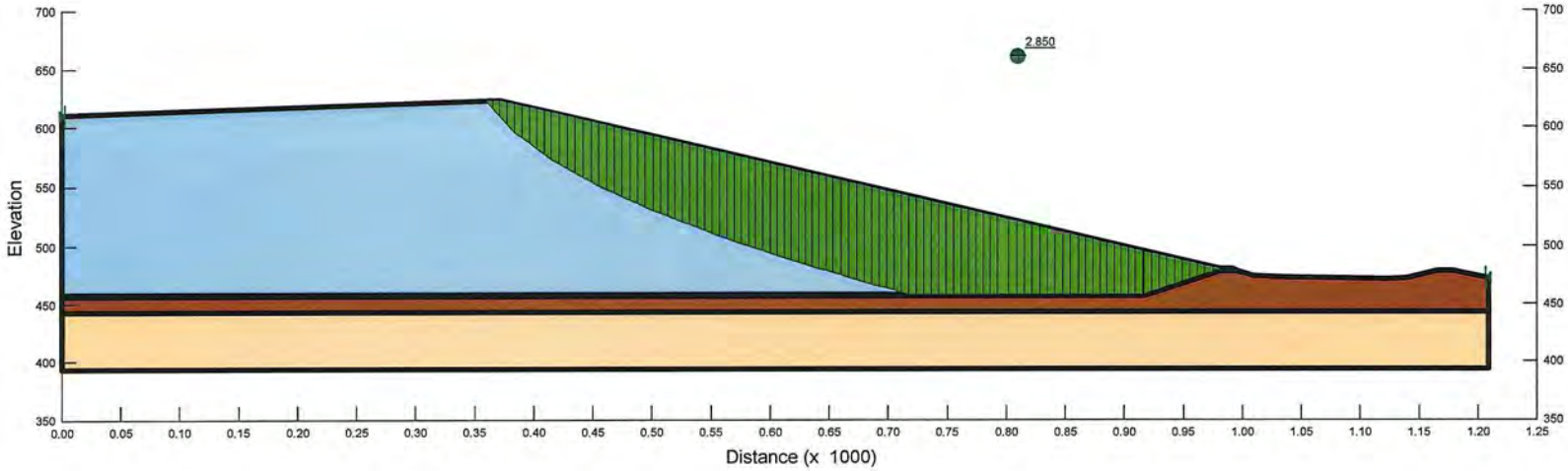
Name: Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: In-Situ Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 40 pcf Cohesion: 60 psf Phi: 28 °



INTERIM WASTE SLOPE SECTIONS
WITH CORRESPONDING ANALYSIS

File Name: Section A-A' -Interim Waste Slope-circular.gsz

Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 54
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 1:24:55 PM
File Name: Section A-A' -Interim Waste Slope-circular.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/22/2013
Last Solved Time: 1:25:18 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 3 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (2.8497305, 610.09976) ft
Right Coordinate: (1206.8128, 472.49322) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	2.850	(797.179, 1054.38)	288.0931	(359.541, 622.587)	(981.111, 480)
2	454	2.972	(797.179, 1054.38)	603.403	(376.518, 621.787)	(982.054, 480)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	362.4922	619.37135	0	110.01949	63.51978	300
2	Optimized	368.395	612.94065	0	513.1921	296.2916	300
3	Optimized	374.4957	606.29435	0	871.30249	503.04673	300
4	Optimized	380.79435	599.43245	0	1185.1483	684.2457	300
5	Optimized	387.0363	593.6803	0	1559.1815	900.19384	300
6	Optimized	393.22145	589.03795	0	1751.59	1011.281	300
7	Optimized	399.4066	584.3956	0	1941.9296	1121.1736	300
8	Optimized	405.59175	579.75325	0	2130.2003	1229.8717	300
9	Optimized	411.7769	575.1109	0	2316.5314	1337.45	300
10	Optimized	418.2238	570.919	0	2605.281	1504.1597	300
11	Optimized	424.93235	567.17765	0	2735.2066	1579.1723	300
12	Optimized	431.6409	563.4363	0	2864.4813	1653.809	300
13	Optimized	438.3495	559.6949	0	2992.9748	1727.9948	300
14	Optimized	445.05805	555.95355	0	3120.9476	1801.8799	300
15	Optimized	451.7666	552.2122	0	3248.3996	1875.4644	300
16	Optimized	458.38655	548.8716	0	3468.7735	2002.6973	300
17	Optimized	464.9179	545.93175	0	3553.8	2051.7874	300
18	Optimized	471.44925	542.9919	0	3638.8265	2100.8774	300
19	Optimized	477.9806	540.0521	0	3723.853	2149.9675	300
20	Optimized	484.51195	537.1123	0	3808.8794	2199.0576	300
21	Optimized	491.0433	534.17245	0	3894.0455	2248.2282	300
22	Optimized	497.57465	531.2326	0	3979.3513	2297.4795	300
23	Optimized	503.9751	528.5706	0	4153.7784	2398.1851	300
24	Optimized	510.2447	526.18645	0	4211.4739	2431.4956	300

25	Optimized	516.5143	523.8023	0	4269.4675	2464.9782	300
26	Optimized	522.7839	521.4181	0	4327.7594	2498.633	300
27	Optimized	529.05355	519.03395	0	4386.2003	2532.3739	300
28	Optimized	535.3232	516.6498	0	4445.0885	2566.373	300
29	Optimized	541.5928	514.2656	0	4504.4239	2600.6304	300
30	Optimized	547.8624	511.8814	0	4563.9084	2634.9738	300
31	Optimized	554.132	509.49725	0	4623.9893	2669.6615	300
32	Optimized	560.4016	507.1131	0	4684.3683	2704.5213	300
33	Optimized	566.56065	504.9132	0	4828.1469	2787.5319	300
34	Optimized	572.6092	502.89765	0	4870.3394	2811.8918	300
35	Optimized	578.65775	500.8821	0	4913.0025	2836.5233	300
36	Optimized	584.7063	498.8665	0	4955.9794	2861.336	300
37	Optimized	590.75485	496.85095	0	4999.4267	2886.4204	300
38	Optimized	596.8034	494.8354	0	5043.1878	2911.6858	300
39	Optimized	602.85195	492.8198	0	5087.2625	2937.1324	300
40	Optimized	608.9005	490.80425	0	5131.8078	2962.8506	300
41	Optimized	614.94905	488.7887	0	5176.6669	2988.75	300
42	Optimized	620.8988	486.87835	0	5273.8363	3044.8508	300
43	Optimized	626.74975	485.0733	0	5308.9494	3065.1234	300
44	Optimized	632.60065	483.26825	0	5344.5526	3085.6789	300
45	Optimized	638.4516	481.4632	0	5380.319	3106.3286	300
46	Optimized	644.30255	479.6582	0	5416.4121	3127.167	300
47	Optimized	650.1535	477.85315	0	5452.8318	3148.1939	300
48	Optimized	656.4228	475.95205	0	5514.4983	3183.7971	300
49	Optimized	663.1104	473.955	0	5552.4671	3205.7184	300
50	Optimized	669.798	471.95795	0	5591.009	3227.9705	300
51	Optimized	676.4856	469.96085	0	5629.6942	3250.3054	300
52	Optimized	682.9829	468.07705	0	5710.1745	3296.7708	300
53	Optimized	689.28985	466.30655	0	5739.6367	3313.7808	300
54	Optimized	695.5968	464.53605	0	5769.4043	3330.9671	300
55	Optimized	701.9038	462.76555	0	5799.4771	3348.3297	300
56	Optimized	708.21075	460.9951	0	5829.7026	3365.7804	300
57	Optimized	714.52085	459.22375	0	5860.1962	3383.3858	300
58	Optimized	720.8063	458.33625	0	6602.6816	3510.7081	0
59	Optimized	727.0639	458.33355	0	6491.2972	3451.484	0
60	Optimized	733.3215	458.3308	0	6378.954	3391.75	0

61	Optimized	739.5791	458.32805	0	6265.8118	3331.5912	0
62	Optimized	745.8367	458.32535	0	6151.7107	3270.9226	0
63	Optimized	752.09435	458.3226	0	6036.9704	3209.9141	0
64	Optimized	758.352	458.31985	0	5921.431	3148.4807	0
65	Optimized	764.6096	458.31715	0	5805.0926	3086.6225	0
66	Optimized	770.8672	458.31445	0	5688.2749	3024.5094	0
67	Optimized	777.1248	458.3117	0	5570.6581	2961.9714	0
68	Optimized	783.3824	458.30895	0	5452.5618	2899.1786	0
69	Optimized	789.64	458.30625	0	5333.8264	2836.0458	0
70	Optimized	797.4242	458.27775	0	5177.1257	2752.7266	0
71	Optimized	805.35655	458.25795	0	5044.7486	2682.3404	0
72	Optimized	811.9105	458.2727	0	4916.4289	2614.1116	0
73	Optimized	818.46445	458.28745	0	4787.8041	2545.7206	0
74	Optimized	825.01835	458.30215	0	4658.8741	2477.1673	0
75	Optimized	831.57225	458.3169	0	4529.6389	2408.4518	0
76	Optimized	838.1262	458.33165	0	4400.2512	2339.6551	0
77	Optimized	844.68015	458.34635	0	4270.8635	2270.8584	0
78	Optimized	851.23405	458.3611	0	4141.3231	2201.9806	0
79	Optimized	857.8339	458.37595	0	4010.8038	2132.5822	0
80	Optimized	864.2115	458.3775	0	3880.8762	2063.4985	0
81	Optimized	870.2811	458.36575	0	3764.481	2001.6101	0
82	Optimized	876.3109	458.3541	0	3648.8881	1940.1482	0
83	Optimized	882.34065	458.34245	0	3533.6269	1878.8628	0
84	Optimized	888.3704	458.33075	0	3418.3657	1817.5773	0
85	Optimized	894.4002	458.3191	0	3303.2703	1756.38	0
86	Optimized	900.43	458.30745	0	3188.5066	1695.3591	0
87	Optimized	906.45975	458.2958	0	3073.9088	1634.4263	0
88	Optimized	912.4895	458.28415	0	2959.4768	1573.5817	0
89	Optimized	915.77675	458.3304	0	3055.3049	1624.5344	0
90	Optimized	916.3991	458.44945	0	3031.8839	1612.0813	0
91	Optimized	919.9643	459.5896	0	2985.0011	1587.1532	0
92	Optimized	926.39475	461.73605	0	2651.9248	1410.0534	0
93	Optimized	932.8252	463.8825	0	2323.4212	1235.385	0
94	Optimized	939.25565	466.02895	0	1999.343	1063.0695	0
95	Optimized	945.6861	468.1754	0	1679.69	893.10703	0
96	Optimized	952.11655	470.32185	0	1364.7426	725.64652	0

97	Optimized	958.547	472.4683	0	1054.25	560.55466	0
98	Optimized	964.97745	474.61475	0	748.24165	397.84714	0
99	Optimized	971.40795	476.7612	0	446.70285	237.51612	0
100	Optimized	977.8384	478.90765	0	149.55982	79.522369	0
101	Optimized	981.08225	479.99045	0	1.2238441	0.65072946	0

Slices of Slip Surface: 454

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	454	379.54315	618.88585	0	57.3493	33.110634	300
2	454	385.59385	613.16245	0	331.12091	191.17274	300
3	454	391.6446	607.59425	0	593.44047	342.62302	300
4	454	397.69535	602.1756	0	844.98955	487.85494	300
5	454	403.74605	596.9012	0	1086.4215	627.24576	300
6	454	409.79675	591.76605	0	1318.3085	761.12579	300
7	454	415.84745	586.7656	0	1541.2019	889.81332	300
8	454	421.8982	581.89555	0	1755.6456	1013.6225	300
9	454	427.94895	577.1519	0	1962.0228	1132.7744	300
10	454	433.99965	572.53095	0	2160.9087	1247.6012	300
11	454	440.05035	568.0292	0	2352.5415	1358.2405	300
12	454	446.10105	563.64335	0	2537.472	1465.0101	300
13	454	452.1518	559.3703	0	2715.8951	1568.0228	300
14	454	458.20255	555.20715	0	2888.3122	1667.5678	300
15	454	464.25325	551.1512	0	3054.8528	1763.7201	300
16	454	470.30395	547.1999	0	3215.9504	1856.7299	300
17	454	476.35465	543.3508	0	3371.7902	1946.704	300
18	454	482.4054	539.6016	0	3522.5794	2033.7622	300
19	454	488.45615	535.9501	0	3668.5489	2118.0377	300
20	454	494.50685	532.39425	0	3810.0894	2199.7562	300
21	454	500.55755	528.9322	0	3947.0421	2278.8258	300
22	454	506.60825	525.56205	0	4079.9761	2355.5753	300
23	454	512.659	522.282	0	4208.6133	2429.844	300
24	454	518.70975	519.09045	0	4333.5552	2501.9792	300
25	454	524.76045	515.98585	0	4454.5423	2571.8312	300
26	454	530.81115	512.96665	0	4571.7599	2639.5068	300

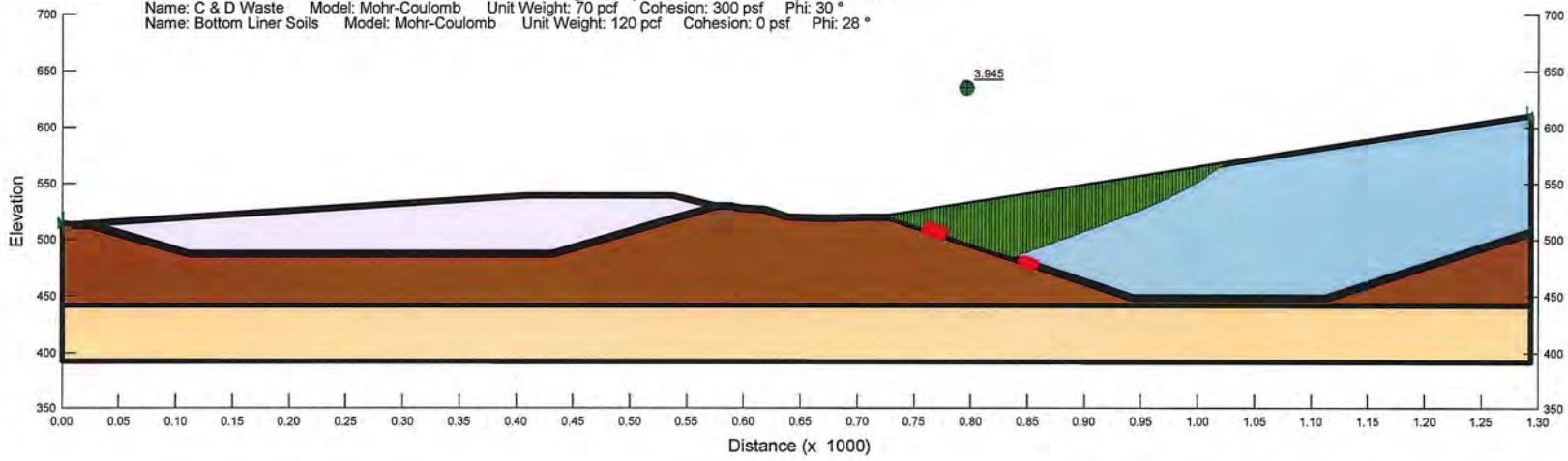
27	454	536.86185	510.03145	0	4685.5559	2705.207	300
28	454	542.9126	507.1789	0	4795.6897	2768.7927	300
29	454	548.96335	504.4077	0	4902.375	2830.3875	300
30	454	555.01405	501.7167	0	5005.8333	2890.1192	300
31	454	561.06475	499.10465	0	5105.6894	2947.7712	300
32	454	567.11545	496.5704	0	5202.4798	3003.6531	300
33	454	573.1662	494.113	0	5295.8356	3057.5521	300
34	454	579.21695	491.7314	0	5385.8467	3109.5201	300
35	454	585.26765	489.42465	0	5472.6095	3159.6126	300
36	454	591.31835	487.19185	0	5556.2236	3207.8872	300
37	454	597.3691	485.03205	0	5636.3274	3254.1351	300
38	454	603.41985	482.9445	0	5713.182	3298.5072	300
39	454	609.47055	480.9284	0	5786.5851	3340.8865	300
40	454	615.52125	478.983	0	5856.6471	3381.3368	300
41	454	621.57195	477.1076	0	5923.0128	3419.6531	300
42	454	627.6227	475.30145	0	5985.9544	3455.9924	300
43	454	633.67345	473.56395	0	6045.1178	3490.1504	300
44	454	639.72415	471.8945	0	6100.6234	3522.1966	300
45	454	645.77485	470.2925	0	6152.2778	3552.0193	300
46	454	651.82555	468.7574	0	6199.8852	3579.5054	300
47	454	657.8763	467.28865	0	6243.414	3604.6368	300
48	454	663.92705	465.88575	0	6282.8332	3627.3955	300
49	454	669.97775	464.5483	0	6317.9523	3647.6714	300
50	454	676.02845	463.27585	0	6348.7443	3665.4492	300
51	454	682.07915	462.0679	0	6374.859	3680.5266	300
52	454	688.1299	460.92405	0	6396.271	3692.8888	300
53	454	694.18065	459.844	0	6412.96	3702.5242	300
54	454	700.23135	458.82745	0	6424.5777	3709.2317	300
55	454	706.6777	457.816	0	6433.1537	3420.5685	0
56	454	713.51965	456.81805	0	6476.482	3443.6066	0
57	454	719.91915	455.9546	0	6508.2469	3460.4963	0
58	454	725.87625	455.2156	0	6529.6189	3471.86	0
59	454	731.83335	454.53665	0	6543.0254	3478.9883	0
60	454	737.79045	453.9176	0	6548.4417	3481.8682	0
61	454	743.74755	453.3582	0	6545.6796	3480.3996	0
62	454	749.70465	452.85835	0	6534.7238	3474.5743	0

63	454	755.66175	452.41785	0	6515.0578	3464.1177	0
64	454	761.61885	452.0366	0	6486.6751	3449.0263	0
65	454	767.5759	451.7145	0	6449.5696	3429.297	0
66	454	773.53295	451.45135	0	6403.405	3404.7508	0
67	454	779.49005	451.24715	0	6348.1873	3375.3911	0
68	454	785.44715	451.1019	0	6283.758	3341.1334	0
69	454	791.40425	451.0155	0	6209.9603	3301.8944	0
70	454	797.36135	450.9879	0	6126.646	3257.5955	0
71	454	803.31845	451.0191	0	6033.8393	3208.2492	0
72	454	809.27555	451.1091	0	5931.3998	3153.7812	0
73	454	815.23265	451.258	0	5819.3609	3094.2091	0
74	454	821.18975	451.4658	0	5697.427	3029.3757	0
75	454	827.14685	451.7325	0	5565.808	2959.3926	0
76	454	833.10395	452.05825	0	5424.3869	2884.1977	0
77	454	839.06105	452.44315	0	5273.2189	2803.8202	0
78	454	845.0181	452.8873	0	5112.1973	2718.2035	0
79	454	850.97515	453.39085	0	4941.5557	2627.4718	0
80	454	856.93225	453.9539	0	4761.1976	2531.5737	0
81	454	862.88935	454.5766	0	4571.2024	2430.5514	0
82	454	868.84645	455.2592	0	4371.6525	2324.4488	0
83	454	874.80355	456.0019	0	4162.638	2213.3139	0
84	454	881.2028	456.86935	0	3927.5316	2088.3056	0
85	454	888.04415	457.87145	0	3664.8859	1948.6544	0
86	454	894.41095	458.87355	0	3478.6894	2008.4222	300
87	454	900.3033	459.8656	0	3279.7603	1893.5705	300
88	454	906.19565	460.9178	0	3074.9878	1775.3451	300
89	454	912.08795	462.03055	0	2864.7963	1653.9909	300
90	454	917.9803	463.2041	0	2649.2804	1529.5627	300
91	454	923.87265	464.4388	0	2428.5373	1402.1166	300
92	454	929.76495	465.7351	0	2202.835	1271.8074	300
93	454	935.65725	467.0934	0	1972.2781	1138.6953	300
94	454	941.5496	468.5141	0	1737.3055	1003.0338	300
95	454	947.44195	469.99765	0	1497.7813	864.74444	300
96	454	953.33425	471.54455	0	1254.1177	724.06521	300
97	454	959.22655	473.1553	0	1006.4819	581.09259	300
98	454	965.1189	474.8304	0	755.04545	435.9257	300

99	454	971.3122	476.66285	0	455.67812	242.28836	0
100	454	977.80645	478.66035	0	180.3599	95.89906	0
101	454	981.5536	479.83955	0	20.44147	10.868923	0

File Name: Section B-B' MW Initial Height wtih Int. Cover-MS Waste-block.gsz

Name: Municipal Solid Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 47
Last Edited By: Sonawane, Richa
Date: 10/25/2013
Time: 2:13:42 PM
File Name: Section B-B' MW Initial Height wtih Int. Cover-MS Waste-block.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\Revised\
Last Solved Date: 10/25/2013
Last Solved Time: 2:14:10 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Block
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Restrict Block Crossing: No
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 3 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Municipal Solid Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °

Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0.94846758, 514.77892) ft
Right Coordinate: (1290.5014, 610.42278) ft

Slip Surface Block

Left Grid
- Upper Left: (763, 513) ft
- Lower Left: (760, 508) ft
- Lower Right: (774, 503) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 135 °
- Ending Angle: 180 °
- Angle Increments: 2

Right Grid
- Upper Left: (847, 483) ft
- Lower Left: (845, 480) ft
- Lower Right: (855, 476) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 45 °
- Ending Angle: 65 °
- Angle Increments: 2

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	3.945	(834.374, 559.507)	129.3254	(1022.23, 567.758)	(726.977, 521.02)
2	751	6.044	(834.374, 559.507)	86.594	(926.143, 552.476)	(749.313, 524.354)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	727.665	520.7881	0	23.531122	3.7269636	0
2	Optimized	728.97505	520.3462	0	84.739829	13.42147	0
3	Optimized	731.08555	519.6343	0	179.2539	28.391029	0
4	Optimized	734.06145	518.63055	0	293.40619	46.470976	0
5	Optimized	737.03735	517.6268	0	408.29401	64.667418	0
6	Optimized	740.01325	516.623	0	523.90779	82.978842	0
7	Optimized	742.98915	515.6192	0	640.22207	101.40121	0
8	Optimized	745.85655	514.65795	0	752.13361	119.12626	0
9	Optimized	748.61545	513.7392	0	859.97921	136.20733	0
10	Optimized	751.37435	512.8204	0	968.40943	153.38098	0
11	Optimized	754.13325	511.90165	0	1077.4243	170.64724	0
12	Optimized	756.96855	510.9568	0	1190.1391	188.49952	0
13	Optimized	759.8802	509.98575	0	1306.5499	206.93717	0
14	Optimized	762.79185	509.0147	0	1423.547	225.4677	0
15	Optimized	765.7035	508.0437	0	1541.1306	244.09111	0
16	Optimized	768.61515	507.0727	0	1659.2356	262.7971	0
17	Optimized	771.5268	506.10165	0	1777.8943	281.5908	0
18	Optimized	774.43845	505.1306	0	1897.0093	300.45675	0
19	Optimized	777.31635	504.17235	0	2014.7769	319.10932	0
20	Optimized	780.1604	503.22685	0	2131.623	337.61591	0
21	Optimized	783.0044	502.2813	0	2248.8694	356.18592	0
22	Optimized	785.84845	501.33575	0	2366.4495	374.80878	0
23	Optimized	788.84015	500.33835	0	2491.4766	394.61113	0
24	Optimized	791.97945	499.28905	0	2622.564	415.37333	0
25	Optimized	795.1187	498.2397	0	2753.9535	436.18339	0
26	Optimized	798.25795	497.19035	0	2885.5243	457.02216	0
27	Optimized	801.4508	496.12315	0	3020.5011	478.40037	0
28	Optimized	804.6864	495.04425	0	3153.1363	499.40773	0
29	Optimized	807.85125	493.9915	0	3286.484	520.52793	0
30	Optimized	810.95615	492.9587	0	3416.0608	541.05088	0
31	Optimized	814.06105	491.9259	0	3545.6376	561.57383	0
32	Optimized	817.166	490.89305	0	3674.9089	582.04838	0

33	Optimized	820.27095	489.8602	0	3804.1801	602.52293	0
34	Optimized	823.37585	488.8274	0	3932.8401	622.90068	0
35	Optimized	826.50905	487.8478	0	4022.1813	637.05094	0
36	Optimized	829.6706	486.92135	0	4137.2222	655.27163	0
37	Optimized	832.83215	485.9949	0	4251.3525	673.34808	0
38	Optimized	836.06095	485.04875	0	4368.657	691.92729	0
39	Optimized	839.15675	485.10675	0	3747.6254	2163.6925	300
40	Optimized	842.05225	486.18865	0	3697.8037	2134.928	300
41	Optimized	844.93635	487.249	0	3663.5193	2115.1338	300
42	Optimized	847.809	488.2878	0	3617.0337	2088.2954	300
43	Optimized	850.68165	489.3266	0	3571.2029	2061.835	300
44	Optimized	853.55435	490.3654	0	3525.3721	2035.3745	300
45	Optimized	856.427	491.40415	0	3480.196	2009.2921	300
46	Optimized	859.29965	492.4429	0	3435.0199	1983.2097	300
47	Optimized	862.1723	493.4817	0	3390.4986	1957.5053	300
48	Optimized	865.04495	494.5205	0	3345.9772	1931.8008	300
49	Optimized	867.91765	495.5593	0	3301.7832	1906.2854	300
50	Optimized	870.7903	496.5981	0	3257.8511	1880.9212	300
51	Optimized	873.66295	497.6369	0	3214.2791	1855.7649	300
52	Optimized	876.5239	498.67925	0	3165.1189	1827.3823	300
53	Optimized	879.3731	499.72515	0	3121.4303	1802.1586	300
54	Optimized	882.2223	500.77105	0	3078.0382	1777.1062	300
55	Optimized	885.0715	501.81695	0	3034.8768	1752.1869	300
56	Optimized	887.92075	502.86285	0	2992.0118	1727.4388	300
57	Optimized	890.77	503.90875	0	2949.3775	1702.8239	300
58	Optimized	893.6192	504.95465	0	2906.9739	1678.3421	300
59	Optimized	896.4684	506.00055	0	2864.8338	1654.0126	300
60	Optimized	899.3554	507.0726	0	2814.0635	1624.7003	300
61	Optimized	902.2802	508.17085	0	2769.7322	1599.1056	300
62	Optimized	905.205	509.26915	0	2725.6569	1573.6587	300
63	Optimized	908.1298	510.3674	0	2681.7737	1548.3228	300
64	Optimized	911.0546	511.46565	0	2638.1145	1523.1161	300
65	Optimized	913.9794	512.5639	0	2594.6474	1498.0204	300
66	Optimized	916.9042	513.66215	0	2551.3723	1473.0355	300
67	Optimized	919.829	514.76045	0	2508.2893	1448.1615	300
68	Optimized	922.7538	515.8587	0	2465.3663	1423.3799	300

69	Optimized	925.73685	517.0087	0	2405.4713	1388.7995	300
70	Optimized	928.77815	518.21055	0	2357.5533	1361.134	300
71	Optimized	931.8195	519.4124	0	2309.7882	1333.5568	300
72	Optimized	934.86085	520.6142	0	2262.1454	1306.0503	300
73	Optimized	937.90215	521.816	0	2214.6249	1278.6143	300
74	Optimized	940.94345	523.0178	0	2167.1962	1251.2313	300
75	Optimized	943.9848	524.21965	0	2119.8898	1223.9189	300
76	Optimized	947.02615	525.4215	0	2072.6445	1196.6419	300
77	Optimized	950.06745	526.6233	0	2025.4605	1169.4001	300
78	Optimized	953.00185	527.8756	0	1938.2656	1119.0582	300
79	Optimized	955.8293	529.17835	0	1883.4015	1087.3823	300
80	Optimized	958.65675	530.4811	0	1828.5373	1055.7065	300
81	Optimized	961.4842	531.78385	0	1773.6089	1023.9936	300
82	Optimized	964.31165	533.0866	0	1718.6484	992.26212	300
83	Optimized	967.1391	534.3894	0	1663.6237	960.49357	300
84	Optimized	969.96655	535.69215	0	1608.5347	928.68791	300
85	Optimized	972.794	536.9949	0	1553.3172	896.80808	300
86	Optimized	975.72005	538.46045	0	1459.0852	842.40325	300
87	Optimized	978.7448	540.08875	0	1385.7554	800.06628	300
88	Optimized	981.76955	541.717	0	1312.1637	757.57804	300
89	Optimized	984.7943	543.34525	0	1238.2517	714.90493	300
90	Optimized	987.81905	544.97355	0	1164.0194	672.04694	300
91	Optimized	990.8438	546.60185	0	1089.467	629.00407	300
92	Optimized	993.86855	548.2301	0	1014.5361	585.7427	300
93	Optimized	996.8933	549.85835	0	939.25592	542.27966	300
94	Optimized	999.91785	551.48665	0	863.56817	498.58131	300
95	Optimized	1002.817	553.33105	0	732.22106	422.74802	300
96	Optimized	1005.5905	555.39155	0	627.64286	362.36977	300
97	Optimized	1008.3635	557.452	0	522.22526	301.50689	300
98	Optimized	1011.1365	559.51245	0	415.96825	240.15938	300
99	Optimized	1013.9095	561.57295	0	308.84289	178.31053	300
100	Optimized	1016.6825	563.63345	0	200.83472	115.95198	300
101	Optimized	1019.4555	565.69395	0	91.911876	53.065347	300
102	Optimized	1021.538	567.2412	0	44.266055	23.536679	0

Slices of Slip Surface: 751

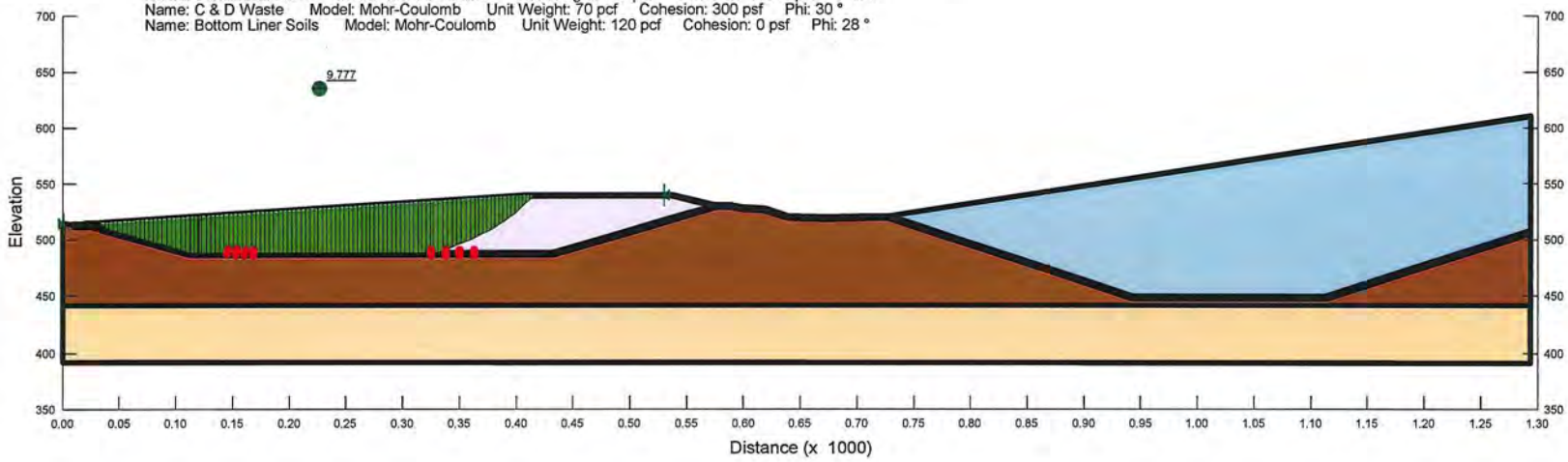
	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	751	749.5836	524.08305	0	41.321958	21.971275	0
2	751	750.78805	522.8786	0	230.15662	132.88098	300
3	751	752.65595	521.01065	0	415.84079	240.08579	300
4	751	754.5239	519.14275	0	605.04172	349.321	300
5	751	756.39185	517.27485	0	797.83891	460.63251	300
6	751	758.25975	515.40695	0	994.27022	574.04218	300
7	751	760.12765	513.53905	0	1194.3356	689.55	300
8	751	761.99555	511.6711	0	1398.073	807.17783	300
9	751	763.8635	509.80315	0	1605.5202	926.94753	300
10	751	765.1928	508.4739	0	1569.5358	248.59005	0
11	751	766.4735	507.76155	0	1622.3706	862.62974	0
12	751	768.205	507.1668	0	1691.8881	899.59284	0
13	751	769.8972	506.61135	0	1762.8022	937.29853	0
14	751	771.5894	506.0559	0	1833.8847	975.09379	0
15	751	773.2816	505.50045	0	1905.248	1013.0383	0
16	751	774.9738	504.945	0	1976.8358	1051.1023	0
17	751	776.6969	504.3794	0	1997.049	316.30149	0
18	751	778.45095	503.8036	0	2068.5483	327.62586	0
19	751	780.20505	503.22785	0	2140.1016	338.9588	0
20	751	781.95915	502.6521	0	2211.8175	350.31748	0
21	751	783.71325	502.0763	0	2283.5334	361.67616	0
22	751	785.46735	501.5005	0	2355.2493	373.03484	0
23	751	787.22145	500.92475	0	2427.0193	384.4021	0
24	751	788.97555	500.349	0	2498.7352	395.76078	0
25	751	790.72965	499.7732	0	2570.3969	407.11088	0
26	751	792.48375	499.19745	0	2641.9503	418.44382	0
27	751	794.23785	498.6217	0	2713.4495	429.76819	0
28	751	795.99195	498.0459	0	2784.7863	441.06681	0
29	751	797.74605	497.4701	0	2855.9605	452.3397	0
30	751	799.50015	496.89435	0	2926.9722	463.58686	0
31	751	801.25425	496.3186	0	2997.7131	474.79111	0
32	751	803.00835	495.7428	0	3068.1832	485.95247	0

33	751	804.76245	495.16705	0	3138.4366	497.07952	0
34	751	806.5165	494.5913	0	3208.365	508.15509	0
35	751	808.27055	494.0155	0	3277.9142	519.17061	0
36	751	810.02465	493.4397	0	3347.0843	530.12607	0
37	751	811.77875	492.86395	0	3415.8752	541.02148	0
38	751	813.53285	492.2882	0	3484.2328	551.84826	0
39	751	815.28695	491.7124	0	3552.1571	562.60641	0
40	751	817.04105	491.13665	0	3619.5938	573.28734	0
41	751	818.79515	490.5609	0	3686.4889	583.88248	0
42	751	820.54925	489.9851	0	3752.8965	594.40042	0
43	751	822.30335	489.4093	0	3818.6541	604.8154	0
44	751	824.05745	488.83355	0	3883.9243	615.15317	0
45	751	825.81155	488.2578	0	3948.4902	625.37942	0
46	751	827.56565	487.682	0	4012.5145	635.51987	0
47	751	829.31975	487.10625	0	4075.8347	645.54879	0
48	751	831.07385	486.5305	0	4138.4507	655.46619	0
49	751	832.82795	485.9547	0	4200.4166	665.28064	0
50	751	834.58205	485.3789	0	4261.6785	674.98356	0
51	751	836.33615	484.80315	0	4322.182	684.56637	0
52	751	838.0902	484.2274	0	4381.9813	694.03766	0
53	751	839.84425	483.6516	0	4440.9682	703.38026	0
54	751	841.59835	483.07585	0	4499.2509	712.61133	0
55	751	843.35245	482.5001	0	4556.7753	721.7223	0
56	751	845.10655	481.9243	0	4613.4871	730.70458	0
57	751	846.86065	481.3485	0	4669.3865	739.55817	0
58	751	848.61475	480.77275	0	4724.5276	748.29166	0
59	751	850.36885	480.197	0	4778.9103	756.90504	0
60	751	852.12295	479.6212	0	4832.4806	765.38973	0
61	751	853.0484	479.3817	0	3885.9055	615.46696	0
62	751	853.97675	480.31005	0	3616.3748	2087.9149	300
63	751	855.73665	482.07	0	3526.0548	2035.7687	300
64	751	857.4966	483.82995	0	3436.6187	1984.1327	300
65	751	859.25655	485.58985	0	3347.9862	1932.9607	300
66	751	861.01645	487.3498	0	3260.0769	1882.2063	300
67	751	862.7764	489.10975	0	3172.8908	1831.8694	300
68	751	864.53635	490.8697	0	3086.3476	1781.9036	300

69	751	866.2963	492.62965	0	3000.3668	1732.2626	300
70	751	868.05625	494.38955	0	2914.9084	1682.9231	300
71	751	869.81615	496.1495	0	2829.8517	1633.8156	300
72	751	871.5761	497.90945	0	2745.1968	1584.9401	300
73	751	873.33605	499.66935	0	2660.8634	1536.2502	300
74	751	875.096	501.4293	0	2576.8112	1487.7226	300
75	751	876.85595	503.18925	0	2492.9196	1439.2878	300
76	751	878.61585	504.9492	0	2409.1889	1390.9458	300
77	751	880.3758	506.70915	0	2325.4982	1342.627	300
78	751	882.13575	508.46905	0	2241.8076	1294.3082	300
79	751	883.89565	510.229	0	2158.0768	1245.9662	300
80	751	885.6556	511.98895	0	2074.2657	1197.5778	300
81	751	887.41555	513.7489	0	1990.2536	1149.0735	300
82	751	889.1755	515.50885	0	1906.0005	1100.4299	300
83	751	890.93545	517.26875	0	1821.426	1051.6008	300
84	751	892.69535	519.0287	0	1736.53	1002.5861	300
85	751	894.4553	520.78865	0	1651.2323	953.33942	300
86	751	896.21525	522.54855	0	1565.4524	903.81439	300
87	751	897.9752	524.3085	0	1479.1503	853.98781	300
88	751	899.73515	526.06845	0	1392.2454	803.81327	300
89	751	901.49505	527.8284	0	1304.6977	753.26758	300
90	751	903.255	529.58835	0	1216.467	702.32755	300
91	751	905.01495	531.34825	0	1127.5131	650.96998	300
92	751	906.77485	533.1082	0	1037.7556	599.14847	300
93	751	908.5348	534.86815	0	947.15438	546.83984	300
94	751	910.29475	536.6281	0	855.66925	494.02087	300
95	751	912.0547	538.38805	0	763.26002	440.66838	300
96	751	913.81465	540.14795	0	669.84635	386.73597	300
97	751	915.57455	541.9079	0	575.4684	332.24684	300
98	751	917.3345	543.66785	0	480.00566	277.1314	300
99	751	919.09445	545.42775	0	383.42998	221.3734	300
100	751	920.8544	547.1877	0	285.74941	164.9775	300
101	751	922.61435	548.94765	0	186.91172	107.91353	300
102	751	924.37425	550.7076	0	86.896814	50.169899	300
103	751	925.69845	552.03185	0	41.122349	21.865141	0

File Name: Section B-B' MW Initial Height wtih Int. Cover- C &D Waste-block.gsz

Name: Municipal Solid Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 41
Last Edited By: Sonawane, Richa
Date: 10/25/2013
Time: 1:57:01 PM
File Name: Section B-B' MW Initial Height wtih Int. Cover- C &D Waste-block.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\Revised\
Last Solved Date: 10/25/2013
Last Solved Time: 1:57:20 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Block
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Restrict Block Crossing: No
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 3 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Municipal Solid Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °

Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0.94846758, 514.77892) ft
Right Coordinate: (530, 540) ft

Slip Surface Block

Left Grid
- Upper Left: (146, 492) ft
- Lower Left: (145, 487) ft
- Lower Right: (168, 486) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 135 °
- Ending Angle: 180 °
- Angle Increments: 2

Right Grid
- Upper Left: (325, 491) ft
- Lower Left: (325, 486) ft
- Lower Right: (363, 486) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 45 °
- Ending Angle: 65 °
- Angle Increments: 2

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	9.777	(243.784, 545.483)	148.1155	(416.222, 540)	(31.9034, 515.286)
2	646	11.073	(243.784, 545.483)	133.557	(415.333, 540)	(74.3511, 518.068)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	32.265845	515.0621	0	25.027146	3.9639105	0
2	Optimized	33.27797	514.43685	0	106.48148	56.617205	0
3	Optimized	35.661755	512.9642	0	268.5973	155.07472	300
4	Optimized	39.1394	510.81585	0	442.99217	255.76165	300
5	Optimized	42.84051	509.1648	0	549.94249	292.40961	0
6	Optimized	46.755725	508.01675	0	651.26445	346.28345	0
7	Optimized	50.67094	506.8687	0	752.807	400.27458	0
8	Optimized	54.58616	505.72065	0	854.64367	454.4221	0
9	Optimized	58.501375	504.5726	0	956.70091	508.6869	0
10	Optimized	62.41659	503.4246	0	1059.0033	563.08202	0
11	Optimized	66.33181	502.27655	0	1161.5507	617.60746	0
12	Optimized	70.247025	501.1285	0	1264.3187	672.25018	0
13	Optimized	74.16224	499.9805	0	1367.3073	727.0102	0
14	Optimized	78.07746	498.83245	0	1470.492	781.87447	0
15	Optimized	81.992675	497.6844	0	1573.8973	836.85602	0
16	Optimized	85.90789	496.53635	0	1677.4741	891.9288	0
17	Optimized	89.897335	495.36555	0	1783.4101	948.25597	0
18	Optimized	93.961	494.17205	0	1891.5249	1005.7416	0
19	Optimized	98.024665	492.97855	0	1999.8286	1063.3277	0
20	Optimized	102.08835	491.78505	0	2108.2503	1120.9766	0
21	Optimized	106.152	490.5915	0	2216.8137	1178.7008	0
22	Optimized	110.21565	489.39795	0	2325.4716	1236.4752	0
23	Optimized	112.27445	488.80105	0	2309.5537	1228.0115	0
24	Optimized	112.3942	488.80045	0	2311.9557	1334.8082	300
25	Optimized	114.19715	488.7913	0	2319.1981	1233.1395	0
26	Optimized	117.6174	488.7739	0	2337.1206	1242.6691	0
27	Optimized	119.80285	488.7685	0	2344.8463	1246.7769	0
28	Optimized	121.47755	488.78205	0	2350.563	1249.8165	0
29	Optimized	124.6711	488.7923	0	2366.1331	1258.0953	0
30	Optimized	128.65945	488.7923	0	2384.4363	1267.8273	0
31	Optimized	132.6478	488.7923	0	2402.7145	1277.546	0
32	Optimized	136.6362	488.7923	0	2420.9425	1287.238	0

33	Optimized	140.62455	488.7923	0	2439.1455	1296.9167	0
34	Optimized	144.6129	488.7923	0	2457.2983	1306.5687	0
35	Optimized	148.60125	488.7923	0	2475.426	1316.2074	0
36	Optimized	152.5896	488.7923	0	2493.5036	1325.8194	0
37	Optimized	156.578	488.7923	0	2511.5561	1335.4181	0
38	Optimized	160.56635	488.7923	0	2529.6086	1345.0168	0
39	Optimized	164.5547	488.7923	0	2547.4104	1354.4821	0
40	Optimized	168.53465	488.79255	0	2565.2828	1363.985	0
41	Optimized	172.50615	488.79305	0	2583.1602	1373.4906	0
42	Optimized	176.47765	488.79355	0	2600.7858	1382.8623	0
43	Optimized	180.44915	488.79405	0	2618.4114	1392.234	0
44	Optimized	184.42065	488.79455	0	2636.037	1401.6058	0
45	Optimized	188.39215	488.79505	0	2653.6627	1410.9775	0
46	Optimized	192.3636	488.7955	0	2671.2883	1420.3492	0
47	Optimized	196.33505	488.79595	0	2688.6621	1429.587	0
48	Optimized	200.30655	488.79645	0	2706.0359	1438.8248	0
49	Optimized	204.27805	488.79695	0	2723.6615	1448.1965	0
50	Optimized	208.24955	488.79745	0	2741.0354	1457.4344	0
51	Optimized	212.22105	488.79795	0	2758.4092	1466.6722	0
52	Optimized	216.1095	488.7981	0	2775.2594	1475.6316	0
53	Optimized	219.9149	488.79795	0	2792.0776	1484.574	0
54	Optimized	223.7203	488.7978	0	2808.633	1493.3766	0
55	Optimized	227.5257	488.79765	0	2825.1884	1502.1793	0
56	Optimized	231.33115	488.7975	0	2841.4809	1510.8422	0
57	Optimized	235.1366	488.7973	0	2858.0363	1519.6449	0
58	Optimized	238.942	488.79715	0	2874.5917	1528.4475	0
59	Optimized	242.7474	488.797	0	2890.8843	1537.1104	0
60	Optimized	246.5528	488.79685	0	2907.4397	1545.9131	0
61	Optimized	250.3582	488.7967	0	2923.7323	1554.576	0
62	Optimized	254.1636	488.79655	0	2940.0249	1563.2389	0
63	Optimized	257.969	488.7964	0	2956.3175	1571.9019	0
64	Optimized	261.7744	488.7962	0	2972.61	1580.5648	0
65	Optimized	265.5798	488.79605	0	2988.9026	1589.2277	0
66	Optimized	269.38525	488.7959	0	3004.9325	1597.7509	0
67	Optimized	273.1907	488.79575	0	3021.225	1606.4139	0
68	Optimized	276.9961	488.7956	0	3037.5176	1615.0768	0

69	Optimized	280.8015	488.79545	0	3053.5474	1623.6	0
70	Optimized	284.6069	488.7953	0	3069.5773	1632.1232	0
71	Optimized	288.4123	488.7951	0	3085.8699	1640.7861	0
72	Optimized	292.2177	488.79495	0	3101.8997	1649.3093	0
73	Optimized	296.0231	488.7948	0	3117.9295	1657.8325	0
74	Optimized	299.8285	488.79465	0	3133.9593	1666.3557	0
75	Optimized	303.6339	488.7945	0	3150.2519	1675.0186	0
76	Optimized	307.43935	488.79435	0	3166.2817	1683.5418	0
77	Optimized	311.2448	488.7942	0	3182.3115	1692.065	0
78	Optimized	315.0502	488.794	0	3198.3413	1700.5882	0
79	Optimized	318.8556	488.79385	0	3214.3711	1709.1114	0
80	Optimized	322.661	488.7937	0	3230.4009	1717.6346	0
81	Optimized	325.81815	488.79455	0	3243.2129	1724.4469	0
82	Optimized	329.1075	488.79615	0	3256.9168	1731.7334	0
83	Optimized	333.19945	489.61815	0	3074.9852	1775.3435	300
84	Optimized	337.3095	491.25925	0	2985.8207	1723.8644	300
85	Optimized	341.4155	492.8988	0	2896.7052	1672.4135	300
86	Optimized	345.5215	494.53835	0	2807.5897	1620.9627	300
87	Optimized	349.6275	496.17785	0	2718.4743	1569.5119	300
88	Optimized	353.7335	497.81735	0	2629.3588	1518.061	300
89	Optimized	357.8395	499.45685	0	2540.2433	1466.6102	300
90	Optimized	361.67035	501.17545	0	2418.1647	1396.128	300
91	Optimized	365.2261	502.97315	0	2317.069	1337.7604	300
92	Optimized	368.7819	504.77085	0	2215.7725	1279.2769	300
93	Optimized	372.33765	506.5685	0	2114.3255	1220.7064	300
94	Optimized	375.89335	508.36615	0	2012.6525	1162.0055	300
95	Optimized	379.4491	510.16385	0	1910.7788	1103.1886	300
96	Optimized	383.00805	512.25775	0	1761.7815	1017.165	300
97	Optimized	386.5702	514.64785	0	1622.3542	936.66666	300
98	Optimized	390.13235	517.03795	0	1482.4607	855.89911	300
99	Optimized	393.6945	519.42805	0	1342.0544	774.83547	300
100	Optimized	397.25665	521.81815	0	1201.1352	693.47572	300
101	Optimized	400.68675	524.6433	0	999.9586	577.32637	300
102	Optimized	403.98485	527.9035	0	803.3437	463.8107	300
103	Optimized	407.28295	531.1637	0	605.6722	349.68501	300
104	Optimized	410.37515	534.22035	0	413.11776	238.51365	300

105	Optimized	413.2614	537.07345	0	225.78563	130.3574	300
106	Optimized	415.21035	539	0	104.29123	55.452631	0
107	Optimized	415.9691	539.75	0	24.598255	3.8959809	0

Slices of Slip Surface: 646

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	646	74.867945	517.8544	0	24.950394	3.9517542	0
2	646	76.32356	517.25145	0	105.847	56.279848	0
3	646	78.956075	516.16105	0	231.45984	133.6334	300
4	646	82.34353	514.7579	0	348.77435	201.36497	300
5	646	85.730985	513.35475	0	466.48706	269.32643	300
6	646	89.118435	511.95165	0	584.5816	337.50834	300
7	646	92.50589	510.5485	0	703.05797	405.91071	300
8	646	95.893345	509.14535	0	821.88889	474.51777	300
9	646	99.280785	507.74225	0	941.07437	543.32954	300
10	646	102.66825	506.33915	0	1060.6417	612.36176	300
11	646	106.0557	504.936	0	1180.5635	681.59868	300
12	646	109.44315	503.53285	0	1300.7854	751.00881	300
13	646	112.8306	502.12975	0	1421.3619	820.62365	300
14	646	116.21805	500.7266	0	1542.2656	890.42744	300
15	646	119.60555	499.32345	0	1663.442	960.3887	300
16	646	122.993	497.92035	0	1784.9185	1030.5232	300
17	646	126.38045	496.5172	0	1906.6677	1100.8151	300
18	646	129.7679	495.11405	0	2028.6623	1171.2487	300
19	646	133.15535	493.71095	0	2150.8752	1241.8084	300
20	646	136.5428	492.30785	0	2273.3062	1312.494	300
21	646	139.93025	490.9047	0	2395.9554	1383.3055	300
22	646	143.3177	489.50155	0	2518.741	1454.1958	300
23	646	145.17235	488.73335	0	2571.4604	1367.2697	0
24	646	147.03385	488.65885	0	2491.0925	1324.5374	0
25	646	150.4349	488.6432	0	2508.5282	1333.8081	0
26	646	153.83595	488.6276	0	2525.905	1343.0475	0
27	646	157.237	488.612	0	2543.2819	1352.287	0
28	646	160.638	488.59635	0	2560.5999	1361.4951	0

29	646	164.03905	488.5807	0	2577.8591	1370.672	0
30	646	167.4401	488.5651	0	2595.1184	1379.8489	0
31	646	170.84115	488.5495	0	2612.3188	1388.9945	0
32	646	174.2422	488.53385	0	2629.4604	1398.1089	0
33	646	177.64325	488.5182	0	2646.5726	1407.2076	0
34	646	181.0443	488.5026	0	2663.6555	1416.2907	0
35	646	184.4453	488.487	0	2680.7089	1425.3582	0
36	646	187.84635	488.47135	0	2697.7035	1434.3944	0
37	646	191.2474	488.4557	0	2714.6687	1443.415	0
38	646	194.64845	488.4401	0	2731.5751	1452.4042	0
39	646	198.0495	488.4245	0	2748.4521	1461.3779	0
40	646	201.4505	488.40885	0	2765.2997	1470.3359	0
41	646	204.85155	488.3932	0	2782.0885	1479.2627	0
42	646	208.2526	488.3776	0	2798.8479	1488.1738	0
43	646	211.65365	488.362	0	2815.5485	1497.0537	0
44	646	215.0547	488.34635	0	2832.2197	1505.9179	0
45	646	218.45575	488.3307	0	2848.8614	1514.7665	0
46	646	221.8568	488.3151	0	2865.4444	1523.5838	0
47	646	225.2578	488.2995	0	2881.998	1532.3855	0
48	646	228.65885	488.28385	0	2898.5222	1541.1716	0
49	646	232.0599	488.2682	0	2915.0169	1549.942	0
50	646	235.46095	488.2526	0	2931.4529	1558.6812	0
51	646	238.862	488.237	0	2947.8889	1567.4203	0
52	646	242.263	488.22135	0	2964.3542	1576.1751	0
53	646	245.66405	488.2057	0	2980.5256	1584.7736	0
54	646	249.0651	488.1901	0	2996.991	1593.5284	0
55	646	252.46615	488.1745	0	3013.1623	1602.1268	0
56	646	255.8672	488.15885	0	3029.3336	1610.7253	0
57	646	259.26825	488.1432	0	3045.505	1619.3237	0
58	646	262.6693	488.1276	0	3061.6763	1627.9222	0
59	646	266.0703	488.112	0	3077.8477	1636.5206	0
60	646	269.47135	488.09635	0	3094.019	1645.1191	0
61	646	272.8724	488.0807	0	3110.1904	1653.7175	0
62	646	276.27345	488.0651	0	3126.0677	1662.1597	0
63	646	279.6745	488.0495	0	3142.239	1670.7581	0
64	646	283.0755	488.03385	0	3158.1163	1679.2002	0

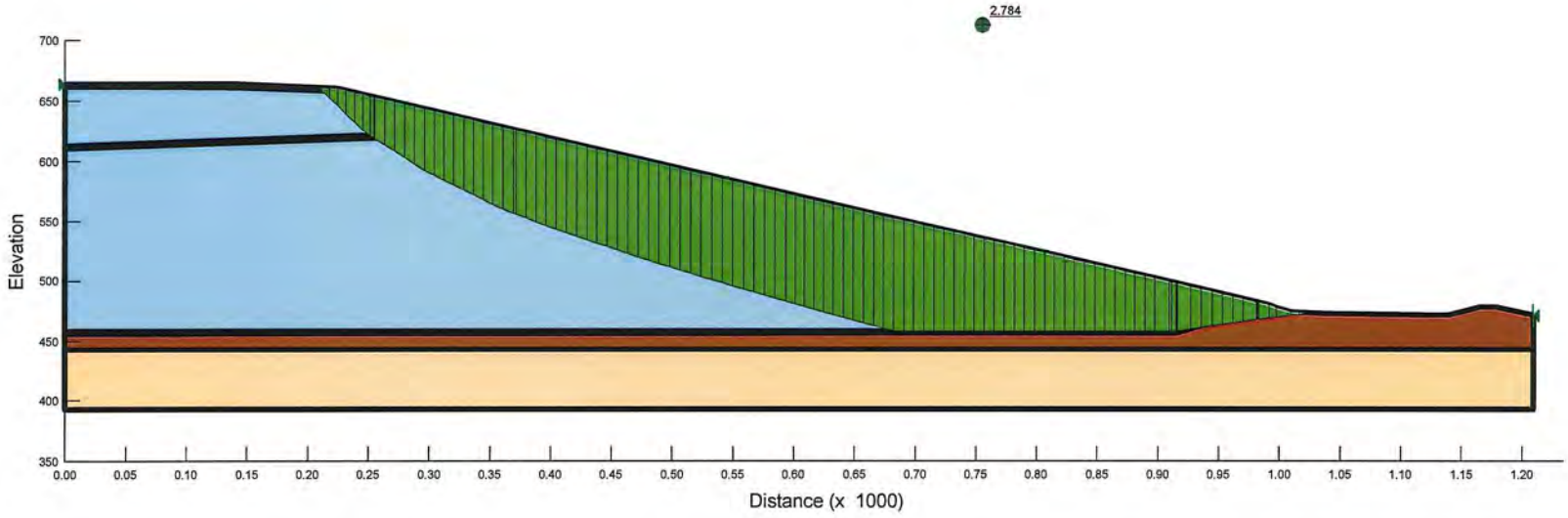
65	646	286.47655	488.0182	0	3174.2877	1687.7987	0
66	646	289.8776	488.0026	0	3190.165	1696.2408	0
67	646	293.27865	487.987	0	3206.3363	1704.8393	0
68	646	296.6797	487.97135	0	3222.2137	1713.2814	0
69	646	300.08075	487.9557	0	3238.091	1721.7235	0
70	646	303.4818	487.9401	0	3253.9683	1730.1656	0
71	646	306.8828	487.9245	0	3269.8456	1738.6078	0
72	646	310.28385	487.90885	0	3285.7229	1747.0499	0
73	646	313.6849	487.8932	0	3301.6003	1755.492	0
74	646	317.08595	487.8776	0	3317.4776	1763.9341	0
75	646	320.487	487.862	0	3333.3549	1772.3762	0
76	646	323.888	487.84635	0	3349.5262	1780.9747	0
77	646	327.28905	487.8307	0	3365.4036	1789.4168	0
78	646	330.6901	487.8151	0	3381.2809	1797.8589	0
79	646	334.09115	487.7995	0	3397.1582	1806.3011	0
80	646	337.4922	487.78385	0	3413.0355	1814.7432	0
81	646	340.89325	487.7682	0	3428.9128	1823.1853	0
82	646	344.2943	487.7526	0	3444.7902	1831.6274	0
83	646	347.6953	487.737	0	3460.6675	1840.0695	0
84	646	351.09635	487.72135	0	3476.5448	1848.5117	0
85	646	354.4974	487.7057	0	3492.4221	1856.9538	0
86	646	357.89845	487.6901	0	3508.5935	1865.5522	0
87	646	361.2995	487.6745	0	3524.4708	1873.9944	0
88	646	363.56665	488.23335	0	3203.9432	1703.5668	0
89	646	365.85635	490.52305	0	3010.597	1738.169	300
90	646	369.3024	493.9691	0	2812.3802	1623.7285	300
91	646	372.74845	497.41515	0	2613.3427	1508.8141	300
92	646	376.1945	500.8612	0	2413.4843	1393.4258	300
93	646	379.64055	504.30725	0	2212.6	1277.4452	300
94	646	383.0866	507.7533	0	2010.6487	1160.8486	300
95	646	386.53265	511.19935	0	1807.6509	1043.6477	300
96	646	389.9787	514.6454	0	1603.5246	925.79534	300
97	646	393.42475	518.09145	0	1398.2696	807.29136	300
98	646	396.8708	521.5375	0	1191.8041	688.08841	300
99	646	400.31685	524.98355	0	984.10736	568.17465	300
100	646	403.7629	528.4296	0	775.15896	447.53824	300

101	646	407.20895	531.87565	0	564.91784	326.15547	300
102	646	411.38265	536.04935	0	297.75524	171.90907	300
103	646	414.3333	539	0	104.85683	55.753367	0
104	646	415.0833	539.75	0	24.639842	3.9025676	0

FINAL WASTE SLOPE SECTIONS
WITH CORRESPONDING ANALYSIS

File Name: Section A-A' Full Height Slope-circular.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 19
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 2:33:40 PM
File Name: Section A-A' Full Height Slope-circular.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/22/2013
Last Solved Time: 2:34:00 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 3 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 664) ft
Right Coordinate: (1209.1007, 472) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	2.784	(861.935, 1616.39)	372.0721	(209.3, 660.636)	(1022.64, 473.416)
2	373	2.871	(861.935, 1616.39)	1164.889	(195.106, 661.24)	(1080.55, 472.194)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	210.36515	659.5905	0	100.90985	53.654718	0
2	Optimized	211.69705	658.2831	0	231.17489	75.113277	19
3	Optimized	215.03535	655.0062	0	331.56389	191.4285	300
4	Optimized	221.1779	648.9766	0	685.84081	395.97038	300
5	Optimized	227.77275	642.50305	0	1019.7537	588.75504	300
6	Optimized	234.8199	635.5855	0	1333.1735	769.70806	300
7	Optimized	241.86705	628.66795	0	1642.3401	948.20549	300
8	Optimized	248.2059	623.37955	0	2025.3966	1169.3633	300
9	Optimized	252.6333	620.50225	0	2257.0419	1200.0905	0
10	Optimized	254.6499	619.19175	0	2449.4729	795.88199	19
11	Optimized	259.16075	616.2602	0	2401.0913	1386.2707	300
12	Optimized	267.3735	610.92285	0	2607.5292	1505.4577	300
13	Optimized	275.58625	605.58555	0	2812.1294	1623.5836	300
14	Optimized	283.799	600.2482	0	3015.096	1740.7665	300

15	Optimized	292.01175	594.91085	0	3216.4291	1857.0062	300
16	Optimized	300.13495	590.25415	0	3530.1882	2038.1551	300
17	Optimized	308.1687	586.27805	0	3657.1429	2111.4524	300
18	Optimized	316.20245	582.30195	0	3783.5398	2184.4277	300
19	Optimized	324.2362	578.3259	0	3909.602	2257.2098	300
20	Optimized	332.26995	574.34985	0	4035.3295	2329.7986	300
21	Optimized	340.30365	570.37375	0	4160.7224	2402.1942	300
22	Optimized	348.3374	566.39765	0	4285.8921	2474.461	300
23	Optimized	356.37115	562.42155	0	4410.8388	2546.5989	300
24	Optimized	364.798	558.71265	0	4631.8399	2674.194	300
25	Optimized	370.2772	556.57455	0	4630.4828	2673.4105	300
26	Optimized	375.47675	554.5456	0	4674.2526	2698.681	300
27	Optimized	383.7374	551.32215	0	4754.4348	2744.9742	300
28	Optimized	391.99805	548.0987	0	4834.9554	2791.4628	300
29	Optimized	400.2587	544.87525	0	4915.5887	2838.0165	300
30	Optimized	408.6007	541.8038	0	5068.535	2926.3201	300
31	Optimized	417.02415	538.8844	0	5130.0045	2961.8095	300
32	Optimized	425.4476	535.965	0	5191.8104	2997.4931	300
33	Optimized	433.87105	533.04555	0	5253.9528	3033.3711	300
34	Optimized	442.2945	530.1261	0	5316.4318	3069.4433	300
35	Optimized	450.7179	527.2067	0	5379.3594	3105.7746	300
36	Optimized	459.14135	524.2873	0	5442.6236	3142.3002	300
37	Optimized	467.5648	521.3679	0	5506.3364	3179.0848	300
38	Optimized	476.1013	518.54525	0	5636.2557	3254.0937	300
39	Optimized	484.7509	515.81935	0	5686.2063	3282.9327	300
40	Optimized	493.4005	513.09345	0	5736.4877	3311.9627	300
41	Optimized	502.0501	510.36755	0	5787.2101	3341.2473	300
42	Optimized	510.6997	507.64165	0	5838.3736	3370.7866	300
43	Optimized	519.3493	504.91575	0	5890.0884	3400.6441	300
44	Optimized	527.9989	502.18985	0	5942.1341	3430.6927	300
45	Optimized	536.6712	499.55455	0	6048.6156	3492.1699	300
46	Optimized	545.36625	497.0098	0	6089.4556	3515.7488	300
47	Optimized	554.0613	494.46505	0	6130.737	3539.5827	300
48	Optimized	562.7563	491.9203	0	6172.3496	3563.6077	300
49	Optimized	571.4513	489.37555	0	6214.4037	3587.8877	300
50	Optimized	580.14635	486.8308	0	6256.8993	3612.4225	300

51	Optimized	588.8414	484.28605	0	6299.7261	3637.1485	300
52	Optimized	597.08595	481.9031	0	6361.0032	3672.5269	300
53	Optimized	604.88	479.6819	0	6396.046	3692.7589	300
54	Optimized	612.67405	477.46075	0	6431.3355	3713.1333	300
55	Optimized	620.4681	475.2396	0	6466.8719	3733.6502	300
56	Optimized	628.26215	473.0184	0	6502.7784	3754.3808	300
57	Optimized	636.31855	470.7762	0	6575.3118	3796.2581	300
58	Optimized	644.6372	468.513	0	6606.7466	3814.4069	300
59	Optimized	652.95585	466.24975	0	6638.2973	3832.6227	300
60	Optimized	661.2745	463.9865	0	6670.196	3851.0395	300
61	Optimized	669.59315	461.7233	0	6702.2107	3869.5232	300
62	Optimized	677.9548	459.4484	0	6734.2487	3888.0203	300
63	Optimized	686.2959	458.30645	0	7559.6965	4019.5619	0
64	Optimized	694.5735	458.3092	0	7408.6862	3939.2683	0
65	Optimized	702.85105	458.31195	0	7256.5886	3858.3966	0
66	Optimized	711.1286	458.3147	0	7103.5246	3777.011	0
67	Optimized	719.4062	458.31745	0	6949.4941	3695.1115	0
68	Optimized	727.6838	458.3202	0	6794.6179	3612.7624	0
69	Optimized	735.9614	458.32295	0	6639.0169	3530.0279	0
70	Optimized	744.23895	458.3257	0	6482.5702	3446.8437	0
71	Optimized	752.5165	458.32845	0	6325.3987	3363.2741	0
72	Optimized	760.7941	458.3312	0	6167.6231	3279.3834	0
73	Optimized	769.0717	458.33395	0	6009.3643	3195.2357	0
74	Optimized	777.3493	458.3367	0	5850.5015	3110.7668	0
75	Optimized	785.6269	458.33945	0	5691.2762	3026.1053	0
76	Optimized	793.90445	458.34215	0	5531.6885	2941.251	0
77	Optimized	802.182	458.3449	0	5371.7384	2856.204	0
78	Optimized	810.4596	458.34765	0	5211.6675	2771.0928	0
79	Optimized	818.7372	458.3504	0	5051.355	2685.8531	0
80	Optimized	827.0148	458.35315	0	4890.8008	2600.4849	0
81	Optimized	835.29235	458.3559	0	4730.3675	2515.181	0
82	Optimized	843.5699	458.35865	0	4569.8133	2429.8128	0
83	Optimized	851.8475	458.3614	0	4409.38	2344.5089	0
84	Optimized	860.1251	458.36415	0	4249.0675	2259.2692	0
85	Optimized	868.4027	458.3669	0	4088.8757	2174.0938	0
86	Optimized	876.68025	458.36965	0	3928.8048	2088.9826	0

87	Optimized	884.9578	458.3724	0	3769.0963	2004.0641	0
88	Optimized	893.2354	458.37515	0	3609.7502	1919.3382	0
89	Optimized	903.44145	458.2827	0	3408.633	1812.4023	0
90	Optimized	910.41095	458.1967	0	3311.9856	1761.014	0
91	Optimized	913.04	458.21185	0	3255.1248	1730.7806	0
92	Optimized	915.37225	458.3096	0	3347.6621	1779.9835	0
93	Optimized	921.50705	459.22545	0	3190.2487	1696.2853	0
94	Optimized	931.3481	460.6946	0	2951.9643	1569.5873	0
95	Optimized	939.9715	461.982	0	2746.3201	1460.2443	0
96	Optimized	948.5949	463.26935	0	2542.1668	1351.6941	0
97	Optimized	957.21825	464.5567	0	2339.734	1244.0586	0
98	Optimized	965.8416	465.8441	0	2139.0215	1137.3379	0
99	Optimized	975.60345	467.2072	0	1917.6251	1019.6193	0
100	Optimized	981.35995	467.96705	0	1792.5146	953.09691	0
101	Optimized	982.0999	468.0647	0	1761.3596	936.53152	0
102	Optimized	986.79355	468.68425	0	1543.4018	820.64131	0
103	Optimized	994.0953	469.6481	0	1167.4552	620.74693	0
104	Optimized	1003.2205	470.85255	0	640.02223	340.30586	0
105	Optimized	1012.638	472.0956	0	217.63912	115.72077	0
106	Optimized	1019.306	472.97575	0	72.321368	38.453954	0

Slices of Slip Surface: 373

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	373	196.63655	660.17435	0	106.1627	56.44771	0
2	373	198.5542	658.84125	0	241.03362	78.316572	19
3	373	203.15905	655.6809	0	369.97063	213.60264	300
4	373	211.5951	649.9501	0	723.0539	417.45536	300
5	373	220.03115	644.3263	0	1067.5171	616.33128	300
6	373	228.17255	638.9969	0	1342.9269	775.33921	300
7	373	236.0193	633.95325	0	1550.4166	895.13344	300
8	373	243.86605	628.99775	0	1751.5988	1011.286	300
9	373	251.7128	624.12905	0	1946.8434	1124.0106	300
10	373	257.35845	620.6705	0	2194.5154	1166.8445	0
11	373	259.5148	619.3625	0	2374.2277	771.43336	19

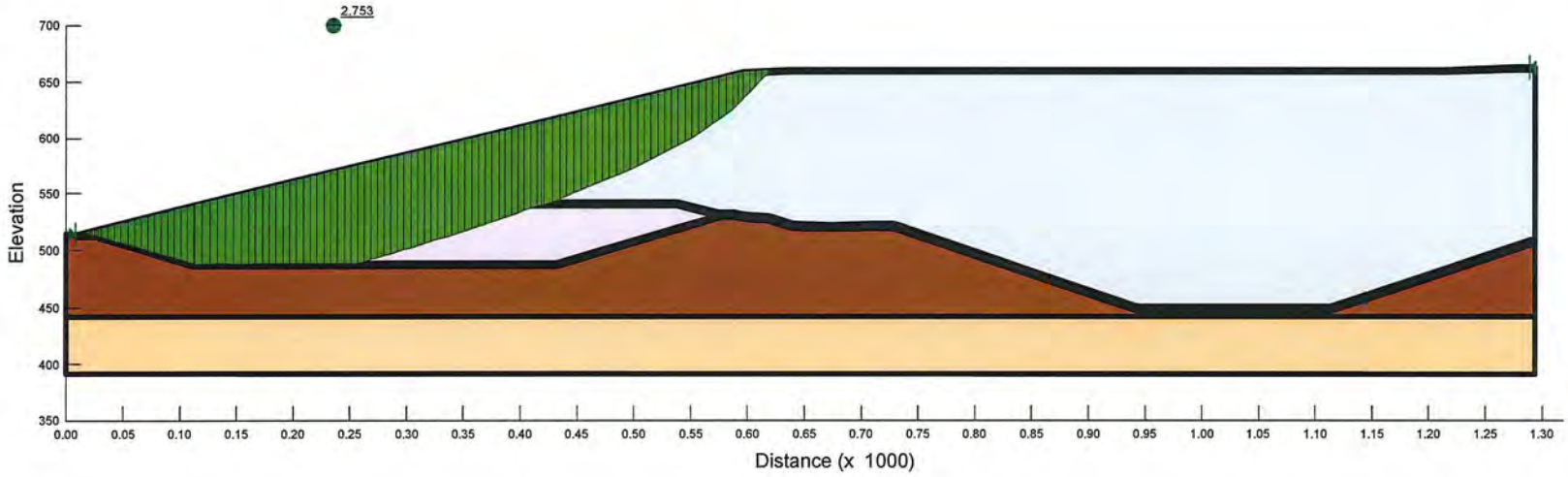
12	373	264.52755	616.36495	0	2351.6497	1357.7256	300
13	373	273.6849	610.95085	0	2561.8453	1479.0821	300
14	373	282.8423	605.64865	0	2764.9547	1596.3473	300
15	373	291.99965	600.4567	0	2961.3474	1709.7347	300
16	373	301.157	595.3733	0	3151.0375	1819.2524	300
17	373	310.3144	590.3968	0	3334.5196	1925.1858	300
18	373	319.47175	585.52565	0	3511.9305	2027.614	300
19	373	328.6291	580.7584	0	3683.5064	2126.6734	300
20	373	337.7865	576.0936	0	3849.4058	2222.4555	300
21	373	346.94385	571.52985	0	4009.8891	2315.1105	300
22	373	356.1012	567.06595	0	4164.9329	2404.6251	300
23	373	364.94395	562.8473	0	4264.3353	2462.0152	300
24	373	370.2772	560.338	0	4297.9627	2481.4299	300
25	373	375.7911	557.799	0	4376.932	2527.0229	300
26	373	384.6805	553.7616	0	4511.9444	2604.9723	300
27	373	393.5699	549.8136	0	4642.4198	2680.3023	300
28	373	402.4593	545.9539	0	4768.5876	2753.1453	300
29	373	411.3487	542.18165	0	4890.3743	2823.4589	300
30	373	420.23805	538.49595	0	5008.0193	2891.3813	300
31	373	429.1274	534.89585	0	5121.4577	2956.875	300
32	373	438.0168	531.38055	0	5230.7301	3019.9634	300
33	373	446.9062	527.9492	0	5335.8812	3080.6725	300
34	373	455.7956	524.601	0	5437.0644	3139.0906	300
35	373	464.685	521.3352	0	5534.1212	3195.1263	300
36	373	473.5744	518.15105	0	5627.2105	3248.8715	300
37	373	482.4638	515.04785	0	5716.284	3300.2981	300
38	373	491.3532	512.02495	0	5801.2957	3349.3796	300
39	373	500.2426	509.08165	0	5882.3077	3396.1519	300
40	373	509.132	506.2173	0	5959.2762	3440.5897	300
41	373	518.02135	503.43135	0	6032.0544	3482.6082	300
42	373	526.9107	500.7232	0	6100.7104	3522.2468	300
43	373	535.8001	498.09225	0	6165.2059	3559.4833	300
44	373	544.6895	495.538	0	6225.3987	3594.2356	300
45	373	553.5789	493.0599	0	6281.2526	3626.4829	300
46	373	562.4683	490.65745	0	6332.8446	3656.2695	300
47	373	571.3577	488.33015	0	6379.8161	3683.3885	300

48	373	580.2471	486.07755	0	6422.3551	3707.9485	300
49	373	589.1365	483.8992	0	6460.1046	3729.7431	300
50	373	598.0259	481.7947	0	6493.2561	3748.8831	300
51	373	606.9153	479.76365	0	6521.4545	3765.1635	300
52	373	615.8047	477.80555	0	6544.6736	3778.5691	300
53	373	624.69405	475.9201	0	6562.89	3789.0863	300
54	373	633.5834	474.107	0	6575.9711	3796.6387	300
55	373	642.4728	472.36585	0	6583.7852	3801.1502	300
56	373	651.3622	470.69625	0	6586.091	3802.4814	300
57	373	660.2516	469.098	0	6582.8696	3800.6216	300
58	373	669.141	467.5708	0	6574.1039	3795.5606	300
59	373	678.0304	466.11425	0	6559.4443	3787.0969	300
60	373	686.9198	464.72815	0	6538.9876	3775.2863	300
61	373	695.8092	463.4123	0	6512.4993	3759.9932	300
62	373	704.6986	462.1664	0	6479.8558	3741.1465	300
63	373	713.588	460.99025	0	6441.0461	3718.7397	300
64	373	722.47735	459.8836	0	6395.8405	3692.6402	300
65	373	731.3667	458.84625	0	6344.2318	3662.8439	300
66	373	740.78445	457.82485	0	6277.0929	3337.5895	0
67	373	750.73055	456.8279	0	6248.6683	3322.4759	0
68	373	760.15765	455.96035	0	6211.0565	3302.4773	0
69	373	769.06575	455.21345	0	6165.3705	3278.1856	0
70	373	777.97385	454.53535	0	6109.9646	3248.7258	0
71	373	786.88195	453.9259	0	6044.611	3213.9767	0
72	373	795.79	453.385	0	5969.4179	3173.9958	0
73	373	804.69805	452.9126	0	5884.1634	3128.6652	0
74	373	813.60615	452.50855	0	5788.851	3077.9867	0
75	373	822.51425	452.17275	0	5683.489	3021.9647	0
76	373	831.42235	451.9052	0	5567.8622	2960.4849	0
77	373	840.3304	451.7059	0	5441.9866	2893.5556	0
78	373	849.23845	451.57475	0	5305.9899	2821.2449	0
79	373	858.14655	451.5117	0	5159.6693	2743.4448	0
80	373	867.05465	451.51675	0	5003.2734	2660.2877	0
81	373	875.96275	451.58995	0	4836.6052	2571.6686	0
82	373	884.87085	451.7313	0	4659.6958	2477.6042	0
83	373	893.7789	451.9408	0	4472.8041	2378.2321	0

84	373	902.68695	452.21855	0	4275.9676	2273.5723	0
85	373	911.59505	452.56455	0	4069.1156	2163.5872	0
86	373	920.6923	452.9891	0	3920.009	2084.3057	0
87	373	929.97865	453.4953	0	3828.4327	2035.6138	0
88	373	939.265	454.0759	0	3726.3803	1981.3515	0
89	373	948.55135	454.731	0	3613.8862	1921.5374	0
90	373	957.8377	455.46075	0	3490.882	1856.1349	0
91	373	967.12405	456.2653	0	3357.7312	1785.3373	0
92	373	976.4104	457.14485	0	3214.3724	1709.1121	0
93	373	981.35995	457.63495	0	3128.3612	1663.3792	0
94	373	982.0999	457.71145	0	3099.9559	1648.2758	0
95	373	986.79355	458.2157	0	2896.4458	1540.0676	0
96	373	994.0953	459.0223	0	2537.9989	1349.478	0
97	373	1003.2205	460.11295	0	2017.7545	1072.8591	0
98	373	1014.174	461.49825	0	1558.9978	828.93385	0
99	373	1023.914	462.82405	0	1333.8348	709.21253	0
100	373	1033.654	464.2337	0	1098.7465	584.2139	0
101	373	1042.726	465.6197	0	887.95104	472.13195	0
102	373	1051.13	466.9716	0	702.59233	373.57497	0
103	373	1059.5345	468.3866	0	510.18093	271.26801	0
104	373	1067.939	469.8649	0	310.83443	165.2736	0
105	373	1076.3435	471.4068	0	104.67987	55.659275	0

File Name: Section B-B' Full Height -Waste.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 58
Last Edited By: Sonawane, Richa
Date: 10/25/2013
Time: 2:38:40 PM
File Name: Section B-B' Full Height -Waste.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\
Last Solved Date: 10/25/2013
Last Solved Time: 2:39:02 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 2 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (8.4541621, 513.99731) ft
Right Coordinate: (1289, 662.82) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	2.753	(189.196, 1094.02)	283.1496	(620.107, 659.977)	(16.6672, 515.992)
2	94	2.839	(189.196, 1094.02)	607.532	(613.987, 659.685)	(8.45416, 513.997)

Slices of Slip Surface: Optimized

	Slip	X (ft)	Y (ft)	PWP	Base Normal	Frictional	Cohesive

	Surface			(psf)	Stress (psf)	Strength (psf)	Strength (psf)
1	Optimized	18.67797	515.4578	0	130.64646	69.465956	0
2	Optimized	21.568935	514.59995	0	277.87644	44.011304	0
3	Optimized	22.46358	514.3459	0	316.92591	168.5125	0
4	Optimized	23.8287	513.95825	0	409.65641	217.81818	0
5	Optimized	25.2153	513.5645	0	504.53651	268.26682	0
6	Optimized	26.4499	513.2139	0	589.36187	313.36927	0
7	Optimized	29.1993	512.43315	0	749.15742	398.33407	0
8	Optimized	33.68418	511.1596	0	948.85923	504.5174	0
9	Optimized	39.552535	509.4932	0	1195.2702	635.53644	0
10	Optimized	45.42089	507.82675	0	1444.8449	768.23766	0
11	Optimized	51.28925	506.1603	0	1697.5997	902.62978	0
12	Optimized	57.15761	504.4939	0	1953.4855	1038.6867	0
13	Optimized	63.025965	502.82745	0	2212.6498	1176.4868	0
14	Optimized	68.89432	501.161	0	2474.7647	1315.8557	0
15	Optimized	74.71965	499.5042	0	2739.1947	1456.4557	0
16	Optimized	80.50195	497.85695	0	3004.3156	1597.4229	0
17	Optimized	86.28425	496.2097	0	3272.4304	1739.9821	0
18	Optimized	92.06655	494.5625	0	3543.3726	1884.0446	0
19	Optimized	97.84885	492.9153	0	3816.9761	2029.5222	0
20	Optimized	103.63115	491.26805	0	4093.2407	2176.4147	0
21	Optimized	109.41345	489.6208	0	4372.1666	2324.7222	0
22	Optimized	112.6249	488.70595	0	4533.195	2410.3425	0
23	Optimized	116.35485	488.6455	0	4171.205	2217.8691	0
24	Optimized	123.1742	488.70715	0	4301.5644	2287.1823	0
25	Optimized	129.99355	488.7688	0	4431.9237	2356.4956	0
26	Optimized	136.91645	488.78885	0	4590.1511	2440.6267	0
27	Optimized	143.943	488.7673	0	4736.4531	2518.4168	0
28	Optimized	150.96955	488.74575	0	4882.6126	2596.1312	0
29	Optimized	157.601	488.7477	0	5003.3657	2660.3367	0
30	Optimized	163.83735	488.7731	0	5126.193	2725.6451	0
31	Optimized	169.96115	488.78585	0	5256.9039	2795.1454	0
32	Optimized	175.9725	488.786	0	5378.1749	2859.6263	0
33	Optimized	181.98385	488.78615	0	5499.1131	2923.9303	0
34	Optimized	187.99515	488.78625	0	5619.5523	2987.9689	0

35	Optimized	194.0065	488.7864	0	5739.4924	3051.7422	0
36	Optimized	200.01785	488.78655	0	5858.9335	3115.2502	0
37	Optimized	206.02915	488.78665	0	5977.7091	3178.4043	0
38	Optimized	212.0405	488.7868	0	6095.9857	3241.2931	0
39	Optimized	218.05185	488.78695	0	6213.4305	3303.7396	0
40	Optimized	224.06315	488.78705	0	6330.21	3365.8323	0
41	Optimized	230.0745	488.7872	0	6446.324	3427.5713	0
42	Optimized	236.08585	488.78735	0	6561.4399	3488.7795	0
43	Optimized	242.09715	488.78745	0	6675.724	3549.5454	0
44	Optimized	248.1085	488.7876	0	6789.01	3609.7807	0
45	Optimized	254.11985	488.78775	0	6901.4643	3669.5737	0
46	Optimized	257.14675	488.7939	0	6110.8743	3249.2095	0
47	Optimized	260.07005	489.6323	0	6095.511	3519.2449	300
48	Optimized	265.8741	491.29695	0	6073.8152	3506.7189	300
49	Optimized	271.67815	492.9616	0	6052.4507	3494.384	300
50	Optimized	277.4822	494.62625	0	6031.2518	3482.1449	300
51	Optimized	283.28625	496.2909	0	6010.0529	3469.9057	300
52	Optimized	289.0903	497.95555	0	5989.1853	3457.8577	300
53	Optimized	294.89435	499.6202	0	5968.6488	3446.001	300
54	Optimized	300.7555	501.35075	0	5898.4492	3405.4712	300
55	Optimized	306.67365	503.1473	0	5871.6094	3389.9753	300
56	Optimized	312.5918	504.94385	0	5844.9313	3374.5727	300
57	Optimized	318.51	506.7404	0	5818.5766	3359.3567	300
58	Optimized	324.4282	508.53695	0	5792.7069	3344.4209	300
59	Optimized	330.34635	510.3335	0	5766.9989	3329.5784	300
60	Optimized	336.2645	512.13005	0	5741.6143	3314.9225	300
61	Optimized	342.21185	514.0044	0	5651.6244	3262.9668	300
62	Optimized	348.1883	515.9566	0	5618.5414	3243.8664	300
63	Optimized	354.16475	517.9088	0	5585.7765	3224.9496	300
64	Optimized	360.1412	519.861	0	5553.6478	3206.4001	300
65	Optimized	366.11765	521.8132	0	5521.8372	3188.0342	300
66	Optimized	372.0941	523.7654	0	5490.3448	3169.852	300
67	Optimized	378.07055	525.7176	0	5459.3295	3151.9453	300
68	Optimized	383.8461	527.67315	0	5366.0796	3098.1075	300
69	Optimized	389.42075	529.632	0	5330.2008	3077.3929	300
70	Optimized	394.9954	531.59085	0	5294.8297	3056.9714	300

71	Optimized	400.57005	533.5497	0	5259.7972	3036.7453	300
72	Optimized	406.1447	535.50855	0	5225.103	3016.7146	300
73	Optimized	411.72015	537.4677	0	5191.5713	2997.3551	300
74	Optimized	414.6093	538.4737	0	5384.9228	3108.9866	300
75	Optimized	416.63	539	0	5363.746	2851.9543	0
76	Optimized	419.5096	539.75	0	5345.8522	846.69981	0
77	Optimized	424.30895	541	0	5277.4209	2806.0545	0
78	Optimized	428.26935	542.0315	0	5224.5091	3016.3717	300
79	Optimized	431.5021	543.3872	0	4836.8654	2792.5655	300
80	Optimized	437.7257	546.0356	0	4766.0459	2751.6779	300
81	Optimized	443.94935	548.684	0	4695.67	2711.0463	300
82	Optimized	450.173	551.33235	0	4625.8855	2670.7562	300
83	Optimized	456.3966	553.9807	0	4556.5445	2630.7222	300
84	Optimized	462.6202	556.6291	0	4487.4993	2590.8589	300
85	Optimized	468.8438	559.2775	0	4418.8975	2551.2517	300
86	Optimized	475.0674	561.9259	0	4350.7393	2511.9005	300
87	Optimized	481.29105	564.5743	0	4282.729	2472.6347	300
88	Optimized	487.5147	567.22265	0	4215.1622	2433.625	300
89	Optimized	493.7383	569.871	0	4147.7433	2394.7007	300
90	Optimized	499.9619	572.5194	0	4080.62	2355.9471	300
91	Optimized	506.05385	575.45635	0	3837.6155	2215.6483	300
92	Optimized	512.01415	578.6819	0	3736.5402	2157.2925	300
93	Optimized	517.97445	581.90745	0	3635.3173	2098.8514	300
94	Optimized	523.93475	585.133	0	3533.9469	2040.3252	300
95	Optimized	529.8951	588.35855	0	3432.2814	1981.6286	300
96	Optimized	535.85545	591.58405	0	3330.4683	1922.8468	300
97	Optimized	541.81575	594.8096	0	3228.3601	1863.8946	300
98	Optimized	547.77605	598.03515	0	3125.8092	1804.6868	300
99	Optimized	553.7536	601.79995	0	2839.2018	1639.2139	300
100	Optimized	559.74835	606.1041	0	2679.1724	1546.8209	300
101	Optimized	565.7431	610.40825	0	2517.7879	1453.6455	300
102	Optimized	571.7379	614.71235	0	2355.0483	1359.6878	300
103	Optimized	577.73265	619.0165	0	2190.6828	1264.7913	300
104	Optimized	583.7274	623.32065	0	2024.5556	1168.8777	300
105	Optimized	589.00175	627.8262	0	1687.4823	974.26836	300
106	Optimized	593.5557	632.53325	0	1485.1432	857.44784	300

107	Optimized	595.9774	635.03635	0	1373.8037	793.16592	300
108	Optimized	598.83015	637.985	0	1250.4882	721.96968	300
109	Optimized	604.20985	643.54555	0	939.39119	542.35775	300
110	Optimized	609.5532	649.0685	0	625.53207	361.15111	300
111	Optimized	614.89655	654.59145	0	306.75405	177.10454	300
112	Optimized	617.82205	657.6153	0	229.21098	74.475161	19
113	Optimized	619.0913	658.9272	0	99.940561	53.139339	0

Slices of Slip Surface: 94

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	94	9.231781	513.75615	0	53.254954	28.316161	0
2	94	13.59457	512.4325	0	358.756	190.75395	0
3	94	17.77102	511.1761	0	652.88659	347.14596	0
4	94	19.37605	510.70705	0	759.39752	403.77882	0
5	94	21.4339	510.11195	0	864.00325	459.39868	0
6	94	23.61325	509.4904	0	981.5496	521.89918	0
7	94	24.96395	509.1083	0	1074.5966	571.37315	0
8	94	25.2153	509.03775	0	1091.9087	580.57815	0
9	94	26.4499	508.6944	0	1176.4451	625.52693	0
10	94	29.1993	507.93775	0	1334.2296	709.42245	0
11	94	33.822275	506.70165	0	1530.4458	813.75245	0
12	94	39.966825	505.1104	0	1767.6981	939.90176	0
13	94	46.111375	503.58735	0	1997.184	1061.9216	0
14	94	52.25592	502.132	0	2218.5377	1179.6174	0
15	94	58.400465	500.7439	0	2431.6202	1292.9154	0
16	94	64.545015	499.42255	0	2636.2996	1401.7454	0
17	94	70.383965	498.22675	0	2822.9633	1500.9962	0
18	94	75.917315	497.14995	0	2992.1243	1590.9407	0
19	94	81.45066	496.1263	0	3154.1264	1677.0788	0
20	94	86.984005	495.1555	0	3308.7123	1759.2735	0
21	94	92.517355	494.23735	0	3455.628	1837.39	0
22	94	98.210665	493.3481	0	3670.769	2119.3195	300
23	94	104.0639	492.4906	0	3857.5175	2227.1388	300
24	94	109.91715	491.6912	0	4038.6346	2331.7068	300

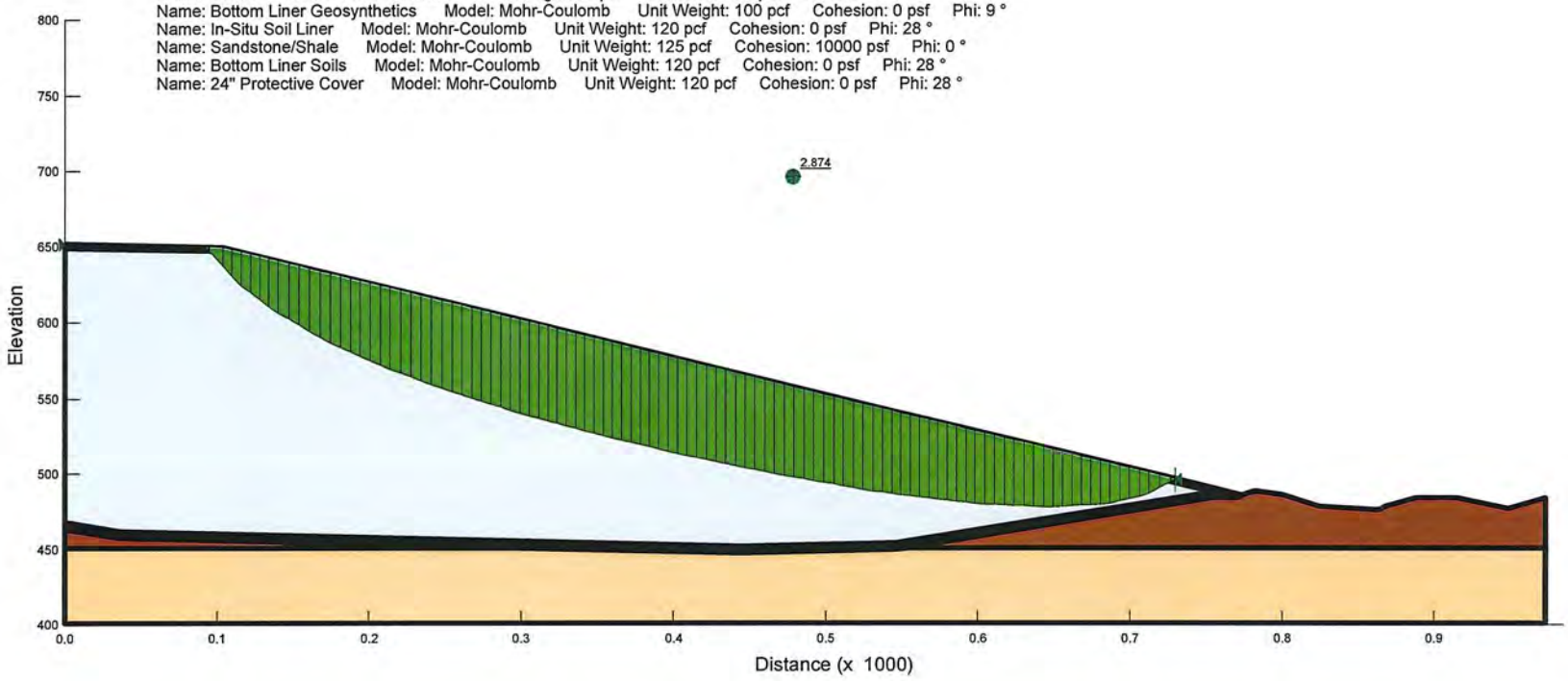
25	94	115.7704	490.9497	0	4213.8771	2432.8831	300
26	94	121.62365	490.26585	0	4383.0078	2530.5307	300
27	94	127.4769	489.6394	0	4546.1298	2624.7092	300
28	94	133.3301	489.07025	0	4703.0095	2715.2838	300
29	94	139.3708	488.54375	0	4820.7987	2563.2641	0
30	94	145.59895	488.06345	0	4997.9029	2657.4321	0
31	94	151.82705	487.6475	0	5164.4769	2746.0011	0
32	94	158.05515	487.29575	0	5320.1264	2828.7614	0
33	94	164.28325	487.0081	0	5465.1077	2905.8493	0
34	94	170.5114	486.7845	0	5599.362	2977.2336	0
35	94	176.73955	486.6248	0	5722.9964	3042.9712	0
36	94	182.96765	486.529	0	5835.8047	3102.9524	0
37	94	189.19575	486.4971	0	5937.9074	3157.2414	0
38	94	195.42385	486.529	0	6029.5929	3205.9914	0
39	94	201.652	486.6248	0	6110.6724	3249.1022	0
40	94	207.88015	486.7845	0	6181.4453	3286.7328	0
41	94	214.10825	487.0081	0	6242.0559	3318.96	0
42	94	220.33635	487.29575	0	6292.6554	3345.8642	0
43	94	226.56445	487.6475	0	6333.239	3367.4429	0
44	94	232.7926	488.06345	0	6364.1266	3383.8661	0
45	94	239.02075	488.54375	0	6385.3259	3395.138	0
46	94	245.1133	489.0753	0	6447.0371	3722.1986	300
47	94	251.07035	489.65555	0	6477.9271	3740.033	300
48	94	257.0274	490.29515	0	6503.2676	3754.6633	300
49	94	262.98445	490.99425	0	6522.8965	3765.996	300
50	94	268.9415	491.7531	0	6537.155	3774.2282	300
51	94	274.8985	492.5719	0	6546.2156	3779.4594	300
52	94	280.85555	493.4509	0	6549.9252	3781.6011	300
53	94	286.8126	494.3904	0	6548.7923	3780.947	300
54	94	292.76965	495.39065	0	6542.8301	3777.5047	300
55	94	298.7267	496.45195	0	6532.2223	3771.3803	300
56	94	304.68375	497.5746	0	6516.9841	3762.5825	300
57	94	310.6408	498.759	0	6497.4636	3751.3124	300
58	94	316.59785	500.0055	0	6473.6812	3737.5816	300
59	94	322.5549	501.31445	0	6445.6589	3721.4029	300
60	94	328.5119	502.68635	0	6413.7474	3702.9788	300

61	94	334.46895	504.1216	0	6378.1321	3682.4163	300
62	94	340.426	505.62065	0	6338.6745	3659.6354	300
63	94	346.38305	507.184	0	6295.5648	3634.746	300
64	94	352.3401	508.81215	0	6248.9924	3607.8574	300
65	94	358.29715	510.5057	0	6199.1456	3579.0784	300
66	94	364.2542	512.26515	0	6145.8933	3548.3332	300
67	94	370.2112	514.0911	0	6089.5869	3515.8246	300
68	94	376.16825	515.98425	0	6030.0984	3481.4789	300
69	94	382.1253	517.9452	0	5967.4594	3445.3143	300
70	94	388.08235	519.97465	0	5902.0244	3407.5354	300
71	94	394.0394	522.07335	0	5833.6678	3368.0697	300
72	94	399.99645	524.2421	0	5762.427	3326.9388	300
73	94	405.9535	526.48165	0	5688.3414	3284.1654	300
74	94	412.20875	528.9123	0	5608.2651	3237.9334	300
75	94	418.7622	531.54275	0	5521.8349	3188.0329	300
76	94	425.31565	534.2623	0	5432.2924	3136.3355	300
77	94	431.8691	537.07225	0	5339.2758	3082.6323	300
78	94	436.269	539	0	5290.9623	2813.2545	0
79	94	437.94925	539.75	0	5380.8207	852.23828	0
80	94	440.7051	541	0	5149.1901	2737.8729	0
81	94	445.9625	543.42635	0	4980.13	2875.2794	300
82	94	452.07965	546.32075	0	4871.2723	2812.4304	300
83	94	458.1968	549.2992	0	4759.0354	2747.6303	300
84	94	464.31395	552.3631	0	4643.3593	2680.8447	300
85	94	470.4311	555.51395	0	4524.0456	2611.959	300
86	94	476.54825	558.7533	0	4401.051	2540.948	300
87	94	482.6654	562.0827	0	4274.3411	2467.792	300
88	94	488.78255	565.5038	0	4143.6028	2392.3102	300
89	94	494.8997	569.0185	0	4008.8243	2314.4958	300
90	94	501.01685	572.6287	0	3869.7208	2234.1843	300
91	94	507.134	576.33635	0	3726.1663	2151.3031	300
92	94	513.25115	580.14355	0	3578.0486	2065.7873	300
93	94	519.3683	584.05255	0	3424.9964	1977.4226	300
94	94	525.48545	588.0657	0	3266.8011	1886.0885	300
95	94	531.6026	592.1855	0	3103.1393	1791.5983	300
96	94	537.71975	596.4146	0	2933.8518	1693.8601	300

97	94	543.8369	600.75585	0	2758.537	1592.6421	300
98	94	549.95405	605.2122	0	2576.9626	1487.8101	300
99	94	556.0712	609.7868	0	2388.5374	1379.0227	300
100	94	562.18835	614.48315	0	2193.1092	1266.1922	300
101	94	568.3055	619.30475	0	1990.0524	1148.9573	300
102	94	574.42265	624.25545	0	1779.0562	1027.1386	300
103	94	580.5398	629.3395	0	1559.6155	900.44443	300
104	94	586.65695	634.56125	0	1331.1704	768.55158	300
105	94	592.7741	639.9254	0	1093.0712	631.08498	300
106	94	595.9774	642.77415	0	962.80889	555.87797	300
107	94	599.9295	646.39825	0	790.27247	456.26402	300
108	94	607.50795	653.47255	0	370.56445	213.94549	300
109	94	611.5512	657.31645	0	232.13718	75.425943	19
110	94	612.9051	658.6324	0	101.40561	53.918317	0

File Name: Section C-C'-Waste.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis (2)

File Information

Created By: Bhatnagar, Richa
Revision Number: 503
Last Edited By: Sonawane, Richa
Date: 10/24/2013
Time: 2:51:41 PM
File Name: Section C-C'-Waste.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section C-C'\
Last Solved Date: 10/24/2013
Last Solved Time: 2:52:04 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis (2)

Description: Modelfill Slope Analysis
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 5 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °

Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 652) ft
Right Coordinate: (730.08996, 496.36676) ft

Seismic Loads

Horz Seismic Load: 0

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	2.874	(601.148, 1348.13)	292.3222	(92.6106, 650.215)	(730.09, 496.367)
2	193	2.908	(601.148, 1348.13)	861.466	(96.2286, 650.145)	(730.09, 496.367)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal	Frictional Strength (psf)	Cohesive Strength

					Stress (psf)		(psf)
1	Optimized	93.537625	649.1967	0	99.55461	52.934125	0
2	Optimized	94.69646	647.92415	0	228.45653	74.230028	19
3	Optimized	99.339125	642.82575	0	431.98061	249.40412	300
4	Optimized	106.7667	634.66915	0	872.11336	503.51489	300
5	Optimized	112.80005	628.0436	0	1171.299	676.24981	300
6	Optimized	118.8773	622.42195	0	1534.8991	886.17441	300
7	Optimized	124.9985	617.80425	0	1722.0501	994.22609	300
8	Optimized	131.11965	613.1865	0	1907.1144	1101.073	300
9	Optimized	137.2408	608.56875	0	2089.9616	1206.6399	300
10	Optimized	143.74085	604.3287	0	2363.5208	1364.5794	300
11	Optimized	150.61975	600.4663	0	2494.0811	1439.9584	300
12	Optimized	157.49865	596.60385	0	2623.6272	1514.7519	300
13	Optimized	164.37755	592.7414	0	2752.4129	1589.1063	300
14	Optimized	171.25645	588.879	0	2880.438	1663.0217	300
15	Optimized	177.96085	585.5086	0	3094.4984	1786.6095	300
16	Optimized	184.4908	582.6302	0	3171.5701	1831.1069	300
17	Optimized	191.0208	579.75175	0	3248.3616	1875.4424	300
18	Optimized	197.55075	576.8733	0	3325.153	1919.778	300
19	Optimized	204.08065	573.9949	0	3401.8043	1964.0326	300
20	Optimized	210.6106	571.1165	0	3478.5957	2008.3682	300
21	Optimized	217.27885	568.4352	0	3638.058	2100.4337	300
22	Optimized	224.0853	565.95105	0	3688.8472	2129.7569	300
23	Optimized	230.89175	563.4669	0	3739.7745	2159.1598	300
24	Optimized	237.69825	560.9827	0	3790.9778	2188.7221	300
25	Optimized	244.5047	558.49855	0	3842.3192	2218.364	300
26	Optimized	251.31115	556.0144	0	3894.0745	2248.245	300
27	Optimized	257.9033	553.75495	0	4008.0795	2314.0658	300
28	Optimized	264.2811	551.7203	0	4039.7474	2332.3492	300
29	Optimized	270.6589	549.68565	0	4071.5647	2350.7189	300
30	Optimized	277.03665	547.65095	0	4103.8301	2369.3474	300
31	Optimized	283.4144	545.61625	0	4136.2448	2388.0621	300
32	Optimized	289.7922	543.5816	0	4168.9584	2406.9492	300
33	Optimized	296.17	541.54695	0	4201.9706	2426.0089	300
34	Optimized	302.38805	539.6813	0	4299.6967	2482.431	300
35	Optimized	308.44635	537.98465	0	4316.8631	2492.342	300

36	Optimized	314.50465	536.288	0	4334.3473	2502.4366	300
37	Optimized	320.5629	534.5914	0	4352.1495	2512.7147	300
38	Optimized	326.62115	532.8948	0	4369.9516	2522.9927	300
39	Optimized	332.67945	531.19815	0	4388.0717	2533.4544	300
40	Optimized	338.73775	529.5015	0	4406.3507	2544.0077	300
41	Optimized	344.79605	527.8049	0	4424.9476	2554.7447	300
42	Optimized	350.8625	526.20695	0	4506.8407	2602.0257	300
43	Optimized	356.93715	524.70765	0	4512.4344	2605.2552	300
44	Optimized	363.0118	523.20835	0	4518.1881	2608.5771	300
45	Optimized	369.08645	521.70905	0	4524.1015	2611.9912	300
46	Optimized	375.1611	520.20975	0	4530.1748	2615.4976	300
47	Optimized	381.23575	518.71045	0	4536.248	2619.004	300
48	Optimized	387.3104	517.21115	0	4542.4811	2622.6027	300
49	Optimized	393.38505	515.71185	0	4548.7142	2626.2014	300
50	Optimized	399.4597	514.21255	0	4555.1071	2629.8923	300
51	Optimized	405.6806	512.7835	0	4629.3815	2672.7746	300
52	Optimized	412.0478	511.4247	0	4621.0873	2667.986	300
53	Optimized	418.41505	510.06595	0	4612.7931	2663.1973	300
54	Optimized	424.7823	508.7072	0	4604.4989	2658.4087	300
55	Optimized	431.1495	507.3484	0	4596.0511	2653.5314	300
56	Optimized	437.5167	505.9896	0	4587.6034	2648.654	300
57	Optimized	443.8839	504.6308	0	4579.1556	2643.7767	300
58	Optimized	450.25115	503.27205	0	4570.5542	2638.8107	300
59	Optimized	456.6184	501.9133	0	4561.9528	2633.8447	300
60	Optimized	462.9856	500.5545	0	4553.1979	2628.79	300
61	Optimized	469.4133	499.3083	0	4621.1049	2667.9962	300
62	Optimized	475.90155	498.17475	0	4592.5618	2651.5168	300
63	Optimized	482.3898	497.0412	0	4563.715	2634.8621	300
64	Optimized	488.87805	495.9076	0	4534.7164	2618.1197	300
65	Optimized	495.3663	494.774	0	4505.2623	2601.1144	300
66	Optimized	501.8545	493.64045	0	4475.8082	2584.109	300
67	Optimized	508.34275	492.5069	0	4445.8986	2566.8407	300
68	Optimized	514.831	491.3733	0	4415.8372	2549.4848	300
69	Optimized	521.31925	490.23975	0	4385.4721	2531.9535	300
70	Optimized	527.8075	489.1062	0	4354.9553	2514.3346	300
71	Optimized	534.09655	488.16795	0	4418.0778	2550.7784	300

72	Optimized	540.1864	487.42505	0	4362.0063	2518.4055	300
73	Optimized	546.27625	486.6821	0	4305.4457	2485.7503	300
74	Optimized	552.36615	485.93915	0	4248.7222	2453.0009	300
75	Optimized	558.45605	485.19625	0	4191.6727	2420.0634	300
76	Optimized	564.5459	484.45335	0	4134.2972	2386.9376	300
77	Optimized	570.63575	483.71045	0	4076.5957	2353.6236	300
78	Optimized	576.72565	482.96755	0	4018.7312	2320.2155	300
79	Optimized	582.81555	482.2246	0	3960.7036	2286.7133	300
80	Optimized	588.9054	481.48165	0	3902.3501	2253.0229	300
81	Optimized	594.99525	480.73875	0	3843.8336	2219.2384	300
82	Optimized	601.2575	480.2123	0	3878.292	2239.133	300
83	Optimized	607.69205	479.90235	0	3773.5111	2178.6376	300
84	Optimized	614.12655	479.59245	0	3668.7302	2118.1423	300
85	Optimized	620.5611	479.2825	0	3563.9492	2057.647	300
86	Optimized	626.9957	478.9725	0	3459.013	1997.0621	300
87	Optimized	633.43025	478.66255	0	3354.0769	1936.4772	300
88	Optimized	639.86475	478.35265	0	3249.2959	1875.9819	300
89	Optimized	646.2993	478.0427	0	3144.515	1815.4866	300
90	Optimized	652.61265	478.1075	0	3141.7342	1813.8811	300
91	Optimized	658.8048	478.5471	0	2973.0732	1716.5046	300
92	Optimized	664.99695	478.9867	0	2805.2176	1619.5932	300
93	Optimized	671.18905	479.4263	0	2638.1675	1523.1467	300
94	Optimized	677.3812	479.8659	0	2472.0839	1427.2583	300
95	Optimized	683.57335	480.3055	0	2306.9669	1331.928	300
96	Optimized	689.90385	481.32495	0	2216.3439	1279.6068	300
97	Optimized	696.3728	482.9242	0	1938.2692	1119.0603	300
98	Optimized	702.84175	484.52345	0	1663.496	960.41986	300
99	Optimized	709.31065	486.1227	0	1392.3994	803.90218	300
100	Optimized	716.11005	488.84135	0	1136.6004	656.21654	300
101	Optimized	723.23995	492.6794	0	643.10286	371.29561	300
102	Optimized	727.1334	494.77525	0	295.72548	96.087032	19
103	Optimized	728.7759	495.65945	0	137.64141	73.185234	0

Slices of Slip Surface: 193

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal	Frictional Strength (psf)	Cohesive Strength

					Stress (psf)		(psf)
1	193	97.65534	649.11735	0	105.85406	56.283604	0
2	193	99.440795	647.8327	0	240.22596	78.054145	19
3	193	101.64441	646.2627	0	273.09572	157.67189	300
4	193	103.61965	644.8575	0	364.49893	210.44356	300
5	193	106.91215	642.5503	0	465.95585	269.01974	300
6	193	113.2365	638.16215	0	651.38328	376.07631	300
7	193	119.56085	633.85695	0	830.44797	479.45936	300
8	193	125.8852	629.6332	0	1003.4246	579.32748	300
9	193	132.20955	625.4895	0	1170.5669	675.82711	300
10	193	138.5339	621.4245	0	1332.132	769.10676	300
11	193	144.85825	617.43685	0	1488.2982	859.26937	300
12	193	151.1826	613.52525	0	1639.4603	946.54285	300
13	193	157.50695	609.68855	0	1785.5952	1030.9139	300
14	193	163.83125	605.9256	0	1926.9734	1112.5386	300
15	193	170.1556	602.23525	0	2063.8782	1191.5807	300
16	193	176.47995	598.6164	0	2196.4676	1268.1312	300
17	193	182.8043	595.06805	0	2324.7701	1342.2066	300
18	193	189.12865	591.58925	0	2449.0979	1413.9874	300
19	193	195.453	588.179	0	2569.6352	1483.5796	300
20	193	201.77735	584.8364	0	2686.2931	1550.9321	300
21	193	208.10165	581.56055	0	2799.4088	1616.2394	300
22	193	214.426	578.35055	0	2909.046	1679.5385	300
23	193	220.75035	575.20565	0	3015.2731	1740.8688	300
24	193	227.0747	572.12505	0	3118.1636	1800.2726	300
25	193	233.39905	569.10795	0	3217.938	1857.8774	300
26	193	239.7234	566.15365	0	3314.5371	1913.6489	300
27	193	246.04775	563.26145	0	3408.1902	1967.7195	300
28	193	252.3721	560.43065	0	3498.8451	2020.0592	300
29	193	258.69645	557.66055	0	3586.5955	2070.7219	300
30	193	265.02075	554.9506	0	3671.5389	2119.7639	300
31	193	271.3451	552.30015	0	3753.6303	2167.1594	300
32	193	277.66945	549.70855	0	3832.9729	2212.968	300
33	193	283.9938	547.17525	0	3909.5256	2257.1657	300
34	193	290.31815	544.69975	0	3983.3981	2299.816	300
35	193	296.6425	542.2815	0	4054.7001	2340.9822	300

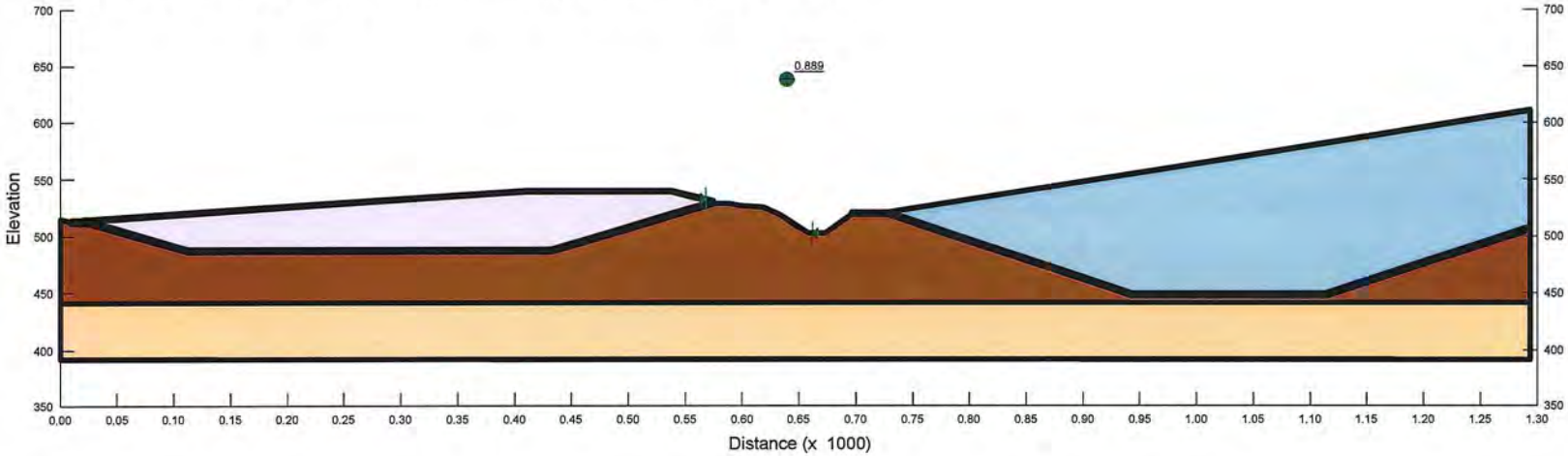
36	193	302.96685	539.91995	0	4123.1014	2380.4737	300
37	193	309.2912	537.61465	0	4189.0135	2418.5281	300
38	193	315.61555	535.36505	0	4252.1076	2454.9555	300
39	193	321.93985	533.17075	0	4312.5009	2489.8236	300
40	193	328.2642	531.03135	0	4370.3147	2523.2024	300
41	193	334.58855	528.94635	0	4425.2212	2554.9026	300
42	193	340.9129	526.9153	0	4477.4929	2585.0817	300
43	193	347.23725	524.93785	0	4526.9543	2613.6383	300
44	193	353.5616	523.01365	0	4573.4291	2640.4705	300
45	193	359.88595	521.1423	0	4617.0443	2665.6518	300
46	193	366.21025	519.3234	0	4657.7756	2689.168	300
47	193	372.5346	517.55665	0	4695.6029	2711.0076	300
48	193	378.85895	515.84175	0	4730.1989	2730.9816	300
49	193	385.1833	514.1783	0	4761.8479	2749.2542	300
50	193	391.50765	512.566	0	4790.0707	2765.5486	300
51	193	397.832	511.0046	0	4815.1555	2780.0313	300
52	193	404.15635	509.4938	0	4836.9293	2792.6024	300
53	193	410.4807	508.03335	0	4855.3757	2803.2525	300
54	193	416.80505	506.62295	0	4870.1685	2811.7931	300
55	193	423.12935	505.26235	0	4881.4463	2818.3043	300
56	193	429.4537	503.95135	0	4889.0387	2822.6878	300
57	193	435.77805	502.6897	0	4892.7764	2824.8457	300
58	193	442.1024	501.47715	0	4892.8005	2824.8597	300
59	193	448.42675	500.3135	0	4888.9433	2822.6327	300
60	193	454.7511	499.1986	0	4881.0375	2818.0683	300
61	193	461.07545	498.1322	0	4868.9154	2811.0696	300
62	193	467.3998	497.1141	0	4852.722	2801.7203	300
63	193	473.72415	496.1442	0	4832.2936	2789.926	300
64	193	480.04845	495.2223	0	4807.465	2775.5912	300
65	193	486.3728	494.3482	0	4778.2294	2758.712	300
66	193	492.69715	493.5218	0	4744.423	2739.1939	300
67	193	499.0215	492.743	0	4706.0419	2717.0346	300
68	193	505.34585	492.01165	0	4663.0812	2692.2312	300
69	193	511.6702	491.32755	0	4615.382	2664.692	300
70	193	517.99455	490.69065	0	4562.9424	2634.416	300
71	193	524.31885	490.10085	0	4505.763	2601.4035	300

72	193	530.6432	489.558	0	4443.529	2565.4727	300
73	193	536.96755	489.06205	0	4376.5588	2526.8074	300
74	193	543.2919	488.61295	0	4304.6987	2485.319	300
75	193	549.61625	488.21065	0	4227.7952	2440.9187	300
76	193	555.9406	487.855	0	4146.0145	2393.7026	300
77	193	562.26495	487.54595	0	4059.0472	2343.492	300
78	193	568.5893	487.2835	0	3967.3774	2290.5664	300
79	193	574.91365	487.06755	0	3870.5421	2234.6585	300
80	193	581.23795	486.8981	0	3768.87	2175.9581	300
81	193	587.5623	486.7751	0	3662.3747	2114.473	300
82	193	593.88665	486.69855	0	3550.9139	2050.1211	300
83	193	600.211	486.6685	0	3434.5042	1982.9119	300
84	193	606.53535	486.68485	0	3313.4803	1913.0387	300
85	193	612.8597	486.7476	0	3187.7038	1840.4216	300
86	193	619.18405	486.8568	0	3057.1961	1765.073	300
87	193	625.5084	487.0125	0	2922.1382	1687.0973	300
88	193	631.83275	487.2147	0	2782.7115	1606.5992	300
89	193	638.15705	487.46335	0	2638.7842	1523.5028	300
90	193	644.4814	487.7586	0	2490.6982	1438.0053	300
91	193	650.80575	488.10045	0	2338.3244	1350.0322	300
92	193	657.1301	488.48895	0	2181.85	1259.6917	300
93	193	663.45445	488.9242	0	2021.4633	1167.0924	300
94	193	669.7788	489.40625	0	1857.1959	1072.2526	300
95	193	676.10315	489.9352	0	1689.3965	975.3735	300
96	193	682.42745	490.51105	0	1517.8309	876.32007	300
97	193	688.7518	491.13395	0	1342.8655	775.30374	300
98	193	695.07615	491.80405	0	1164.5832	672.37245	300
99	193	701.4005	492.52145	0	983.10041	567.59329	300
100	193	707.72485	493.28625	0	798.56501	461.05173	300
101	193	714.0492	494.0985	0	611.09502	352.81587	300
102	193	720.37355	494.9584	0	420.8088	242.95407	300
103	193	724.1964	495.49565	0	279.31509	90.754974	19
104	193	727.47355	495.9789	0	127.31186	67.692917	0

EXCAVATED SLOPE SECTIONS
WITH CORRESPONDING ANALYSIS

File Name: Section B-B' MW Initial Height wtih Pipeline Excavation1.gsz

Name: Municipal Solid Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 48
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 3:43:18 PM
File Name: Section B-B' MW Initial Height wtih Pipeline Excavation1.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\
Last Solved Date: 10/22/2013
Last Solved Time: 3:43:38 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 3 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Municipal Solid Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (567.92471, 532.69172) ft
Right Coordinate: (662, 502.7796) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	0.889	(674.095, 562.68)	20.10376	(630.984, 519.424)	(658.126, 502.78)
2	883	0.899	(674.095, 562.68)	61.892	(628.877, 520.419)	(657.619, 503.022)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	631.1118	519.31725	0	3.7118002	1.9735992	0
2	Optimized	631.3668	519.10375	0	11.086688	5.8948965	0
3	Optimized	631.6218	518.89025	0	18.389108	9.7776619	0
4	Optimized	631.88995	518.6436	0	25.909073	13.776099	0
5	Optimized	632.1713	518.36385	0	36.396199	19.352202	0
6	Optimized	632.45265	518.0841	0	46.716983	24.83986	0
7	Optimized	632.73395	517.8043	0	56.871424	30.239073	0
8	Optimized	633.0153	517.5245	0	66.869604	35.555199	0
9	Optimized	633.29665	517.2447	0	76.719085	40.792261	0
10	Optimized	633.578	516.96495	0	86.424906	45.952938	0
11	Optimized	633.85935	516.6852	0	95.994629	51.041249	0
12	Optimized	634.1115	516.4344	0	103.18971	54.866944	0
13	Optimized	634.3345	516.21265	0	108.06414	57.458724	0
14	Optimized	634.5684	515.99085	0	117.79937	62.635035	0

15	Optimized	634.8132	515.769	0	121.92206	64.827108	0
16	Optimized	635.058	515.54715	0	126.02356	67.007915	0
17	Optimized	635.3028	515.3253	0	130.1069	69.179066	0
18	Optimized	635.56055	515.1011	0	139.33104	74.083629	0
19	Optimized	635.83125	514.8745	0	142.78422	75.919716	0
20	Optimized	636.10195	514.6479	0	146.2374	77.755803	0
21	Optimized	636.3726	514.4213	0	149.69057	79.59189	0
22	Optimized	636.64325	514.1947	0	153.15225	81.432496	0
23	Optimized	636.91395	513.9681	0	156.61959	83.276114	0
24	Optimized	637.1792	513.75375	0	166.01492	88.271701	0
25	Optimized	637.43905	513.55165	0	168.48478	89.584946	0
26	Optimized	637.6989	513.3496	0	170.96982	90.906268	0
27	Optimized	637.95875	513.14755	0	173.47613	92.238896	0
28	Optimized	638.2186	512.94545	0	176.00371	93.582832	0
29	Optimized	638.4784	512.74335	0	178.55559	94.93969	0
30	Optimized	638.73825	512.54125	0	181.13177	96.309471	0
31	Optimized	638.9981	512.3392	0	183.73226	97.692174	0
32	Optimized	639.2731	512.1298	0	190.63598	101.36295	0
33	Optimized	639.5633	511.91305	0	193.06555	102.65478	0
34	Optimized	639.8535	511.69635	0	195.53102	103.96569	0
35	Optimized	640.14375	511.47965	0	198.03514	105.29715	0
36	Optimized	640.434	511.26295	0	200.57791	106.64917	0
37	Optimized	640.7242	511.0462	0	203.15933	108.02173	0
38	Optimized	641.0144	510.82945	0	205.78493	109.41779	0
39	Optimized	641.3072	510.61305	0	210.90371	112.13949	0
40	Optimized	641.6026	510.3969	0	213.37892	113.45558	0
41	Optimized	641.898	510.18075	0	215.89784	114.79492	0
42	Optimized	642.1934	509.96465	0	218.46594	116.1604	0
43	Optimized	642.4888	509.7485	0	221.07775	117.54912	0
44	Optimized	642.77525	509.54025	0	225.43714	119.86705	0
45	Optimized	643.0528	509.33995	0	227.7919	121.1191	0
46	Optimized	643.33035	509.1396	0	230.18755	122.39289	0
47	Optimized	643.6079	508.93925	0	232.62411	123.68843	0
48	Optimized	643.88545	508.73895	0	235.10449	125.00728	0
49	Optimized	644.162	508.56635	0	283.34856	150.6591	0
50	Optimized	644.4376	508.42145	0	281.29301	149.56615	0

51	Optimized	644.71315	508.27655	0	279.20534	148.45611	0
52	Optimized	644.9887	508.13165	0	277.07912	147.32558	0
53	Optimized	645.2643	507.98675	0	274.91758	146.17627	0
54	Optimized	645.5399	507.84185	0	272.7207	145.00817	0
55	Optimized	645.81545	507.69695	0	270.48529	143.81958	0
56	Optimized	646.091	507.55205	0	268.21454	142.6122	0
57	Optimized	646.3666	507.40715	0	265.90847	141.38604	0
58	Optimized	646.63275	507.269	0	267.33357	142.14378	0
59	Optimized	646.8894	507.13765	0	264.70435	140.7458	0
60	Optimized	647.14605	507.00635	0	262.03351	139.32569	0
61	Optimized	647.4027	506.87505	0	259.33146	137.88898	0
62	Optimized	647.65935	506.74375	0	256.59472	136.43383	0
63	Optimized	647.916	506.61245	0	253.82329	134.96024	0
64	Optimized	648.17265	506.48115	0	251.02064	133.47004	0
65	Optimized	648.43535	506.3495	0	252.95319	134.4976	0
66	Optimized	648.70405	506.2175	0	249.25554	132.53152	0
67	Optimized	648.97275	506.0855	0	245.52115	130.54591	0
68	Optimized	649.2415	505.9535	0	241.75002	128.54077	0
69	Optimized	649.51025	505.8215	0	237.94214	126.51608	0
70	Optimized	649.77895	505.6895	0	234.10421	124.47541	0
71	Optimized	650.04765	505.5575	0	230.23286	122.41699	0
72	Optimized	650.31635	505.4255	0	226.33146	120.34257	0
73	Optimized	650.5841	505.2993	0	230.33632	122.47199	0
74	Optimized	650.8509	505.1789	0	224.94932	119.60767	0
75	Optimized	651.11775	505.05845	0	219.53498	116.72882	0
76	Optimized	651.3846	504.938	0	214.10357	113.84089	0
77	Optimized	651.6514	504.8176	0	208.65849	110.94569	0
78	Optimized	651.9182	504.6972	0	203.19975	108.04322	0
79	Optimized	652.18505	504.57675	0	197.73076	105.13531	0
80	Optimized	652.4519	504.4563	0	192.25836	102.22558	0
81	Optimized	652.7187	504.3359	0	186.78254	99.314036	0
82	Optimized	652.9855	504.21545	0	181.30672	96.402491	0
83	Optimized	653.25235	504.095	0	175.83431	93.492762	0
84	Optimized	653.5192	503.9746	0	170.36532	90.584849	0
85	Optimized	653.786	503.8542	0	164.91	87.684201	0
86	Optimized	654.05385	503.74555	0	169.75285	90.259191	0

87	Optimized	654.32275	503.64865	0	160.72661	85.459852	0
88	Optimized	654.5917	503.5518	0	151.77383	80.699578	0
89	Optimized	654.86065	503.45495	0	142.90502	75.983949	0
90	Optimized	655.12955	503.3581	0	134.12018	71.312964	0
91	Optimized	655.39845	503.26125	0	125.4228	66.688485	0
92	Optimized	655.6674	503.1644	0	116.81638	62.112372	0
93	Optimized	655.93635	503.06755	0	108.30442	57.586484	0
94	Optimized	656.20525	502.97065	0	99.890426	53.112681	0
95	Optimized	656.47105	502.8984	0	100.19482	53.274533	0
96	Optimized	656.73375	502.85075	0	85.127962	45.26334	0
97	Optimized	656.9965	502.80305	0	70.424381	37.445308	0
98	Optimized	657.25925	502.7554	0	56.080339	29.818445	0
99	Optimized	657.52195	502.70775	0	42.084598	22.376777	0
100	Optimized	657.82665	502.719	0	24.154379	12.843111	0
101	Optimized	658.06295	502.76685	0	1.7571603	0.93429869	0

Slices of Slip Surface: 883

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	883	629.0194	520.2678	0	6.1588595	3.2747237	0
2	883	629.304	519.96735	0	18.291028	9.7255123	0
3	883	629.5886	519.67085	0	30.069141	15.988046	0
4	883	629.8732	519.3783	0	41.51539	22.074125	0
5	883	630.1578	519.08955	0	52.646127	27.992442	0
6	883	630.4424	518.8045	0	63.48429	33.755196	0
7	883	630.727	518.52315	0	74.043974	39.369879	0
8	883	631.0116	518.24545	0	84.342726	44.845823	0
9	883	631.2962	517.97125	0	94.401568	50.194204	0
10	883	631.5808	517.7005	0	104.22968	55.419904	0
11	883	631.86545	517.4332	0	113.84726	60.533662	0
12	883	632.1501	517.16925	0	123.26493	65.541125	0
13	883	632.4347	516.9086	0	132.49655	70.449667	0
14	883	632.7193	516.65115	0	141.55661	75.266982	0
15	883	633.0039	516.3969	0	150.45498	79.998334	0
16	883	633.2885	516.1458	0	159.20723	84.651987	0

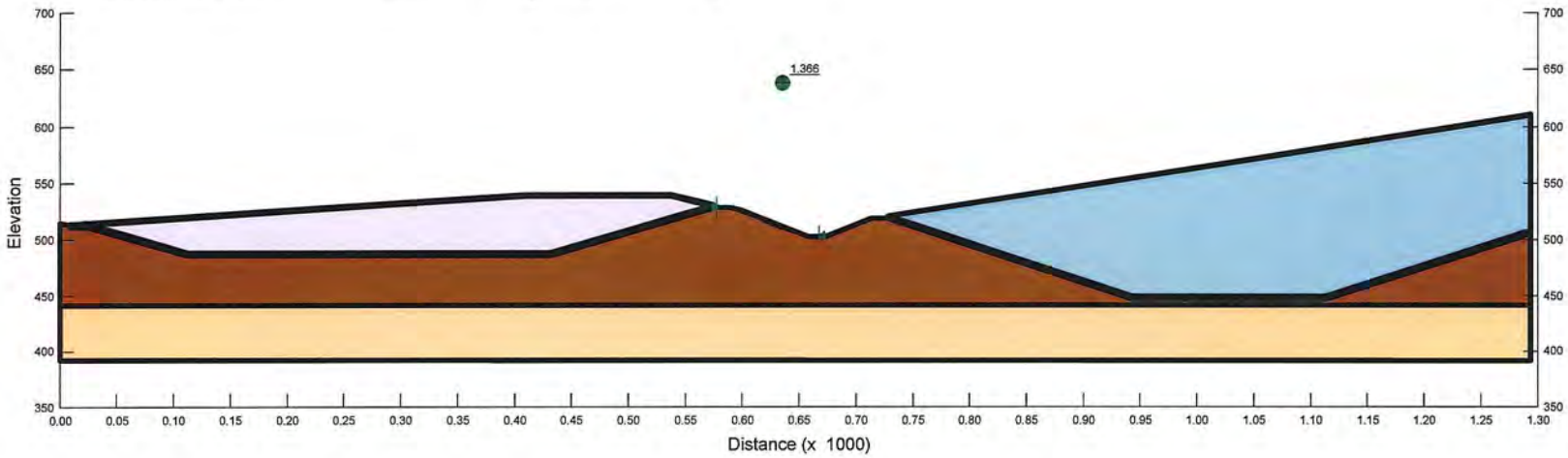
17	883	633.5731	515.89775	0	167.81891	89.2309	0
18	883	633.8577	515.65275	0	176.30403	93.742513	0
19	883	634.144	515.40925	0	182.95962	97.281355	0
20	883	634.43205	515.1673	0	187.77396	99.841184	0
21	883	634.7201	514.92835	0	192.46852	102.33733	0
22	883	635.0081	514.6923	0	197.04325	104.76975	0
23	883	635.29615	514.45915	0	201.50636	107.14283	0
24	883	635.5842	514.2288	0	205.8581	109.45669	0
25	883	635.8722	514.00125	0	210.10447	111.71453	0
26	883	636.1602	513.7765	0	214.24588	113.91655	0
27	883	636.44825	513.5544	0	218.28866	116.06614	0
28	883	636.7363	513.335	0	222.22813	118.16079	0
29	883	637.0243	513.11825	0	226.06788	120.20242	0
30	883	637.31235	512.9041	0	229.81169	122.19304	0
31	883	637.6004	512.69255	0	233.45512	124.13029	0
32	883	637.8884	512.48355	0	236.99928	126.01475	0
33	883	638.17645	512.27705	0	240.44259	127.84559	0
34	883	638.4645	512.073	0	243.78625	129.62345	0
35	883	638.7525	511.87145	0	247.026	131.34606	0
36	883	639.0405	511.6723	0	250.16023	133.01256	0
37	883	639.32855	511.47555	0	253.18459	134.62063	0
38	883	639.6166	511.2812	0	256.09775	136.16959	0
39	883	639.9046	511.08915	0	258.89231	137.65548	0
40	883	640.19265	510.8994	0	261.56972	139.07909	0
41	883	640.4807	510.71195	0	264.11991	140.43505	0
42	883	640.7687	510.5268	0	266.54141	141.72258	0
43	883	641.05675	510.34385	0	268.82679	142.93774	0
44	883	641.3448	510.1631	0	270.96879	144.07666	0
45	883	641.6328	509.9846	0	272.9659	145.13854	0
46	883	641.9208	509.80825	0	274.80472	146.11626	0
47	883	642.20885	509.63405	0	276.48386	147.00908	0
48	883	642.4969	509.462	0	277.99264	147.81131	0
49	883	642.7849	509.29205	0	279.3237	148.51905	0
50	883	643.07295	509.12415	0	280.47244	149.12984	0
51	883	643.361	508.95835	0	281.42813	149.63799	0
52	883	643.649	508.7946	0	282.18017	150.03786	0

53	883	643.93705	508.63285	0	282.7269	150.32856	0
54	883	644.2251	508.47315	0	283.05151	150.50116	0
55	883	644.5131	508.31545	0	283.15233	150.55477	0
56	883	644.8011	508.1597	0	283.01846	150.48359	0
57	883	645.08915	508.0059	0	282.64203	150.28343	0
58	883	645.3772	507.85405	0	282.01216	149.94853	0
59	883	645.6652	507.70415	0	281.12409	149.47633	0
60	883	645.95325	507.5562	0	279.96991	148.86264	0
61	883	646.2413	507.4101	0	278.5416	148.1032	0
62	883	646.5293	507.26585	0	276.82821	147.19217	0
63	883	646.81735	507.1235	0	274.82793	146.1286	0
64	883	647.1054	506.983	0	272.53603	144.90998	0
65	883	647.3934	506.84435	0	269.94139	143.53039	0
66	883	647.6814	506.70755	0	267.03913	141.98723	0
67	883	647.96945	506.57255	0	263.83086	140.28136	0
68	883	648.2575	506.4393	0	260.30863	138.40855	0
69	883	648.5455	506.30785	0	256.47083	136.36796	0
70	883	648.83355	506.1782	0	252.31597	134.15878	0
71	883	649.1216	506.0503	0	247.83929	131.77849	0
72	883	649.4096	505.92415	0	243.04577	129.22973	0
73	883	649.69765	505.79975	0	237.93411	126.51181	0
74	883	649.9857	505.6771	0	232.50609	123.62568	0
75	883	650.2737	505.55615	0	226.76366	120.57238	0
76	883	650.5617	505.4369	0	220.70894	117.35302	0
77	883	650.84975	505.31935	0	214.3503	113.97208	0
78	883	651.1378	505.20345	0	207.69333	110.4325	0
79	883	651.4258	505.0892	0	200.7402	106.73546	0
80	883	651.71385	504.97665	0	193.49981	102.88568	0
81	883	652.0019	504.8658	0	185.98114	98.887924	0
82	883	652.2899	504.75655	0	178.19312	94.746963	0
83	883	652.57795	504.6489	0	170.14827	90.46944	0
84	883	652.866	504.54295	0	161.85257	86.058539	0
85	883	653.154	504.4386	0	153.31869	81.520995	0
86	883	653.442	504.33585	0	144.55931	76.863551	0
87	883	653.73005	504.2347	0	135.58416	72.091378	0
88	883	654.0181	504.1351	0	126.40938	67.213062	0

89	883	654.3061	504.0371	0	117.04483	62.233838	0
90	883	654.59415	503.9407	0	107.50701	57.162489	0
91	883	654.8822	503.8459	0	97.805926	52.004333	0
92	883	655.1702	503.75265	0	87.954981	46.766493	0
93	883	655.45825	503.6609	0	77.967689	41.456155	0
94	883	655.7463	503.5707	0	67.857609	36.080531	0
95	883	656.0343	503.48205	0	57.635127	30.64514	0
96	883	656.3223	503.39495	0	47.317301	25.159055	0
97	883	656.61035	503.3094	0	36.914686	19.627887	0
98	883	656.8984	503.22535	0	26.436171	14.056362	0
99	883	657.1864	503.1428	0	15.89508	8.4515638	0
100	883	657.47445	503.06175	0	5.3014488	2.8188303	0

File Name: Section B-B' MW Initial Height wtih Pipeline- Excavation2.gsz

Name: Municipal Solid Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 59
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 3:33:33 PM
File Name: Section B-B' MW Initial Height wtih Pipeline- Excavation2.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\
Last Solved Date: 10/22/2013
Last Solved Time: 3:33:42 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 3 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Municipal Solid Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (578, 528.62) ft
Right Coordinate: (668, 502.7796) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.366	(686.176, 672.299)	32.537	(597.376, 526.633)	(658, 502.78)
2	382	1.372	(686.176, 672.299)	171.069	(596.012, 526.92)	(654.368, 504.213)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	597.56485	526.49245	0	9.3194387	4.9552335	0
2	Optimized	598.09265	526.10005	0	29.475883	15.672605	0
3	Optimized	598.7715	525.59535	0	51.000583	27.117491	0
4	Optimized	599.3998	525.17835	0	70.224005	37.338766	0
5	Optimized	599.97765	524.849	0	79.789481	42.42482	0
6	Optimized	600.5555	524.51965	0	89.297823	47.480495	0
7	Optimized	601.1333	524.1903	0	98.753541	52.508189	0
8	Optimized	601.7111	523.86095	0	108.15664	57.507903	0
9	Optimized	602.28895	523.5316	0	117.50861	62.480436	0
10	Optimized	602.8668	523.20225	0	126.81097	67.426588	0
11	Optimized	603.4648	522.8844	0	138.66233	73.728068	0
12	Optimized	604.08295	522.57805	0	144.52399	76.844771	0
13	Optimized	604.7011	522.2717	0	150.36827	79.952226	0
14	Optimized	605.31925	521.96535	0	156.20964	83.05814	0

15	Optimized	605.9374	521.659	0	162.03652	86.156346	0
16	Optimized	606.5556	521.35265	0	167.8489	89.246846	0
17	Optimized	607.17375	521.04635	0	173.66129	92.337345	0
18	Optimized	607.7919	520.74	0	179.45918	95.420138	0
19	Optimized	608.414	520.44065	0	187.26342	99.569729	0
20	Optimized	609.04005	520.1483	0	191.54737	101.84754	0
21	Optimized	609.66615	519.8559	0	195.84579	104.13305	0
22	Optimized	610.2922	519.56355	0	200.12973	106.41087	0
23	Optimized	610.91825	519.2712	0	204.42815	108.69638	0
24	Optimized	611.5443	518.9788	0	208.72657	110.98189	0
25	Optimized	612.17035	518.68645	0	213.03946	113.27509	0
26	Optimized	612.7964	518.3941	0	217.35235	115.5683	0
27	Optimized	613.42035	518.1077	0	223.37134	118.76865	0
28	Optimized	614.0422	517.82725	0	226.78685	120.58471	0
29	Optimized	614.66405	517.54675	0	230.21702	122.40856	0
30	Optimized	615.28595	517.2663	0	233.64719	124.23241	0
31	Optimized	615.9078	516.98585	0	237.10667	126.07185	0
32	Optimized	616.52965	516.70535	0	240.56616	127.9113	0
33	Optimized	617.1515	516.4249	0	244.0403	129.75853	0
34	Optimized	617.77335	516.14445	0	247.52911	131.61356	0
35	Optimized	618.3777	515.87575	0	252.81205	134.42255	0
36	Optimized	618.9645	515.61885	0	255.41917	135.80878	0
37	Optimized	619.5513	515.36195	0	258.04189	137.20331	0
38	Optimized	620.13805	515.10505	0	260.68023	138.60614	0
39	Optimized	620.7248	514.84815	0	263.31857	140.00897	0
40	Optimized	621.3116	514.59125	0	265.98813	141.4284	0
41	Optimized	621.89155	514.33765	0	268.77882	142.91223	0
42	Optimized	622.4647	514.0873	0	271.35309	144.281	0
43	Optimized	623.03785	513.83695	0	273.94334	145.65826	0
44	Optimized	623.61095	513.5866	0	276.54958	147.04402	0
45	Optimized	624.18405	513.3362	0	279.15583	148.42979	0
46	Optimized	624.7572	513.08585	0	281.79405	149.83255	0
47	Optimized	625.33035	512.8355	0	284.43227	151.23532	0
48	Optimized	625.90345	512.58515	0	287.08648	152.64659	0
49	Optimized	626.4777	512.3357	0	290.64378	154.53804	0
50	Optimized	627.05305	512.0871	0	293.069	155.82755	0

51	Optimized	627.6284	511.83855	0	295.51018	157.12555	0
52	Optimized	628.20375	511.59	0	297.96731	158.43203	0
53	Optimized	628.7791	511.3414	0	300.42445	159.73851	0
54	Optimized	629.35445	511.09285	0	302.91349	161.06196	0
55	Optimized	629.9261	510.87185	0	324.10835	172.33147	0
56	Optimized	630.49405	510.6783	0	321.04176	170.70093	0
57	Optimized	631.062	510.48475	0	317.97517	169.0704	0
58	Optimized	631.62995	510.29125	0	314.87525	167.42214	0
59	Optimized	632.1979	510.09775	0	311.75866	165.76502	0
60	Optimized	632.76585	509.9042	0	308.62541	164.09904	0
61	Optimized	633.374	509.6987	0	306.29551	162.86021	0
62	Optimized	634.0224	509.48125	0	302.27454	160.72222	0
63	Optimized	634.6708	509.26375	0	298.23895	158.57646	0
64	Optimized	635.31925	509.04625	0	294.17411	156.41515	0
65	Optimized	635.9677	508.82875	0	290.08003	154.23829	0
66	Optimized	636.6161	508.6113	0	285.97134	152.05366	0
67	Optimized	637.2645	508.39385	0	281.84801	149.86125	0
68	Optimized	637.89445	508.1844	0	278.84149	148.26265	0
69	Optimized	638.506	507.98305	0	274.46153	145.93379	0
70	Optimized	639.1176	507.7817	0	270.06605	143.59667	0
71	Optimized	639.72915	507.58035	0	265.65503	141.25129	0
72	Optimized	640.32685	507.386	0	262.5634	139.60744	0
73	Optimized	640.9108	507.19865	0	257.73675	137.04106	0
74	Optimized	641.49475	507.0113	0	252.89379	134.46601	0
75	Optimized	642.0787	506.8239	0	248.03452	131.8823	0
76	Optimized	642.66265	506.63655	0	243.17526	129.29858	0
77	Optimized	643.24655	506.4492	0	238.29969	126.70619	0
78	Optimized	643.8305	506.2618	0	233.40781	124.10513	0
79	Optimized	644.41445	506.07445	0	228.53224	121.51275	0
80	Optimized	645.0137	505.8874	0	225.28322	119.78521	0
81	Optimized	645.6283	505.7006	0	218.8381	116.35828	0
82	Optimized	646.2429	505.5138	0	212.40856	112.93963	0
83	Optimized	646.8575	505.327	0	205.96344	109.51271	0
84	Optimized	647.47205	505.1402	0	199.5339	106.09405	0
85	Optimized	648.0866	504.9534	0	193.10435	102.6754	0
86	Optimized	648.7012	504.7666	0	186.69037	99.265031	0

87	Optimized	649.3158	504.5798	0	180.26082	95.846381	0
88	Optimized	649.92575	504.41095	0	177.15164	94.193197	0
89	Optimized	650.5311	504.26	0	166.71681	88.644901	0
90	Optimized	651.13645	504.10905	0	156.32686	83.120468	0
91	Optimized	651.7418	503.95815	0	145.9818	77.619899	0
92	Optimized	652.34715	503.8072	0	135.68322	72.144046	0
93	Optimized	652.95245	503.65625	0	125.43272	66.693761	0
94	Optimized	653.5578	503.50535	0	115.23192	61.269896	0
95	Optimized	654.16315	503.35445	0	105.0824	55.873304	0
96	Optimized	654.7685	503.2035	0	94.984182	50.503985	0
97	Optimized	655.37385	503.05255	0	84.94046	45.163644	0
98	Optimized	655.9669	502.9524	0	74.763854	39.752646	0
99	Optimized	656.5477	502.90305	0	53.068955	28.217264	0
100	Optimized	657.1285	502.85375	0	31.645114	16.826005	0
101	Optimized	657.7093	502.8044	0	10.489242	5.5772288	0

Slices of Slip Surface: 382

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	382	596.30245	526.74045	0	11.418781	6.0714734	0
2	382	596.88275	526.38375	0	34.098494	18.130491	0
3	382	597.46305	526.0302	0	56.459681	30.020145	0
4	382	598.04505	525.6788	0	73.370547	39.011812	0
5	382	598.6287	525.32955	0	84.835291	45.107724	0
6	382	599.21235	524.98345	0	96.003451	51.045941	0
7	382	599.796	524.64045	0	106.88073	56.829491	0
8	382	600.37965	524.30055	0	117.46858	62.45915	0
9	382	600.9633	523.96375	0	127.77591	67.939656	0
10	382	601.54695	523.62995	0	137.80586	73.272674	0
11	382	602.13065	523.2992	0	147.56318	78.460733	0
12	382	602.7143	522.9715	0	157.05117	83.505586	0
13	382	603.29795	522.6468	0	166.28079	88.413065	0
14	382	603.8816	522.32505	0	175.24507	93.179456	0
15	382	604.46525	522.00625	0	183.95668	97.811501	0
16	382	605.0489	521.6904	0	192.41331	102.30797	0

17	382	605.63255	521.37745	0	200.61269	106.66766	0
18	382	606.21625	521.0674	0	208.58294	110.90551	0
19	382	606.7999	520.76025	0	216.29168	115.00432	0
20	382	607.38355	520.45595	0	223.7824	118.98722	0
21	382	607.9672	520.1545	0	231.02279	122.837	0
22	382	608.55085	519.8559	0	238.02613	126.56074	0
23	382	609.1345	519.5601	0	244.79059	130.15747	0
24	382	609.71815	519.2671	0	251.34493	133.64247	0
25	382	610.30185	518.97685	0	257.65684	136.99857	0
26	382	610.8855	518.6894	0	263.73992	140.233	0
27	382	611.46915	518.4047	0	269.59255	143.3449	0
28	382	612.0528	518.1227	0	275.21308	146.33339	0
29	382	612.63645	517.84345	0	280.63081	149.21405	0
30	382	613.2201	517.5669	0	285.79793	151.96145	0
31	382	613.80375	517.29305	0	290.75928	154.59945	0
32	382	614.38745	517.0219	0	295.48245	157.1108	0
33	382	614.9711	516.7534	0	299.98152	159.50301	0
34	382	615.55475	516.48755	0	304.27073	161.78362	0
35	382	616.1384	516.2243	0	308.31752	163.93534	0
36	382	616.72205	515.96365	0	312.13611	165.96571	0
37	382	617.3057	515.70565	0	315.72517	167.87405	0
38	382	617.88935	515.45025	0	319.0992	169.66806	0
39	382	618.47305	515.19745	0	322.22545	171.33031	0
40	382	619.0567	514.9472	0	325.11838	172.86851	0
41	382	619.64035	514.6995	0	327.79262	174.29043	0
42	382	620.224	514.4544	0	330.21535	175.57862	0
43	382	620.80765	514.2118	0	332.40124	176.74087	0
44	382	621.3913	513.9717	0	334.34904	177.77654	0
45	382	621.97495	513.73415	0	336.05766	178.68503	0
46	382	622.55865	513.4991	0	337.52603	179.46578	0
47	382	623.1423	513.2665	0	338.73711	180.10972	0
48	382	623.72595	513.0364	0	339.70576	180.62476	0
49	382	624.3096	512.8088	0	340.41494	181.00184	0
50	382	624.89325	512.5836	0	340.86356	181.24037	0
51	382	625.4769	512.36085	0	341.05058	181.33981	0
52	382	626.06055	512.14055	0	340.99101	181.30813	0

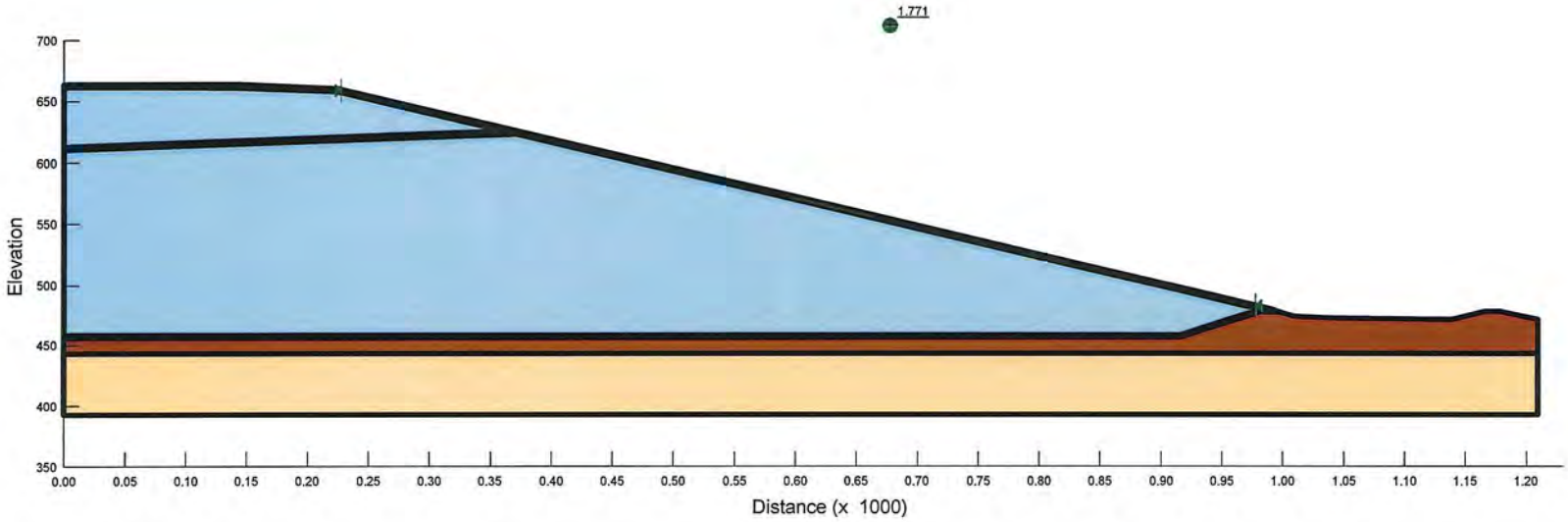
53	382	626.64425	511.9227	0	340.66781	181.13629	0
54	382	627.2279	511.70725	0	340.0639	180.81518	0
55	382	627.81155	511.4942	0	339.21049	180.36142	0
56	382	628.3952	511.28355	0	338.07445	179.75737	0
57	382	628.97885	511.0753	0	336.65478	179.00252	0
58	382	629.5625	510.86945	0	334.96667	178.10494	0
59	382	630.14615	510.6659	0	333.0093	177.06418	0
60	382	630.7298	510.46475	0	330.74933	175.86254	0
61	382	631.31345	510.266	0	328.21827	174.51675	0
62	382	631.89715	510.06955	0	325.3991	173.01777	0
63	382	632.4808	509.8754	0	322.29093	171.36513	0
64	382	633.06445	509.6836	0	318.90926	169.56706	0
65	382	633.6481	509.49415	0	315.22075	167.60585	0
66	382	634.23175	509.307	0	311.24083	165.48968	0
67	382	634.8154	509.12215	0	306.96879	163.2182	0
68	382	635.39905	508.93955	0	302.40387	160.79099	0
69	382	635.98275	508.75925	0	297.52901	158.19898	0
70	382	636.5664	508.58125	0	292.37623	155.4592	0
71	382	637.15005	508.40555	0	286.91209	152.55386	0
72	382	637.7337	508.2321	0	281.16876	149.50008	0
73	382	638.31735	508.06085	0	275.11273	146.28004	0
74	382	638.901	507.8919	0	268.77639	142.91094	0
75	382	639.48465	507.7252	0	262.12616	139.37495	0
76	382	640.06835	507.56075	0	255.19443	135.68928	0
77	382	640.652	507.3985	0	247.96421	131.84491	0
78	382	641.23565	507.23845	0	240.45154	127.85035	0
79	382	641.8193	507.08065	0	232.63941	123.69657	0
80	382	642.40295	506.92505	0	224.54391	119.39211	0
81	382	642.9866	506.77165	0	216.14804	114.92795	0
82	382	643.57025	506.62045	0	207.48454	110.32149	0
83	382	644.15395	506.47145	0	198.53654	105.56375	0
84	382	644.7376	506.32465	0	189.30365	100.65453	0
85	382	645.32125	506.18005	0	179.80219	95.602522	0
86	382	645.9049	506.0376	0	170.01524	90.398707	0
87	382	646.48855	505.8973	0	159.97584	85.060664	0
88	382	647.0722	505.7592	0	149.66378	79.577643	0

89	382	647.65585	505.62325	0	139.09055	73.955759	0
90	382	648.23955	505.4894	0	128.2593	68.196678	0
91	382	648.8232	505.3577	0	117.17324	62.302115	0
92	382	649.40685	505.2282	0	105.83893	56.275556	0
93	382	649.9905	505.10085	0	94.256274	50.11695	0
94	382	650.57415	504.9756	0	82.433586	43.830715	0
95	382	651.1578	504.85245	0	70.372507	37.417726	0
96	382	651.74145	504.73145	0	58.078044	30.880644	0
97	382	652.32515	504.61255	0	45.553557	24.221256	0
98	382	652.9088	504.49575	0	32.804127	17.442264	0
99	382	653.49245	504.3811	0	19.834836	10.54637	0
100	382	654.0761	504.26855	0	6.6469532	3.5342477	0

VENEER STABILITY SECTIONS
WITH CORRESPONDING ANALYSIS

File Name: Section A-A' Full Height -Top Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 25
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 2:31:31 PM
File Name: Section A-A' Full Height -Top Liner.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/22/2013
Last Solved Time: 2:32:00 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 2 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (227.80411, 659.16552) ft
Right Coordinate: (977.7918, 483.11308) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.771	(791.42, 1271.3)	41.21427	(571.618, 578.458)	(667.101, 556.045)
2	921	1.968	(791.42, 1271.3)	727.013	(569.798, 578.886)	(681.797, 552.595)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	572.10685	578.3435	0	0.027557129	0.014652386	0
2	Optimized	573.0839	578.11365	0	0.082738139	0.043992649	0
3	Optimized	574.06095	577.8838	0	0.13801479	0.073383766	0
4	Optimized	575.03805	577.65395	0	0.19338808	0.10282627	0
5	Optimized	576.0151	577.4241	0	0.248861	0.13232174	0
6	Optimized	576.99215	577.19425	0	0.30443355	0.16187019	0
7	Optimized	577.96925	576.9644	0	0.3600858	0.19146102	0
8	Optimized	578.9463	576.73455	0	0.41584764	0.22111011	0
9	Optimized	579.92335	576.5047	0	0.47168918	0.25080159	0
10	Optimized	580.9004	576.27485	0	0.52762039	0.28054074	0
11	Optimized	581.87745	576.045	0	0.5836313	0.31032227	0
12	Optimized	582.81415	575.809	0	2.3753928	1.2630188	0
13	Optimized	583.71045	575.5668	0	5.9204418	3.1479548	0
14	Optimized	584.6068	575.32455	0	9.467968	5.0342079	0

15	Optimized	585.50315	575.0823	0	13.018079	6.9218354	0
16	Optimized	586.39945	574.8401	0	16.570129	8.8104937	0
17	Optimized	587.2958	574.5979	0	20.124333	10.700297	0
18	Optimized	588.19215	574.35565	0	23.68069	12.591246	0
19	Optimized	589.08845	574.1134	0	27.239202	14.483341	0
20	Optimized	589.97985	573.83055	0	34.038267	18.098468	0
21	Optimized	590.8663	573.50705	0	46.361773	24.650992	0
22	Optimized	591.75275	573.18355	0	58.670443	31.195628	0
23	Optimized	592.6392	572.86005	0	70.967456	37.734066	0
24	Optimized	593.52565	572.53655	0	83.251752	44.265742	0
25	Optimized	594.46955	572.141	0	97.272832	51.720882	0
26	Optimized	595.47085	571.67335	0	120.80833	64.23493	0
27	Optimized	596.4722	571.2057	0	144.28954	76.72011	0
28	Optimized	597.47355	570.73805	0	167.71646	89.176423	0
29	Optimized	598.47485	570.2704	0	191.09813	101.60868	0
30	Optimized	599.12945	569.9647	0	208.39574	67.711882	19
31	Optimized	599.8027	569.7277	0	228.93976	74.387038	19
32	Optimized	600.84135	569.3975	0	236.67477	76.900295	19
33	Optimized	601.88	569.0673	0	244.40978	79.413552	19
34	Optimized	602.9186	568.7371	0	252.15397	81.92979	19
35	Optimized	603.8901	568.4656	0	265.8002	86.36372	19
36	Optimized	604.79445	568.25285	0	265.87554	86.388201	19
37	Optimized	605.69875	568.0401	0	265.96165	86.41618	19
38	Optimized	606.6031	567.8273	0	266.04777	86.444159	19
39	Optimized	607.5075	567.6145	0	266.14464	86.475635	19
40	Optimized	608.41185	567.4017	0	266.23075	86.503614	19
41	Optimized	609.31615	567.18895	0	266.32762	86.53509	19
42	Optimized	610.2205	566.9762	0	266.4245	86.566566	19
43	Optimized	611.14025	566.7601	0	266.58007	86.617115	19
44	Optimized	612.0753	566.54065	0	266.64254	86.637413	19
45	Optimized	613.01035	566.3212	0	266.6946	86.654328	19
46	Optimized	613.9454	566.10175	0	266.75707	86.674625	19
47	Optimized	614.88045	565.8823	0	266.81954	86.694923	19
48	Optimized	615.8155	565.66285	0	266.88201	86.715221	19
49	Optimized	616.75055	565.4434	0	266.95489	86.738901	19
50	Optimized	617.6875	565.22365	0	267.04867	86.769374	19

51	Optimized	618.6263	565.00355	0	267.10053	86.786222	19
52	Optimized	619.5651	564.78345	0	267.15238	86.80307	19
53	Optimized	620.5039	564.56335	0	267.21461	86.823288	19
54	Optimized	621.44265	564.34325	0	267.27683	86.843507	19
55	Optimized	622.3814	564.12315	0	267.33906	86.863725	19
56	Optimized	623.3202	563.90305	0	267.40128	86.883943	19
57	Optimized	624.259	563.68295	0	267.47388	86.907531	19
58	Optimized	625.2069	563.46065	0	267.53021	86.925834	19
59	Optimized	626.1639	563.23615	0	267.61159	86.952277	19
60	Optimized	627.1209	563.01165	0	267.69298	86.97872	19
61	Optimized	628.0779	562.78715	0	267.78453	87.008469	19
62	Optimized	629.0349	562.56265	0	267.87609	87.038218	19
63	Optimized	629.99195	562.3381	0	267.96765	87.067967	19
64	Optimized	630.949	562.11355	0	268.0592	87.097715	19
65	Optimized	631.906	561.88905	0	268.15076	87.127464	19
66	Optimized	632.863	561.66455	0	268.24232	87.157213	19
67	Optimized	633.82	561.44005	0	268.34405	87.190267	19
68	Optimized	634.7836	561.2141	0	268.45495	87.2263	19
69	Optimized	635.7538	560.9867	0	268.53523	87.252385	19
70	Optimized	636.72405	560.75925	0	268.61551	87.278469	19
71	Optimized	637.6943	560.5318	0	268.69579	87.304553	19
72	Optimized	638.6645	560.3044	0	268.77607	87.330638	19
73	Optimized	639.597	560.08575	0	268.84306	87.352405	19
74	Optimized	640.49185	559.87585	0	268.94098	87.384221	19
75	Optimized	641.3867	559.666	0	269.02802	87.412502	19
76	Optimized	642.28155	559.45615	0	269.11506	87.440783	19
77	Optimized	643.1764	559.24625	0	269.2021	87.469063	19
78	Optimized	644.0858	559.033	0	269.30192	87.501498	19
79	Optimized	645.00975	558.81645	0	269.37568	87.525465	19
80	Optimized	645.9337	558.5999	0	269.44944	87.549431	19
81	Optimized	646.8577	558.3833	0	269.5232	87.573397	19
82	Optimized	647.78165	558.1667	0	269.59696	87.597364	19
83	Optimized	648.7056	557.95015	0	269.67073	87.62133	19
84	Optimized	649.6296	557.7336	0	269.74449	87.645297	19
85	Optimized	650.55355	557.517	0	269.80771	87.66584	19
86	Optimized	651.4775	557.3004	0	269.88147	87.689806	19

87	Optimized	652.4015	557.08385	0	269.9447	87.710349	19
88	Optimized	653.32545	556.8673	0	270.00792	87.730891	19
89	Optimized	654.2494	556.6507	0	270.07114	87.751434	19
90	Optimized	655.1734	556.4341	0	270.13437	87.771977	19
91	Optimized	656.09735	556.21755	0	270.18705	87.789096	19
92	Optimized	657.0213	556.001	0	270.25028	87.809638	19
93	Optimized	657.98575	555.81295	0	272.72817	88.614753	19
94	Optimized	658.99065	555.65345	0	264.99322	86.101516	19
95	Optimized	659.9955	555.49395	0	257.2681	83.591473	19
96	Optimized	661.00035	555.33445	0	249.53315	81.078236	19
97	Optimized	662.00525	555.17495	0	241.7982	78.564999	19
98	Optimized	662.5407	555.10135	0	260.13013	84.521402	19
99	Optimized	663.08555	555.20315	0	234.15887	124.50448	0
100	Optimized	664.1092	555.3944	0	176.13049	93.650241	0
101	Optimized	665.13285	555.58565	0	119.00475	63.275948	0
102	Optimized	666.15655	555.7769	0	62.770133	33.375471	0
103	Optimized	666.88465	555.95865	0	18.725136	9.9563317	0

Slices of Slip Surface: 921

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	921	570.34955	578.7097	0	5.1402689	2.7331295	0
2	921	571.45165	578.3589	0	15.316973	8.1441787	0
3	921	572.55375	578.01	0	25.282984	13.443201	0
4	921	573.65585	577.663	0	35.040805	18.631526	0
5	921	574.75795	577.318	0	44.589088	23.708438	0
6	921	575.86005	576.9749	0	53.93091	28.675573	0
7	921	576.96215	576.6337	0	63.065055	33.532284	0
8	921	578.06425	576.2944	0	71.992818	38.27926	0
9	921	579.16635	575.957	0	80.716477	42.917712	0
10	921	580.26845	575.62155	0	89.238116	47.448748	0
11	921	581.37055	575.288	0	97.550552	51.868548	0
12	921	582.47265	574.95635	0	105.66211	56.18154	0
13	921	583.57475	574.6266	0	113.57224	60.387431	0
14	921	584.67685	574.29875	0	121.27206	64.481501	0

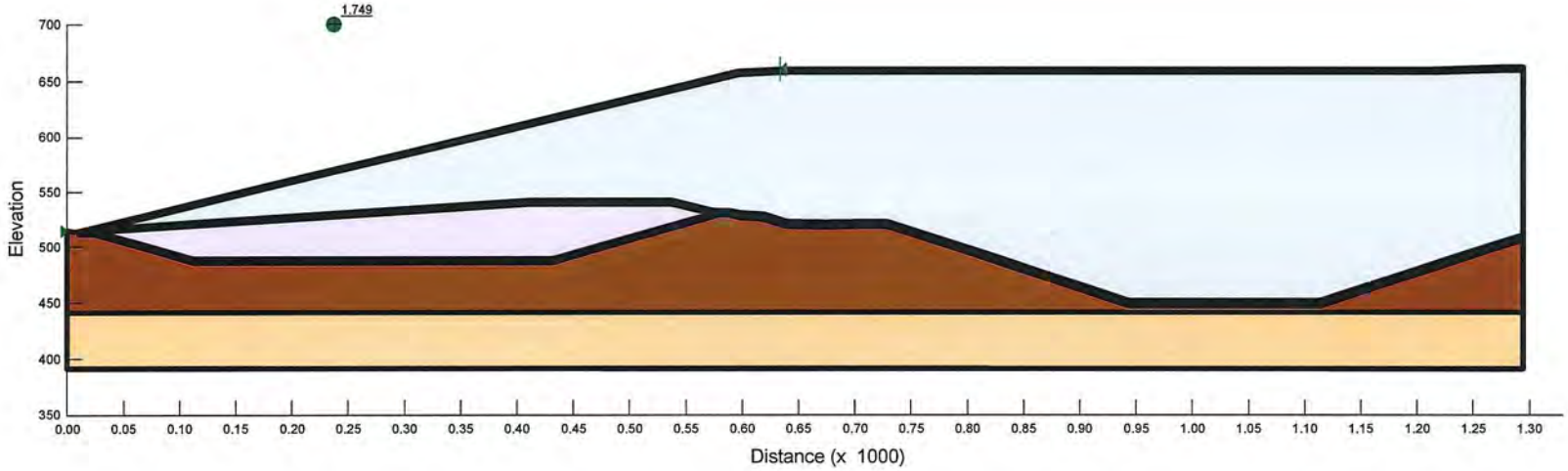
15	921	585.77895	573.9728	0	128.77864	68.472815	0
16	921	586.88105	573.6487	0	136.08268	72.356442	0
17	921	587.98315	573.3265	0	143.18406	76.132314	0
18	921	589.08525	573.00625	0	150.09116	79.804885	0
19	921	590.18735	572.68785	0	156.78609	83.364641	0
20	921	591.28945	572.3713	0	163.29464	86.825302	0
21	921	592.3916	572.05665	0	169.59921	90.177498	0
22	921	593.49375	571.7439	0	175.69945	93.421054	0
23	921	594.59585	571.43305	0	181.60347	96.560276	0
24	921	595.69795	571.12405	0	187.31141	99.595244	0
25	921	596.80005	570.8169	0	192.82249	102.52553	0
26	921	597.90215	570.51165	0	198.12813	105.3466	0
27	921	599.00425	570.20825	0	203.23628	108.06264	0
28	921	600.10635	569.9067	0	208.14713	110.67379	0
29	921	601.20845	569.607	0	212.86005	113.1797	0
30	921	602.31055	569.30915	0	217.37473	115.5802	0
31	921	603.41265	569.0132	0	221.69107	117.87523	0
32	921	604.52655	568.71595	0	227.34453	73.868714	19
33	921	605.65225	568.41745	0	230.64457	74.940964	19
34	921	606.778	568.1209	0	233.78337	75.960822	19
35	921	607.90375	567.82625	0	236.74371	76.922694	19
36	921	609.02945	567.53355	0	239.52513	77.826432	19
37	921	610.1552	567.24275	0	242.13598	78.674749	19
38	921	611.28095	566.95385	0	244.57623	79.467635	19
39	921	612.4067	566.6669	0	246.84545	80.204948	19
40	921	613.53245	566.38185	0	248.93478	80.883813	19
41	921	614.65815	566.09875	0	250.85304	81.507092	19
42	921	615.7839	565.81755	0	252.59935	82.074504	19
43	921	616.90965	565.5382	0	254.17393	82.586116	19
44	921	618.03535	565.2608	0	255.57656	83.041857	19
45	921	619.1611	564.9853	0	256.79817	83.438783	19
46	921	620.28685	564.7117	0	257.8474	83.779698	19
47	921	621.41255	564.44	0	258.72381	84.064462	19
48	921	622.5383	564.1702	0	259.42742	84.293079	19
49	921	623.66405	563.9023	0	259.9578	84.46541	19
50	921	624.78975	563.63625	0	260.30633	84.578654	19

51	921	625.9155	563.37215	0	260.48145	84.635554	19
52	921	627.04125	563.10995	0	260.48274	84.635972	19
53	921	628.16695	562.8496	0	260.31	84.579845	19
54	921	629.2927	562.5911	0	259.95483	84.464445	19
55	921	630.41845	562.3345	0	259.4166	84.289562	19
56	921	631.5442	562.0798	0	258.70376	84.057947	19
57	921	632.66995	561.82695	0	257.81637	83.769616	19
58	921	633.79565	561.576	0	256.74557	83.421691	19
59	921	634.9214	561.3269	0	255.49117	83.014113	19
60	921	636.04715	561.0797	0	254.06145	82.54957	19
61	921	637.17285	560.8344	0	252.44778	82.025257	19
62	921	638.2986	560.5909	0	250.64998	81.441117	19
63	921	639.42435	560.34925	0	248.67635	80.799845	19
64	921	640.55005	560.1095	0	246.50956	80.095812	19
65	921	641.6758	559.87165	0	244.16682	79.33461	19
66	921	642.80155	559.63565	0	241.63907	78.513292	19
67	921	643.92725	559.4015	0	238.91785	77.629117	19
68	921	645.053	559.1692	0	236.02	76.687547	19
69	921	646.17875	558.93875	0	232.93687	75.685776	19
70	921	647.307	558.70965	0	228.23918	121.35693	0
71	921	648.4378	558.48185	0	224.01163	119.10909	0
72	921	649.5686	558.25595	0	219.5551	116.73952	0
73	921	650.6994	558.03195	0	214.87828	114.25281	0
74	921	651.8302	557.80975	0	209.97234	111.64427	0
75	921	652.96105	557.58945	0	204.83709	108.91381	0
76	921	654.0919	557.371	0	199.48087	106.06586	0
77	921	655.2227	557.1544	0	193.89501	103.09581	0
78	921	656.3535	556.9397	0	188.08821	100.00828	0
79	921	657.4843	556.7268	0	182.05982	96.802921	0
80	921	658.6151	556.51575	0	175.80147	93.475302	0
81	921	659.7459	556.3066	0	169.33026	90.034498	0
82	921	660.8767	556.0993	0	162.6285	86.471109	0
83	921	662.0075	555.8938	0	155.7136	82.794391	0
84	921	663.1383	555.69015	0	148.57673	78.999649	0
85	921	664.2691	555.48835	0	141.21775	75.08681	0
86	921	665.3999	555.2884	0	133.64524	71.060437	0

87	921	666.53075	555.0903	0	125.85027	66.915775	0
88	921	667.6616	554.89405	0	117.84164	62.657512	0
89	921	668.7924	554.69965	0	109.61904	58.285475	0
90	921	669.9232	554.50705	0	101.18245	53.799664	0
91	921	671.054	554.31625	0	92.531787	49.200024	0
92	921	672.1848	554.1273	0	83.67304	44.489745	0
93	921	673.3156	553.94025	0	74.601756	39.666457	0
94	921	674.4464	553.755	0	65.321331	34.731968	0
95	921	675.5772	553.57155	0	55.832547	29.686692	0
96	921	676.708	553.38995	0	46.137066	24.531513	0
97	921	677.8388	553.2102	0	36.235682	19.266854	0
98	921	678.9696	553.03225	0	26.129167	13.893124	0
99	921	680.10045	552.8561	0	15.819251	8.4112447	0
100	921	681.2313	552.6818	0	5.30644	2.8214842	0

File Name: Section B-B' Full Height -Top Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 42
Last Edited By: Sonawane, Richa
Date: 10/24/2013
Time: 1:21:23 PM
File Name: Section B-B' Full Height -Top Liner.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\
Last Solved Date: 10/24/2013
Last Solved Time: 1:21:30 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 1 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 515) ft
Right Coordinate: (633.54244, 660.61701) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.749	(195.019, 1225.1)	39.08678	(396.62, 609.692)	(307.18, 587.635)
2	921	2.162	(195.019, 1225.1)	647.759	(398.831, 610.237)	(300.45, 585.976)

Slices of Slip Surface: Optimized

	Slip	X (ft)	Y (ft)	PWP	Base Normal	Frictional	Cohesive

	Surface			(psf)	Stress (psf)	Strength (psf)	Strength (psf)
1	Optimized	307.2989	587.61595	0	6.1552705	3.2728154	0
2	Optimized	307.9096	587.59845	0	26.095542	13.875246	0
3	Optimized	308.89395	587.60235	0	55.108648	29.301788	0
4	Optimized	309.8783	587.60625	0	84.408229	44.880651	0
5	Optimized	310.8627	587.61015	0	114.00038	60.615076	0
6	Optimized	311.8397	587.60575	0	145.5653	77.398444	0
7	Optimized	312.8093	587.5931	0	177.56595	94.413489	0
8	Optimized	313.7789	587.58045	0	209.87598	111.59304	0
9	Optimized	314.74845	587.56775	0	242.50571	128.94257	0
10	Optimized	315.32585	587.58425	0	236.78017	76.93454	19
11	Optimized	315.8454	587.7124	0	236.72426	76.916375	19
12	Optimized	316.69915	587.92295	0	236.63328	76.886815	19
13	Optimized	317.5529	588.13345	0	236.54231	76.857254	19
14	Optimized	318.40665	588.344	0	236.45133	76.827694	19
15	Optimized	319.2604	588.55455	0	236.34898	76.794438	19
16	Optimized	320.11415	588.7651	0	236.24663	76.761183	19
17	Optimized	320.9679	588.97565	0	236.15565	76.731622	19
18	Optimized	321.8388	589.1904	0	236.05179	76.697875	19
19	Optimized	322.7268	589.4094	0	235.94245	76.662351	19
20	Optimized	323.61485	589.6284	0	235.84405	76.630378	19
21	Optimized	324.5029	589.8474	0	235.73472	76.594854	19
22	Optimized	325.39285	590.06685	0	235.62727	76.559941	19
23	Optimized	326.2847	590.2868	0	235.51841	76.524569	19
24	Optimized	327.17655	590.50675	0	235.40954	76.489196	19
25	Optimized	328.0684	590.7267	0	235.30068	76.453824	19
26	Optimized	328.9535	590.945	0	235.19183	76.418459	19
27	Optimized	329.83195	591.1616	0	235.08131	76.382547	19
28	Optimized	330.7104	591.37825	0	234.98183	76.350225	19
29	Optimized	331.5888	591.5949	0	234.8713	76.314313	19
30	Optimized	332.46725	591.8115	0	234.77183	76.281991	19
31	Optimized	333.3457	592.02815	0	234.6613	76.246079	19
32	Optimized	334.2241	592.2448	0	234.56183	76.213757	19
33	Optimized	335.10255	592.4614	0	234.4513	76.177845	19
34	Optimized	335.981	592.678	0	234.35182	76.145523	19

35	Optimized	336.8545	592.8934	0	234.25746	76.114863	19
36	Optimized	337.72305	593.1076	0	234.15685	76.082173	19
37	Optimized	338.59155	593.3218	0	234.05625	76.049484	19
38	Optimized	339.4601	593.536	0	233.96682	76.020427	19
39	Optimized	340.3287	593.7502	0	233.86621	75.987738	19
40	Optimized	341.19725	593.9644	0	233.77678	75.958681	19
41	Optimized	342.06575	594.1786	0	233.68735	75.929624	19
42	Optimized	342.9343	594.3928	0	233.59793	75.900567	19
43	Optimized	343.8029	594.607	0	233.5085	75.87151	19
44	Optimized	344.67145	594.8212	0	233.43025	75.846085	19
45	Optimized	345.54135	595.0357	0	233.34276	75.81766	19
46	Optimized	346.41265	595.25055	0	233.26476	75.792315	19
47	Optimized	347.28395	595.46545	0	233.18676	75.76697	19
48	Optimized	348.15525	595.68035	0	233.10875	75.741625	19
49	Optimized	349.0265	595.8952	0	233.03075	75.71628	19
50	Optimized	349.89775	596.11005	0	232.96389	75.694556	19
51	Optimized	350.76905	596.32495	0	232.89703	75.672832	19
52	Optimized	351.64035	596.5398	0	232.83017	75.651107	19
53	Optimized	352.51165	596.75465	0	232.76331	75.629383	19
54	Optimized	353.40775	596.97565	0	232.70383	75.610059	19
55	Optimized	354.3286	597.20275	0	232.64057	75.589505	19
56	Optimized	355.24945	597.42985	0	232.58786	75.572376	19
57	Optimized	356.17035	597.65695	0	232.53514	75.555247	19
58	Optimized	357.09125	597.88405	0	232.48242	75.538118	19
59	Optimized	358.0121	598.11115	0	232.42971	75.520989	19
60	Optimized	358.93295	598.33825	0	232.38753	75.507286	19
61	Optimized	359.85385	598.56535	0	232.34536	75.493583	19
62	Optimized	360.7747	598.79245	0	232.31373	75.483306	19
63	Optimized	361.69555	599.01955	0	232.2821	75.473029	19
64	Optimized	362.60915	599.24485	0	232.242	75.46	19
65	Optimized	363.5154	599.4683	0	232.22057	75.453038	19
66	Optimized	364.42165	599.69175	0	232.19915	75.446076	19
67	Optimized	365.32795	599.91525	0	232.17772	75.439114	19
68	Optimized	366.23425	600.13875	0	232.15629	75.432152	19
69	Optimized	367.1405	600.36225	0	232.14558	75.428671	19
70	Optimized	368.04675	600.58575	0	232.13487	75.42519	19

71	Optimized	368.58795	600.71925	0	232.13146	75.424082	19
72	Optimized	369.1357	600.94265	0	201.77532	107.28584	0
73	Optimized	370.0551	601.34595	0	183.86674	97.76368	0
74	Optimized	370.9745	601.74925	0	165.93824	88.230926	0
75	Optimized	371.89395	602.1526	0	147.97986	78.682285	0
76	Optimized	372.8134	602.55595	0	130.00155	69.123052	0
77	Optimized	373.7328	602.95925	0	111.99337	59.547931	0
78	Optimized	374.6522	603.3626	0	93.942358	49.950038	0
79	Optimized	375.5716	603.76595	0	75.85748	40.334138	0
80	Optimized	376.4649	604.11595	0	65.32664	34.73479	0
81	Optimized	377.33215	604.41265	0	56.415238	29.996514	0
82	Optimized	378.1994	604.70935	0	47.498381	25.255337	0
83	Optimized	379.0666	605.00605	0	38.574979	20.51068	0
84	Optimized	379.9338	605.30275	0	29.643939	15.761962	0
85	Optimized	380.80105	605.59945	0	20.707444	11.010343	0
86	Optimized	381.6683	605.89615	0	11.763312	6.2546639	0
87	Optimized	382.52485	606.154	0	6.9619355	3.7017268	0
88	Optimized	383.37075	606.37305	0	5.7893291	3.0782409	0
89	Optimized	384.2166	606.5921	0	4.6178672	2.4553635	0
90	Optimized	385.06245	606.81115	0	3.4476642	1.8331556	0
91	Optimized	385.90835	607.0302	0	2.2786056	1.2115561	0
92	Optimized	386.76	607.24605	0	1.630239	0.86681346	0
93	Optimized	387.6174	607.45875	0	1.4874898	0.79091236	0
94	Optimized	388.47475	607.67145	0	1.3448538	0.71507145	0
95	Optimized	389.3321	607.88415	0	1.2024442	0.63935092	0
96	Optimized	390.1895	608.09685	0	1.0602044	0.56372068	0
97	Optimized	391.0469	608.30955	0	0.91817968	0.4882048	0
98	Optimized	391.90425	608.52225	0	0.77635874	0.41279726	0
99	Optimized	392.7616	608.73495	0	0.63474156	0.33749807	0
100	Optimized	393.619	608.94765	0	0.49331682	0.26230121	0
101	Optimized	394.4764	609.16035	0	0.35210718	0.18721871	0
102	Optimized	395.3338	609.37305	0	0.21111261	0.11225057	0
103	Optimized	396.19115	609.58575	0	0.07032408	0.037391977	0

Slices of Slip Surface: 921

	Slip	X (ft)	Y (ft)	PWP	Base Normal	Frictional	Cohesive

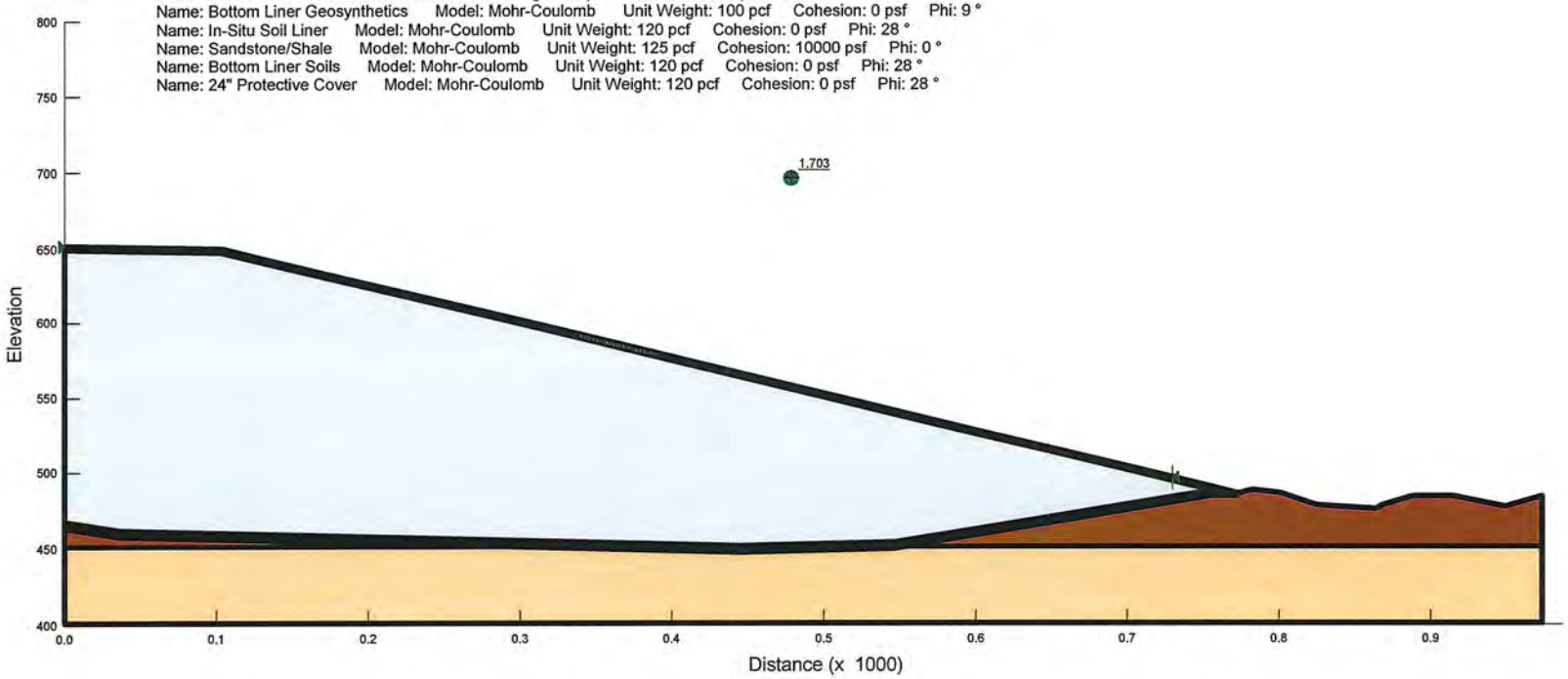
	Surface			(psf)	Stress (psf)	Strength (psf)	Strength (psf)
1	921	300.942	586.05715	0	4.5876776	2.4393114	0
2	921	301.9258	586.221	0	13.675294	7.2712826	0
3	921	302.9096	586.3864	0	22.585802	12.009084	0
4	921	303.8934	586.5534	0	31.319278	16.652756	0
5	921	304.87725	586.72195	0	39.874784	21.201799	0
6	921	305.8611	586.892	0	48.250392	25.655189	0
7	921	306.8449	587.06365	0	56.447189	30.013503	0
8	921	307.8287	587.2369	0	64.462247	34.275185	0
9	921	308.8125	587.41165	0	72.296646	38.440808	0
10	921	309.7963	587.588	0	79.948485	42.509364	0
11	921	310.7801	587.7659	0	87.41685	46.480364	0
12	921	311.76395	587.94535	0	94.701817	50.353849	0
13	921	312.7478	588.1264	0	101.80154	54.12884	0
14	921	313.7316	588.30905	0	108.71705	57.80588	0
15	921	314.7154	588.49325	0	115.44843	61.385021	0
16	921	315.6992	588.679	0	121.98593	64.861069	0
17	921	316.683	588.86635	0	128.33952	68.239335	0
18	921	317.6668	589.05525	0	134.50946	71.519946	0
19	921	318.6506	589.24575	0	140.48573	74.697589	0
20	921	319.63445	589.43785	0	146.27845	77.777633	0
21	921	320.6183	589.6315	0	151.87776	80.754835	0
22	921	321.6021	589.82675	0	157.28393	83.629347	0
23	921	322.5859	590.0236	0	162.50691	86.406459	0
24	921	323.5697	590.222	0	167.52692	89.075641	0
25	921	324.5535	590.422	0	172.36417	91.647654	0
26	921	325.5373	590.6236	0	177.01864	94.12248	0
27	921	326.52115	590.82675	0	181.47056	96.489606	0
28	921	327.505	591.0315	0	185.73021	98.754502	0
29	921	328.4888	591.2379	0	189.80751	100.92244	0
30	921	329.4726	591.44585	0	193.68272	102.98293	0
31	921	330.4564	591.6554	0	197.37588	104.94661	0
32	921	331.4402	591.86655	0	200.86746	106.80312	0
33	921	332.424	592.0793	0	204.17711	108.5629	0
34	921	333.4078	592.29365	0	207.28553	110.21567	0

35	921	334.39165	592.5096	0	210.20282	111.76682	0
36	921	335.3755	592.72715	0	212.93866	113.22149	0
37	921	336.3593	592.9463	0	215.4738	114.56945	0
38	921	337.3431	593.1671	0	217.82783	115.82111	0
39	921	338.3269	593.3895	0	219.98152	116.96625	0
40	921	339.3107	593.6135	0	221.9549	118.01551	0
41	921	340.2945	593.8391	0	223.72787	118.95822	0
42	921	341.27835	594.0663	0	225.32068	119.80513	0
43	921	342.2622	594.29515	0	226.71392	120.54593	0
44	921	343.246	594.5256	0	227.92736	121.19113	0
45	921	344.2298	594.75765	0	228.95131	121.73557	0
46	921	345.2136	594.99135	0	229.78595	122.17936	0
47	921	346.1974	595.22665	0	230.44139	122.52786	0
48	921	347.1812	595.4636	0	230.89805	122.77067	0
49	921	348.165	595.7022	0	231.17591	122.91841	0
50	921	349.14885	595.9424	0	231.26552	122.96606	0
51	921	350.1327	596.1842	0	231.17651	122.91873	0
52	921	351.1165	596.42765	0	230.89968	122.77154	0
53	921	352.1003	596.67275	0	230.43501	122.52447	0
54	921	353.0841	596.9195	0	229.78252	122.17753	0
55	921	354.0679	597.1679	0	228.96258	121.74156	0
56	921	355.0517	597.4179	0	227.94562	121.20084	0
57	921	356.03555	597.66955	0	226.75159	120.56596	0
58	921	357.0194	597.92285	0	225.38047	119.83692	0
59	921	358.0032	598.1778	0	223.82311	119.00886	0
60	921	358.987	598.4344	0	222.08936	118.08701	0
61	921	359.9708	598.69265	0	220.16962	117.06626	0
62	921	360.9546	598.95255	0	218.07374	115.95186	0
63	921	361.9384	599.2141	0	215.79258	114.73895	0
64	921	362.9222	599.4773	0	213.33598	113.43275	0
65	921	363.90605	599.74215	0	210.70398	112.03329	0
66	921	364.8899	600.0087	0	207.88744	110.53571	0
67	921	365.8737	600.2769	0	204.89601	108.94514	0
68	921	366.8575	600.54675	0	201.73035	107.26193	0
69	921	367.8413	600.81825	0	198.38051	105.48079	0
70	921	368.8251	601.09145	0	194.85676	103.60718	0

71	921	369.8089	601.3663	0	191.14957	101.63603	0
72	921	370.79275	601.6428	0	187.25921	99.567489	0
73	921	371.7766	601.92105	0	183.20535	97.41201	0
74	921	372.7604	602.20095	0	178.95926	95.154328	0
75	921	373.7442	602.4825	0	174.54045	92.804801	0
76	921	374.728	602.76575	0	169.93958	90.358478	0
77	921	375.7118	603.0507	0	165.16672	87.820702	0
78	921	376.6956	603.33735	0	160.20262	85.181246	0
79	921	377.6794	603.62565	0	155.06696	82.450564	0
80	921	378.66325	603.91565	0	149.75056	79.623786	0
81	921	379.6471	604.20735	0	144.25344	76.700915	0
82	921	380.6309	604.50075	0	138.57591	73.682119	0
83	921	381.6147	604.79585	0	132.71855	70.567707	0
84	921	382.5985	605.09265	0	126.67169	67.352531	0
85	921	383.5823	605.39115	0	120.44549	64.042003	0
86	921	384.5661	605.69135	0	114.04028	60.636292	0
87	921	385.54995	605.99325	0	107.44655	57.130345	0
88	921	386.5338	606.29685	0	100.66475	53.524399	0
89	921	387.5176	606.6022	0	93.702899	49.822715	0
90	921	388.5014	606.90925	0	86.55277	46.020924	0
91	921	389.4852	607.21805	0	79.214458	42.119075	0
92	921	390.469	607.52855	0	71.687592	38.116969	0
93	921	391.4528	607.84075	0	63.971407	34.014201	0
94	921	392.4366	608.1547	0	56.065312	29.810455	0
95	921	393.42045	608.4704	0	47.968812	25.50547	0
96	921	394.4043	608.78785	0	39.679232	21.097822	0
97	921	395.3881	609.107	0	31.197079	16.587781	0
98	921	396.3719	609.42785	0	22.520703	11.97447	0
99	921	397.3557	609.75045	0	13.64961	7.2576263	0
100	921	398.3395	610.07485	0	4.582698	2.4366637	0

File Name: Section C-C'-Top Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis (2)

File Information

Created By: Bhatnagar, Richa
Revision Number: 505
Last Edited By: Sonawane, Richa
Date: 10/24/2013
Time: 2:52:51 PM
File Name: Section C-C'-Top Liner.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section C-C'\
Last Solved Date: 10/24/2013
Last Solved Time: 2:53:10 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis (2)

Description: Modelfill Slope Analysis
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °

Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 652) ft
Right Coordinate: (730.08996, 496.36676) ft

Seismic Loads

Horz Seismic Load: 0

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.703	(522.767, 1249.39)	36.83232	(311.345, 599.08)	(395.264, 578.495)
2	701	2.004	(522.767, 1249.39)	684.056	(308.279, 599.832)	(412.338, 574.307)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength

							(psf)
1	Optimized	311.7628	598.97695	0	0.019887321	0.010574276	0
2	Optimized	312.5984	598.77165	0	0.059709614	0.031748165	0
3	Optimized	313.434	598.5663	0	0.099601638	0.05295913	0
4	Optimized	314.2696	598.36095	0	0.13956688	0.074209026	0
5	Optimized	315.10515	598.15565	0	0.17959255	0.095491055	0
6	Optimized	315.9407	597.95035	0	0.21969958	0.11681634	0
7	Optimized	316.7763	597.74505	0	0.25986472	0.13817252	0
8	Optimized	317.6119	597.53975	0	0.30008797	0.1595596	0
9	Optimized	318.4475	597.3344	0	0.34039257	0.18098994	0
10	Optimized	319.2831	597.12905	0	0.38075527	0.20245117	0
11	Optimized	320.1187	596.92375	0	0.42117609	0.2239433	0
12	Optimized	320.96925	596.7146	0	0.48230727	0.25644732	0
13	Optimized	321.8347	596.5016	0	0.56435796	0.30007445	0
14	Optimized	322.7001	596.2886	0	0.64652085	0.34376123	0
15	Optimized	323.56555	596.0756	0	0.72880715	0.38751364	0
16	Optimized	324.431	595.86255	0	0.81120566	0.4313257	0
17	Optimized	325.29645	595.6495	0	0.89371636	0.47519742	0
18	Optimized	326.16195	595.4365	0	0.97631682	0.51911686	0
19	Optimized	327.0274	595.2235	0	1.0590183	0.56309	0
20	Optimized	327.8928	595.0105	0	1.1418431	0.60712876	0
21	Optimized	328.75825	594.7975	0	1.2246455	0.65115559	0
22	Optimized	329.6091	594.5504	0	5.3297238	2.8338644	0
23	Optimized	330.44535	594.2692	0	13.557234	7.2085093	0
24	Optimized	331.2816	593.98795	0	21.780437	11.580864	0
25	Optimized	332.11785	593.7067	0	30.001374	15.952013	0
26	Optimized	332.9541	593.4255	0	38.21891	20.321355	0
27	Optimized	333.85015	593.0768	0	49.741451	26.447999	0
28	Optimized	334.806	592.66055	0	68.397613	36.367656	0
29	Optimized	335.72335	592.2142	0	86.704416	46.101556	0
30	Optimized	336.60225	591.7378	0	112.04543	59.575611	0
31	Optimized	337.4811	591.26145	0	137.32342	73.016158	0
32	Optimized	338.35995	590.7851	0	162.5514	86.430112	0
33	Optimized	339.23885	590.3087	0	187.71936	99.812153	0
34	Optimized	339.7179	590.04905	0	204.32243	66.388383	19
35	Optimized	340.15615	589.88915	0	227.2409	73.835044	19

36	Optimized	340.9534	589.6122	0	234.44474	76.175713	19
37	Optimized	341.75065	589.33525	0	241.66043	78.520233	19
38	Optimized	342.54795	589.05835	0	248.87612	80.864753	19
39	Optimized	343.3452	588.7814	0	256.10366	83.213122	19
40	Optimized	344.14245	588.50445	0	263.34304	85.565341	19
41	Optimized	344.9581	588.26355	0	280.24042	91.055634	19
42	Optimized	345.7921	588.0586	0	280.34522	91.089684	19
43	Optimized	346.6261	587.85365	0	280.45002	91.123735	19
44	Optimized	347.4601	587.6487	0	280.56646	91.161569	19
45	Optimized	348.29405	587.44375	0	280.6829	91.199404	19
46	Optimized	349.128	587.23885	0	280.79934	91.237238	19
47	Optimized	349.962	587.0339	0	280.92743	91.278855	19
48	Optimized	350.796	586.82895	0	281.05552	91.320473	19
49	Optimized	351.6354	586.6229	0	281.23756	91.379621	19
50	Optimized	352.48025	586.4157	0	281.34102	91.413239	19
51	Optimized	353.3251	586.2085	0	281.44448	91.446856	19
52	Optimized	354.1699	586.00125	0	281.55944	91.484209	19
53	Optimized	355.0147	585.794	0	281.6744	91.521561	19
54	Optimized	355.85955	585.5868	0	281.78936	91.558914	19
55	Optimized	356.7044	585.3796	0	281.90432	91.596267	19
56	Optimized	357.5338	585.1762	0	282.02619	91.635863	19
57	Optimized	358.34775	584.9766	0	282.14551	91.674633	19
58	Optimized	359.1617	584.777	0	282.26483	91.713403	19
59	Optimized	359.97565	584.5774	0	282.39608	91.756049	19
60	Optimized	360.7896	584.37775	0	282.5154	91.794819	19
61	Optimized	361.6036	584.1781	0	282.64666	91.837465	19
62	Optimized	362.41755	583.9785	0	282.76598	91.876235	19
63	Optimized	363.2315	583.7789	0	282.89723	91.918882	19
64	Optimized	364.04545	583.5793	0	283.02848	91.961528	19
65	Optimized	364.8594	583.3797	0	283.17167	92.008052	19
66	Optimized	365.68985	583.176	0	283.2907	92.046728	19
67	Optimized	366.5368	582.9682	0	283.45124	92.09889	19
68	Optimized	367.38375	582.7604	0	283.60031	92.147325	19
69	Optimized	368.2307	582.5526	0	283.76084	92.199487	19
70	Optimized	369.0777	582.34475	0	283.92138	92.251649	19
71	Optimized	369.92465	582.1369	0	284.07045	92.300085	19

72	Optimized	370.77155	581.9291	0	284.23099	92.352246	19
73	Optimized	371.6185	581.7213	0	284.39153	92.404408	19
74	Optimized	372.45235	581.5169	0	284.58238	92.466421	19
75	Optimized	373.273	581.3159	0	284.70074	92.504876	19
76	Optimized	374.09365	581.1149	0	284.81909	92.543332	19
77	Optimized	374.91435	580.9139	0	284.93744	92.581788	19
78	Optimized	375.735	580.7129	0	285.0558	92.620243	19
79	Optimized	376.55565	580.5119	0	285.17415	92.658699	19
80	Optimized	377.37635	580.31085	0	285.29251	92.697154	19
81	Optimized	378.197	580.1098	0	285.41086	92.73561	19
82	Optimized	379.01765	579.9088	0	285.52921	92.774065	19
83	Optimized	379.8383	579.7078	0	285.63573	92.808675	19
84	Optimized	380.65895	579.5068	0	285.74225	92.843285	19
85	Optimized	381.47965	579.3058	0	285.86061	92.881741	19
86	Optimized	382.3003	579.1048	0	285.96712	92.916351	19
87	Optimized	383.12095	578.9038	0	286.07364	92.950961	19
88	Optimized	383.99145	578.7415	0	292.00817	94.879207	19
89	Optimized	384.91175	578.6179	0	281.52969	91.474543	19
90	Optimized	385.83205	578.4943	0	271.06198	88.073378	19
91	Optimized	386.75235	578.3707	0	260.58351	84.668714	19
92	Optimized	387.6892	578.24485	0	249.85981	81.184375	19
93	Optimized	388.6346	578.20465	0	243.55091	129.49832	0
94	Optimized	389.572	578.25235	0	207.0822	110.10756	0
95	Optimized	390.4666	578.2906	0	172.4501	91.693347	0
96	Optimized	391.3184	578.31945	0	142.05017	75.529416	0
97	Optimized	392.1702	578.3483	0	111.95412	59.527061	0
98	Optimized	393.02205	578.3771	0	82.154911	43.682541	0
99	Optimized	393.8739	578.40595	0	52.653717	27.996478	0
100	Optimized	394.7257	578.4348	0	23.449366	12.468249	0
101	Optimized	395.208	578.4722	0	5.0716158	2.6966259	0

Slices of Slip Surface: 701

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	701	308.79315	599.66225	0	4.7710943	2.5368359	0

2	701	309.8223	599.32425	0	14.214732	7.5581069	0
3	701	310.85145	598.98805	0	23.458958	12.473349	0
4	701	311.8806	598.6536	0	32.506505	17.284015	0
5	701	312.90975	598.32095	0	41.357006	21.98991	0
6	701	313.9389	597.99015	0	50.01189	26.591794	0
7	701	314.96805	597.66115	0	58.471688	31.089948	0
8	701	315.9972	597.3339	0	66.736998	35.484691	0
9	701	317.02635	597.0084	0	74.809312	39.776817	0
10	701	318.0555	596.68475	0	82.688196	43.966094	0
11	701	319.08465	596.3629	0	90.376142	48.053847	0
12	701	320.1138	596.04275	0	97.872712	52.039844	0
13	701	321.143	595.7244	0	105.18135	55.925917	0
14	701	322.17215	595.40785	0	112.29233	59.706892	0
15	701	323.2013	595.09305	0	119.22398	63.392517	0
16	701	324.23045	594.78005	0	125.95728	66.972673	0
17	701	325.2596	594.4688	0	132.51071	70.457193	0
18	701	326.28875	594.1593	0	138.87428	73.840765	0
19	701	327.3179	593.8516	0	145.04805	77.123415	0
20	701	328.34705	593.54565	0	151.04074	80.309786	0
21	701	329.3762	593.24145	0	156.84272	83.394751	0
22	701	330.40535	592.939	0	162.46327	86.383254	0
23	701	331.4345	592.6383	0	167.89249	89.270018	0
24	701	332.46365	592.33935	0	173.13937	92.059834	0
25	701	333.4928	592.04215	0	178.20394	94.752713	0
26	701	334.52195	591.7467	0	183.08558	97.348329	0
27	701	335.5511	591.45295	0	187.77482	99.841645	0
28	701	336.58025	591.16095	0	192.28054	102.23738	0
29	701	337.6094	590.87075	0	196.60281	104.53557	0
30	701	338.63855	590.58225	0	200.74098	106.73587	0
31	701	339.6677	590.29545	0	204.69495	108.83824	0
32	701	340.69685	590.01045	0	208.46446	110.84252	0
33	701	341.726	589.72715	0	212.03966	112.74349	0
34	701	342.75515	589.44555	0	215.43942	114.55117	0
35	701	343.7843	589.1657	0	218.6537	116.26023	0
36	701	344.81345	588.88755	0	221.68243	117.87064	0
37	701	345.8426	588.61115	0	224.51598	119.37726	0

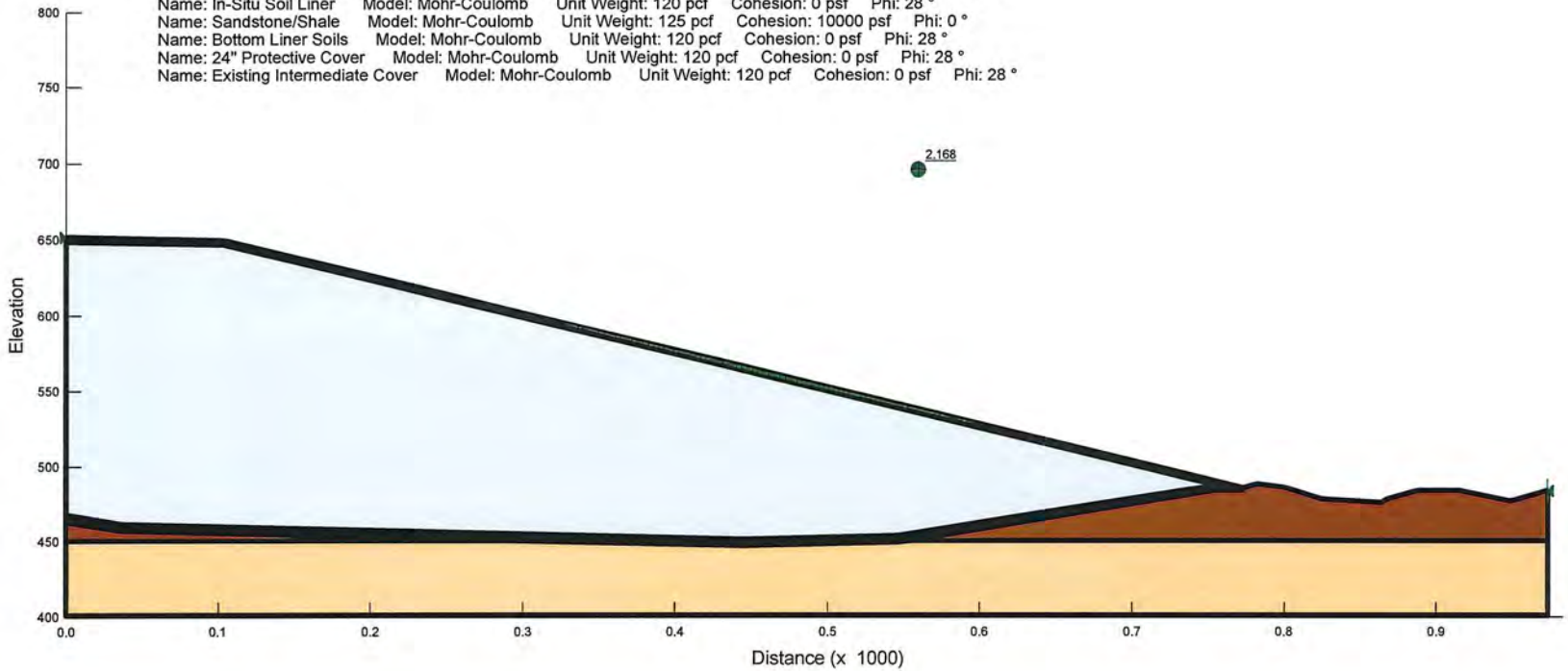
38	701	346.87175	588.33645	0	227.17264	120.78983	0
39	701	347.9009	588.06345	0	229.64319	122.10345	0
40	701	348.9344	587.79105	0	233.26661	75.792916	19
41	701	349.97225	587.51925	0	235.01267	76.360247	19
42	701	351.0101	587.2492	0	236.59163	76.873282	19
43	701	352.0479	586.98085	0	238.0217	77.33794	19
44	701	353.08575	586.7142	0	239.29358	77.751198	19
45	701	354.1236	586.4493	0	240.40706	78.11299	19
46	701	355.16145	586.18615	0	241.36195	78.423251	19
47	701	356.1993	585.92475	0	242.16739	78.684953	19
48	701	357.2371	585.6651	0	242.80449	78.891963	19
49	701	358.27495	585.4071	0	243.29155	79.050216	19
50	701	359.3128	585.15085	0	243.62882	79.159804	19
51	701	360.3506	584.89635	0	243.79697	79.214437	19
52	701	361.38845	584.6435	0	243.81474	79.220212	19
53	701	362.4263	584.3924	0	243.66347	79.17106	19
54	701	363.46415	584.14305	0	243.36124	79.072859	19
55	701	364.502	583.8954	0	242.88936	78.919538	19
56	701	365.5398	583.64945	0	242.26642	78.717131	19
57	701	366.57765	583.4052	0	241.48286	78.462536	19
58	701	367.6155	583.16265	0	240.52912	78.15265	19
59	701	368.6533	582.9218	0	239.42382	77.793515	19
60	701	369.69115	582.68265	0	238.14801	77.378978	19
61	701	370.729	582.4452	0	236.71113	76.912108	19
62	701	371.7747	582.2077	0	233.83909	124.33445	0
63	701	372.8283	581.97015	0	231.63488	123.16245	0
64	701	373.8819	581.7343	0	229.2154	121.87599	0
65	701	374.9355	581.5002	0	226.58991	120.47999	0
66	701	375.98905	581.2679	0	223.7578	118.97413	0
67	701	377.0426	581.0373	0	220.71909	117.35842	0
68	701	378.0962	580.80845	0	217.46431	115.62782	0
69	701	379.1498	580.58135	0	214.00255	113.78717	0
70	701	380.2034	580.35595	0	210.33362	111.83637	0
71	701	381.257	580.1323	0	206.45735	109.77532	0
72	701	382.3106	579.9104	0	202.36428	107.59899	0
73	701	383.36415	579.69025	0	198.0635	105.31223	0

74	701	384.4177	579.4718	0	193.56416	102.91989	0
75	701	385.4713	579.25505	0	188.84749	100.41199	0
76	701	386.5249	579.04005	0	183.92263	97.793396	0
77	701	387.5785	578.8268	0	178.78941	95.064017	0
78	701	388.6321	578.61525	0	173.44769	92.223771	0
79	701	389.6857	578.40545	0	167.90661	89.277528	0
80	701	390.7393	578.19735	0	162.14741	86.215309	0
81	701	391.79285	577.99095	0	156.18857	83.046938	0
82	701	392.8464	577.7863	0	150.02996	79.772344	0
83	701	393.9	577.58335	0	143.66212	76.386502	0
84	701	394.9536	577.3821	0	137.08504	72.889407	0
85	701	396.0072	577.18255	0	130.30765	69.285807	0
86	701	397.0608	576.9847	0	123.32997	65.575711	0
87	701	398.1144	576.7886	0	116.152	61.759112	0
88	701	399.16795	576.5942	0	108.77348	57.835885	0
89	701	400.2215	576.4015	0	101.19422	53.80592	0
90	701	401.2751	576.2105	0	93.414297	49.669263	0
91	701	402.3287	576.0212	0	85.43538	45.426797	0
92	701	403.3823	575.8336	0	77.262039	41.080955	0
93	701	404.4359	575.6477	0	68.89231	36.630691	0
94	701	405.4895	575.4635	0	60.327093	32.076484	0
95	701	406.54305	575.281	0	51.568985	27.419715	0
96	701	407.5966	575.1002	0	42.61707	22.659898	0
97	701	408.6502	574.9211	0	33.474021	17.798453	0
98	701	409.7038	574.7437	0	24.139761	12.835339	0
99	701	410.7574	574.56795	0	14.616091	7.7715135	0
100	701	411.811	574.3939	0	4.9032242	2.6070906	0

ALTERNATE FINAL COVER SECTION
WITH CORRESPONDING ANALYSIS

File Name: Section C-C'-Top Liner (Alternate Liner).gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Existing Intermediate Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis (2)

File Information

Created By: Bhatnagar, Richa
Revision Number: 511
Last Edited By: Sonawane, Richa
Date: 10/28/2013
Time: 1:28:48 PM
File Name: Section C-C'-Top Liner (Alternate Liner).gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section C-C'\
Last Solved Date: 10/28/2013
Last Solved Time: 1:28:56 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis (2)

Description: Modelfill Slope Analysis
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 2 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °

Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Existing Intermediate Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 652) ft
Right Coordinate: (973.2554, 484.3421) ft

Seismic Loads

Horz Seismic Load: 0

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	2.168	(1277.34, 3946.93)	152.7468	(279.96, 606.778)	(634.662, 519.774)
2	791	2.169	(1277.34, 3946.93)	3483.615	(332.528, 593.884)	(563.346, 537.267)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength

							(psf)
1	Optimized	281.73465	606.31865	0	2.7060916	1.4388544	0
2	Optimized	285.2831	605.4003	0	8.1170744	4.315925	0
3	Optimized	288.83155	604.4819	0	13.526093	7.1919512	0
4	Optimized	292.38	603.56355	0	18.933474	10.067107	0
5	Optimized	295.92845	602.6452	0	24.338946	12.941247	0
6	Optimized	299.4769	601.72685	0	29.743327	15.814807	0
7	Optimized	303.02535	600.8085	0	35.145252	18.687062	0
8	Optimized	306.5738	599.89015	0	40.544449	21.557866	0
9	Optimized	310.12225	598.9718	0	45.943645	24.42867	0
10	Optimized	313.6707	598.0534	0	51.340114	27.298023	0
11	Optimized	317.21915	597.13505	0	56.736582	30.167376	0
12	Optimized	320.7676	596.2167	0	62.130323	33.035279	0
13	Optimized	324.31605	595.29835	0	67.521335	35.901731	0
14	Optimized	327.8645	594.38	0	72.912347	38.768183	0
15	Optimized	331.28375	593.49785	0	77.83762	41.386997	0
16	Optimized	334.5738	592.65195	0	82.206088	43.709752	0
17	Optimized	337.86385	591.8061	0	86.574556	46.032508	0
18	Optimized	341.15395	590.96025	0	90.94008	48.353698	0
19	Optimized	344.5817	590.0778	0	95.59867	50.830714	0
20	Optimized	348.1471	589.15875	0	100.5933	53.486406	0
21	Optimized	351.7125	588.2397	0	105.58793	56.142097	0
22	Optimized	355.27795	587.3207	0	110.58256	58.797789	0
23	Optimized	358.8434	586.4017	0	115.57719	61.45348	0
24	Optimized	362.4088	585.48265	0	120.57182	64.109172	0
25	Optimized	365.9742	584.5636	0	125.56373	66.763419	0
26	Optimized	369.61385	583.6273	0	130.506	69.391273	0
27	Optimized	373.3278	582.67375	0	135.28643	71.933073	0
28	Optimized	377.04175	581.72025	0	140.06686	74.474872	0
29	Optimized	380.75565	580.7667	0	144.8499	77.018059	0
30	Optimized	384.2664	579.86875	0	149.11703	79.286934	0
31	Optimized	387.574	579.0265	0	152.60061	81.139185	0
32	Optimized	390.8816	578.18425	0	156.08419	82.991436	0
33	Optimized	394.1892	577.34195	0	159.56777	84.843687	0
34	Optimized	397.6002	576.4739	0	163.12116	86.733057	0
35	Optimized	401.11465	575.5801	0	166.69778	88.634783	0

36	Optimized	404.6291	574.6863	0	170.27441	90.536508	0
37	Optimized	408.14355	573.7925	0	173.85103	92.438234	0
38	Optimized	411.658	572.89865	0	177.42766	94.33996	0
39	Optimized	415.17245	572.0048	0	181.00704	96.243151	0
40	Optimized	418.6869	571.111	0	184.58918	98.14781	0
41	Optimized	422.20135	570.2172	0	188.16857	100.051	0
42	Optimized	425.7158	569.3234	0	191.75346	101.95713	0
43	Optimized	429.11475	568.46055	0	195.12885	103.75185	0
44	Optimized	432.39825	567.6287	0	198.11652	105.34042	0
45	Optimized	435.6818	566.79685	0	201.1042	106.929	0
46	Optimized	438.96535	565.965	0	204.09483	108.51914	0
47	Optimized	442.24885	565.1332	0	207.08545	110.10929	0
48	Optimized	445.53235	564.30135	0	210.07608	111.69943	0
49	Optimized	448.9422	563.4394	0	213.08128	113.29733	0
50	Optimized	452.47845	562.5474	0	215.87261	114.7815	0
51	Optimized	456.0147	561.65535	0	218.66668	116.26714	0
52	Optimized	459.55095	560.7633	0	221.46075	117.75277	0
53	Optimized	463.0872	559.8713	0	224.25481	119.2384	0
54	Optimized	466.7497	558.97735	0	225.53757	119.92045	0
55	Optimized	470.5385	558.0815	0	221.74642	117.90466	0
56	Optimized	474.3273	557.18565	0	217.9527	115.8875	0
57	Optimized	478.1161	556.28975	0	214.15898	113.87035	0
58	Optimized	481.711	555.44065	0	210.50436	111.92715	0
59	Optimized	485.112	554.6384	0	206.87847	109.99924	0
60	Optimized	488.51295	553.83615	0	203.24973	108.0698	0
61	Optimized	491.9139	553.0339	0	199.61812	106.13884	0
62	Optimized	495.3149	552.23165	0	195.98652	104.20788	0
63	Optimized	498.73445	551.42255	0	192.47972	102.34328	0
64	Optimized	502.17255	550.60665	0	189.36955	100.68958	0
65	Optimized	505.6106	549.7907	0	186.25938	99.035869	0
66	Optimized	509.04865	548.97475	0	183.14638	97.380657	0
67	Optimized	512.5407	548.15095	0	179.6579	95.525799	0
68	Optimized	516.08665	547.3192	0	175.32535	93.222144	0
69	Optimized	519.6326	546.48745	0	170.99006	90.917028	0
70	Optimized	523.17855	545.6557	0	166.65477	88.611913	0
71	Optimized	526.7245	544.82395	0	162.31948	86.306797	0

72	Optimized	530.1986	544.0035	0	158.47403	84.262136	0
73	Optimized	533.6008	543.19435	0	155.59164	82.729544	0
74	Optimized	537.003	542.3852	0	152.7064	81.195432	0
75	Optimized	540.4052	541.576	0	149.82401	79.66284	0
76	Optimized	543.84795	540.76575	0	146.23463	77.754332	0
77	Optimized	547.3313	539.9544	0	141.31932	75.140816	0
78	Optimized	550.81465	539.143	0	136.40401	72.5273	0
79	Optimized	554.29795	538.33165	0	131.48591	69.912297	0
80	Optimized	557.7813	537.5203	0	126.5706	67.298781	0
81	Optimized	561.26465	536.70895	0	121.65529	64.685265	0
82	Optimized	564.748	535.8976	0	116.73998	62.071749	0
83	Optimized	568.23135	535.08625	0	111.82467	59.458233	0
84	Optimized	571.7699	534.26655	0	106.42307	56.586152	0
85	Optimized	575.36375	533.4384	0	100.32494	53.343719	0
86	Optimized	578.9576	532.61025	0	94.232238	50.10417	0
87	Optimized	582.5514	531.7821	0	88.139531	46.86462	0
88	Optimized	586.14525	530.95395	0	82.046824	43.62507	0
89	Optimized	589.7391	530.1258	0	75.956829	40.386962	0
90	Optimized	593.3329	529.29765	0	69.869545	37.150296	0
91	Optimized	596.92675	528.46955	0	63.782261	33.91363	0
92	Optimized	600.5206	527.6414	0	57.697689	30.678405	0
93	Optimized	604.1144	526.81325	0	51.615828	27.444623	0
94	Optimized	607.70825	525.9851	0	45.533967	24.21084	0
95	Optimized	611.3021	525.15695	0	39.457529	20.979941	0
96	Optimized	614.8959	524.3288	0	33.381092	17.749041	0
97	Optimized	618.48975	523.50065	0	27.304654	14.518142	0
98	Optimized	622.0836	522.67255	0	21.234181	11.290414	0
99	Optimized	625.6774	521.8444	0	15.164251	8.0629752	0
100	Optimized	629.27125	521.01625	0	9.0970321	4.8369778	0
101	Optimized	632.8651	520.1881	0	3.0317114	1.6119895	0

Slices of Slip Surface: 791

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	791	333.68135	593.5591	0	4.677254	2.4869401	0

2	791	335.98885	592.9106	0	13.934334	7.4090168	0
3	791	338.29635	592.26385	0	22.998421	12.228477	0
4	791	340.60385	591.6188	0	31.869392	16.945256	0
5	791	342.91135	590.97545	0	40.547525	21.559501	0
6	791	345.21885	590.3338	0	49.034796	26.072263	0
7	791	347.52635	589.69385	0	57.326072	30.480813	0
8	791	349.83385	589.0556	0	65.432483	34.791069	0
9	791	352.14135	588.41905	0	73.3414	38.996314	0
10	791	354.44885	587.78425	0	81.065202	43.103132	0
11	791	356.7564	587.15115	0	88.595442	47.107032	0
12	791	359.06395	586.51975	0	95.936143	51.010152	0
13	791	361.37145	585.89005	0	103.08727	54.812472	0
14	791	363.67895	585.262	0	110.05275	58.516084	0
15	791	365.98645	584.6357	0	116.82424	62.116549	0
16	791	368.29395	584.0111	0	123.40989	65.618204	0
17	791	370.60145	583.3882	0	129.80965	69.021014	0
18	791	372.90895	582.767	0	136.01915	72.322664	0
19	791	375.21645	582.1475	0	142.03833	75.523121	0
20	791	377.52395	581.5297	0	147.8754	78.626744	0
21	791	379.83145	580.91355	0	153.52199	81.629088	0
22	791	382.139	580.29915	0	158.98198	84.532218	0
23	791	384.44655	579.68645	0	164.25546	87.336178	0
24	791	386.75405	579.0754	0	169.34219	90.040839	0
25	791	389.06155	578.46605	0	174.24212	92.646178	0
26	791	391.36905	577.8584	0	178.95926	95.154328	0
27	791	393.67655	577.25245	0	183.4852	97.560811	0
28	791	395.98405	576.64815	0	187.82821	99.87003	0
29	791	398.29155	576.04555	0	191.98391	102.07966	0
30	791	400.59905	575.44465	0	195.95647	104.1919	0
31	791	402.90655	574.8454	0	199.74159	106.20449	0
32	791	405.21405	574.2479	0	203.33908	108.11731	0
33	791	407.52155	573.6521	0	206.74892	109.93035	0
34	791	409.8291	573.0579	0	209.97521	111.6458	0
35	791	412.13665	572.4654	0	213.01774	113.26354	0
36	791	414.44415	571.8746	0	215.87231	114.78135	0
37	791	416.75165	571.2855	0	218.53882	116.19915	0

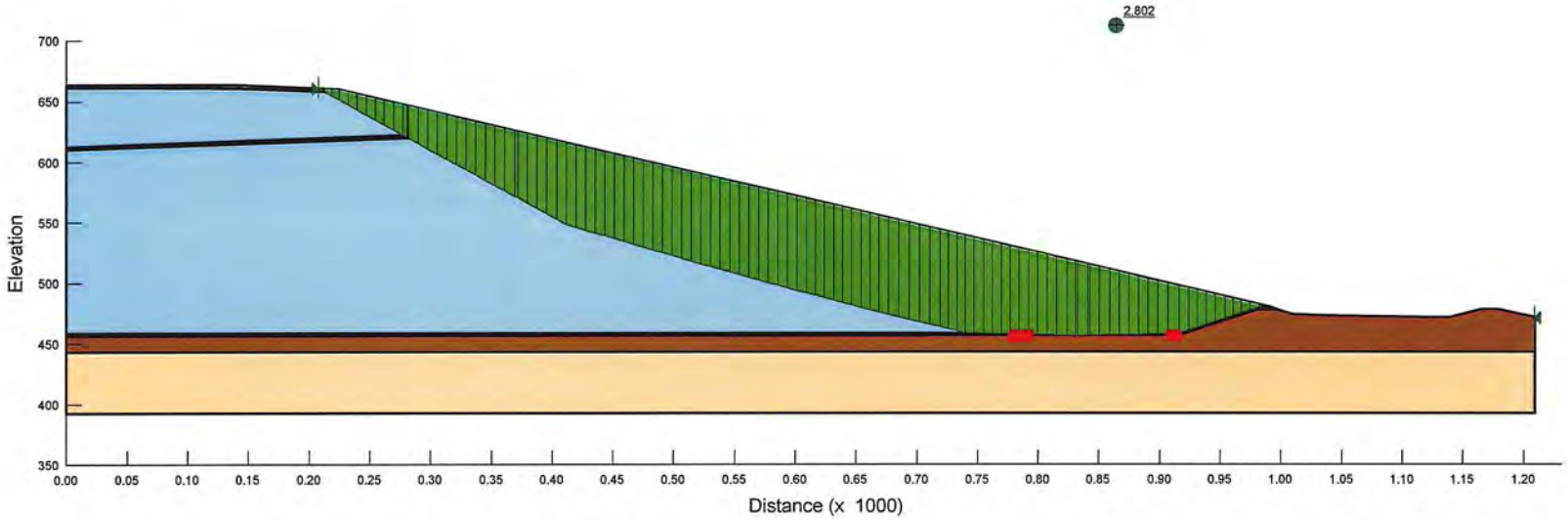
38	791	419.05915	570.6981	0	221.02128	117.5191	0
39	791	421.36665	570.1123	0	223.31546	118.73894	0
40	791	423.67415	569.5282	0	225.42548	119.86085	0
41	791	425.98165	568.9458	0	227.34694	120.88251	0
42	791	428.28915	568.36505	0	229.08403	121.80614	0
43	791	430.59665	567.786	0	230.63245	122.62945	0
44	791	432.90415	567.20865	0	231.99201	123.35234	0
45	791	435.17475	566.64215	0	233.14955	123.96781	0
46	791	437.40845	566.08645	0	234.10895	124.47793	0
47	791	439.64215	565.5323	0	234.89484	124.8958	0
48	791	441.8758	564.9797	0	235.50259	125.21895	0
49	791	444.10945	564.4287	0	235.93645	125.44963	0
50	791	446.34315	563.87925	0	236.18785	125.58331	0
51	791	448.57685	563.33135	0	236.26964	125.6268	0
52	791	450.81055	562.785	0	236.16859	125.57307	0
53	791	453.0442	562.24025	0	235.89342	125.42675	0
54	791	455.27785	561.69705	0	235.43968	125.1855	0
55	791	457.51155	561.1554	0	234.80719	124.8492	0
56	791	459.74525	560.61535	0	234.00043	124.42024	0
57	791	462.02665	560.06535	0	232.9873	123.88154	0
58	791	464.3558	559.5055	0	231.76502	123.23165	0
59	791	466.685	558.94735	0	230.346	122.47714	0
60	791	469.01415	558.3909	0	228.7342	121.62013	0
61	791	471.3433	557.8361	0	226.92965	120.66064	0
62	791	473.6725	557.283	0	224.92807	119.59638	0
63	791	476.0017	556.73165	0	222.73345	118.42948	0
64	791	478.33085	556.18195	0	220.3458	117.15994	0
65	791	480.66	555.6339	0	217.76083	115.78549	0
66	791	482.9892	555.08755	0	214.97838	114.30603	0
67	791	485.3184	554.54295	0	212.00263	112.7238	0
68	791	487.64755	554.00005	0	208.83347	111.03873	0
69	791	489.9767	553.45875	0	205.46656	109.24851	0
70	791	492.3059	552.91915	0	201.90198	107.35319	0
71	791	494.63505	552.38125	0	198.14775	105.35703	0
72	791	496.9642	551.84505	0	194.19149	103.25345	0
73	791	499.2934	551.31055	0	190.0455	101.04899	0

74	791	501.6226	550.7777	0	185.70141	98.739189	0
75	791	503.95175	550.2465	0	181.1633	96.326237	0
76	791	506.2809	549.717	0	176.42685	93.807819	0
77	791	508.6101	549.1892	0	171.49622	91.186157	0
78	791	510.93925	548.66305	0	166.37133	88.461205	0
79	791	513.2684	548.1386	0	161.05203	85.632885	0
80	791	515.5976	547.61585	0	155.53412	82.698961	0
81	791	517.9268	547.09475	0	149.8259	79.663845	0
82	791	520.25595	546.5753	0	143.92309	76.525265	0
83	791	522.5851	546.05755	0	137.82556	73.283148	0
84	791	524.9143	545.5415	0	131.52908	69.935255	0
85	791	527.2435	545.0271	0	125.04617	66.488229	0
86	791	529.57265	544.51435	0	118.36411	62.935315	0
87	791	531.9018	544.0033	0	111.49127	59.280958	0
88	791	534.231	543.4939	0	104.42756	55.525118	0
89	791	536.56015	542.9862	0	97.168716	51.665523	0
90	791	538.8893	542.48015	0	89.718818	47.704342	0
91	791	541.2185	541.97575	0	82.073637	43.639327	0
92	791	543.5477	541.47305	0	74.241489	39.4749	0
93	791	545.87685	540.972	0	66.218077	35.208776	0
94	791	548.206	540.47265	0	57.999186	30.838714	0
95	791	550.5352	539.97495	0	49.593086	26.369111	0
96	791	552.86435	539.4789	0	40.998456	21.799266	0
97	791	555.1935	538.9845	0	32.213164	17.128043	0
98	791	557.5227	538.49175	0	23.238366	12.356059	0
99	791	559.8519	538.0007	0	14.07485	7.4837305	0
100	791	562.18105	537.5113	0	4.7229629	2.5112439	0

BOTTOM LINER STABILITY SECTIONS
WITH CORRESPONDING ANALYSIS

File Name: Section A-A' Bottom Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 81
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 1:21:19 PM
File Name: Section A-A' Bottom Liner.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/22/2013
Last Solved Time: 1:21:38 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Block
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Restrict Block Crossing: No
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 75 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °

Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (207.24341, 660.72325) ft
Right Coordinate: (1209.1007, 472) ft

Slip Surface Block

Left Grid
- Upper Left: (779, 458) ft
- Lower Left: (778, 454) ft
- Lower Right: (792, 454) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 115 °
- Ending Angle: 135 °
- Angle Increments: 2

Right Grid
- Upper Left: (908, 458) ft
- Lower Left: (915, 458) ft
- Lower Right: (916, 455) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 0 °
- Ending Angle: 45 °
- Angle Increments: 2

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	2.802	(842.694, 571.11)	352.7609	(207.243, 660.723)	(985.409, 481.325)
2	107	3.805	(842.694, 571.11)	149.058	(678.671, 553.329)	(981.672, 482.202)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	209.215	659.63935	0	108.50871	57.695104	0
2	Optimized	211.68095	658.28375	0	245.00454	79.6068	19
3	Optimized	215.19375	656.35265	0	310.65286	179.35551	300
4	Optimized	221.2307	653.03395	0	515.71772	297.74976	300
5	Optimized	228.00365	649.31065	0	696.03242	401.85451	300
6	Optimized	235.51255	645.18275	0	851.65678	491.70427	300
7	Optimized	243.0214	641.05485	0	1006.1141	580.88025	300
8	Optimized	250.53025	636.92695	0	1159.4277	669.39591	300
9	Optimized	258.03915	632.79905	0	1311.6327	757.27148	300
10	Optimized	265.54805	628.67115	0	1462.7639	844.52715	300
11	Optimized	273.05695	624.54325	0	1612.8449	931.17642	300
12	Optimized	278.7179	621.43125	0	1825.6172	970.69788	0
13	Optimized	281.1025	620.12035	0	1980.4221	643.47816	19
14	Optimized	285.5356	617.6833	0	1959.3723	1131.2441	300
15	Optimized	293.44555	613.33495	0	2114.4736	1220.7919	300
16	Optimized	301.35545	608.9866	0	2268.6886	1309.828	300
17	Optimized	309.26535	604.63825	0	2422.0173	1398.3523	300
18	Optimized	317.1753	600.2899	0	2574.3489	1486.301	300
19	Optimized	325.08525	595.9415	0	2726.0158	1573.866	300
20	Optimized	332.99515	591.59315	0	2876.7964	1660.9192	300
21	Optimized	340.90505	587.2448	0	3027.0231	1747.6526	300
22	Optimized	348.815	582.89645	0	3176.585	1834.0022	300
23	Optimized	356.72495	578.5481	0	3325.7038	1920.096	300
24	Optimized	364.94395	574.0298	0	3435.752	1983.6324	300
25	Optimized	370.2772	571.0979	0	3485.2991	2012.2384	300
26	Optimized	375.3784	568.2936	0	3574.7054	2063.8571	300
27	Optimized	383.4424	563.86055	0	3725.4309	2150.8785	300
28	Optimized	391.50635	559.4275	0	3875.9391	2237.7745	300
29	Optimized	399.5703	554.99445	0	4026.2299	2324.5449	300
30	Optimized	407.6343	550.5614	0	4176.5208	2411.3154	300
31	Optimized	415.62645	547.1751	0	4703.8239	2715.754	300
32	Optimized	423.54675	544.8355	0	4737.4858	2735.1887	300

33	Optimized	431.467	542.4959	0	4771.2687	2754.6933	300
34	Optimized	439.38725	540.1563	0	4805.415	2774.4076	300
35	Optimized	447.30755	537.8167	0	4839.8034	2794.2618	300
36	Optimized	455.22785	535.4771	0	4874.4339	2814.2557	300
37	Optimized	463.1481	533.13755	0	4909.3067	2834.3895	300
38	Optimized	471.06835	530.798	0	4944.4216	2854.6631	300
39	Optimized	478.98865	528.4584	0	4979.8997	2875.1465	300
40	Optimized	486.90895	526.1188	0	5015.6201	2895.7696	300
41	Optimized	494.8292	523.7792	0	5051.5826	2916.5326	300
42	Optimized	502.74945	521.4396	0	5087.9084	2937.5053	300
43	Optimized	510.66975	519.1	0	5124.4763	2958.6178	300
44	Optimized	518.5723	516.8359	0	5198.3742	3001.2828	300
45	Optimized	526.45715	514.64735	0	5226.2371	3017.3694	300
46	Optimized	534.342	512.4588	0	5254.3443	3033.5971	300
47	Optimized	542.22685	510.27025	0	5282.8182	3050.0365	300
48	Optimized	550.1117	508.0817	0	5311.4142	3066.5464	300
49	Optimized	557.99655	505.89315	0	5340.2547	3083.1975	300
50	Optimized	565.8814	503.7046	0	5369.3396	3099.9897	300
51	Optimized	573.76625	501.51605	0	5398.6689	3116.923	300
52	Optimized	581.6511	499.3275	0	5428.2426	3133.9973	300
53	Optimized	589.53595	497.13895	0	5457.9385	3151.1423	300
54	Optimized	597.4208	494.9504	0	5488.0011	3168.4989	300
55	Optimized	605.108	492.8604	0	5544.523	3201.1319	300
56	Optimized	612.5976	490.869	0	5567.4913	3214.3926	300
57	Optimized	620.0872	488.87765	0	5590.4596	3227.6534	300
58	Optimized	627.5768	486.8863	0	5613.686	3241.0631	300
59	Optimized	635.0664	484.8949	0	5636.9124	3254.4729	300
60	Optimized	642.55595	482.9035	0	5660.3968	3268.0316	300
61	Optimized	650.0455	480.9121	0	5684.0103	3281.6649	300
62	Optimized	657.5351	478.92075	0	5707.6238	3295.2981	300
63	Optimized	665.0247	476.9294	0	5731.4954	3309.0804	300
64	Optimized	672.5143	474.938	0	5755.3669	3322.8626	300
65	Optimized	680.5282	472.90505	0	5834.6675	3368.6468	300
66	Optimized	689.0664	470.83055	0	5847.7555	3376.2032	300
67	Optimized	697.60465	468.7561	0	5860.8436	3383.7596	300
68	Optimized	706.1429	466.68165	0	5873.9317	3391.3161	300

69	Optimized	714.6811	464.60715	0	5887.0198	3398.8725	300
70	Optimized	722.42075	462.69925	0	5880.4788	3395.096	300
71	Optimized	729.3619	460.958	0	5895.1514	3403.5672	300
72	Optimized	736.334	459.209	0	5909.6937	3411.9632	300
73	Optimized	743.54705	458.2754	0	6470.3328	3440.337	0
74	Optimized	750.9701	458.165	0	6343.5797	3372.9412	0
75	Optimized	758.39315	458.0546	0	6216.4226	3305.3305	0
76	Optimized	765.8162	457.9442	0	6088.8613	3237.505	0
77	Optimized	773.23925	457.83375	0	5960.7612	3169.393	0
78	Optimized	780.66235	457.7233	0	5832.3918	3101.1377	0
79	Optimized	788.0854	457.6129	0	5703.7529	3032.7392	0
80	Optimized	795.50845	457.5025	0	5574.7099	2964.1259	0
81	Optimized	803.25525	457.26805	0	5393.6029	2867.8295	0
82	Optimized	811.32575	456.9095	0	5285.9091	2810.5677	0
83	Optimized	819.39625	456.55095	0	5177.9677	2753.1743	0
84	Optimized	826.75155	456.2242	0	5079.3978	2700.7637	0
85	Optimized	831.2116	456.0231	0	5015.5114	2666.7947	0
86	Optimized	836.4155	456.1392	0	5059.3229	2690.0897	0
87	Optimized	841.49365	456.3432	0	4916.7316	2614.2726	0
88	Optimized	846.5336	456.5137	0	4793.987	2549.0081	0
89	Optimized	854.58495	456.78605	0	4598.1064	2444.8565	0
90	Optimized	862.63625	457.0584	0	4402.8464	2341.0349	0
91	Optimized	870.6537	457.26465	0	4194.9657	2230.5028	0
92	Optimized	878.6373	457.40475	0	4020.6347	2137.8094	0
93	Optimized	886.62085	457.54485	0	3846.6794	2045.3157	0
94	Optimized	894.6044	457.68495	0	3673.3502	1953.155	0
95	Optimized	902.588	457.82505	0	3500.5221	1861.2606	0
96	Optimized	911.3841	458.16185	0	3320.6562	1765.6242	0
97	Optimized	919.9125	459.6677	0	3267.8032	1737.5218	0
98	Optimized	927.36065	462.1459	0	2887.5298	1535.3268	0
99	Optimized	934.8088	464.62405	0	2512.2248	1335.7736	0
100	Optimized	942.25695	467.1022	0	2141.8882	1138.8622	0
101	Optimized	949.7051	469.5804	0	1776.6474	944.66019	0
102	Optimized	956.88225	471.95385	0	1429.7317	760.20183	0
103	Optimized	963.78835	474.22255	0	1104.0561	587.03703	0
104	Optimized	970.69445	476.49125	0	782.53496	416.08122	0

105	Optimized	978.0028	478.8921	0	437.50718	232.6267	0
106	Optimized	983.6335	480.7418	0	128.25668	68.195289	0

Slices of Slip Surface: 107

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	107	679.97795	552.02205	0	104.75613	55.69982	0
2	107	681.5511	550.4489	0	233.19495	75.769634	19
3	107	683.34795	548.65205	0	248.98821	143.75341	300
4	107	686.40885	545.59115	0	397.11517	229.27455	300
5	107	689.4697	542.5303	0	542.77027	313.36856	300
6	107	692.53055	539.46945	0	686.02282	396.07546	300
7	107	695.59145	536.40855	0	826.9421	477.43525	300
8	107	698.6523	533.3477	0	965.64365	557.51462	300
9	107	701.71315	530.28685	0	1102.1967	636.35359	300
10	107	704.77405	527.22595	0	1236.7169	714.01884	300
11	107	707.8349	524.1651	0	1369.2966	790.56373	300
12	107	710.89575	521.10425	0	1500.0281	866.04161	300
13	107	713.95665	518.04335	0	1629.0501	940.5325	300
14	107	717.0175	514.9825	0	1756.4319	1014.0764	300
15	107	720.07835	511.92165	0	1882.3352	1086.7667	300
16	107	723.13925	508.86075	0	2006.8293	1158.6434	300
17	107	726.2001	505.7999	0	2130.0528	1229.7866	300
18	107	729.26095	502.73905	0	2252.0981	1300.2495	300
19	107	732.32185	499.67815	0	2373.2194	1370.1789	300
20	107	735.3827	496.6173	0	2493.1163	1439.4014	300
21	107	738.44355	493.55645	0	2612.5512	1508.3571	300
22	107	741.50445	490.49555	0	2731.062	1576.7794	300
23	107	744.5653	487.4347	0	2849.1108	1644.9349	300
24	107	747.62615	484.37385	0	2966.6975	1712.8236	300
25	107	750.68705	481.31295	0	3084.0533	1780.579	300
26	107	753.7479	478.2521	0	3201.178	1848.201	300
27	107	756.80875	475.19125	0	3318.3027	1915.823	300
28	107	759.86965	472.13035	0	3435.4274	1983.445	300
29	107	762.9305	469.0695	0	3552.5522	2051.0669	300

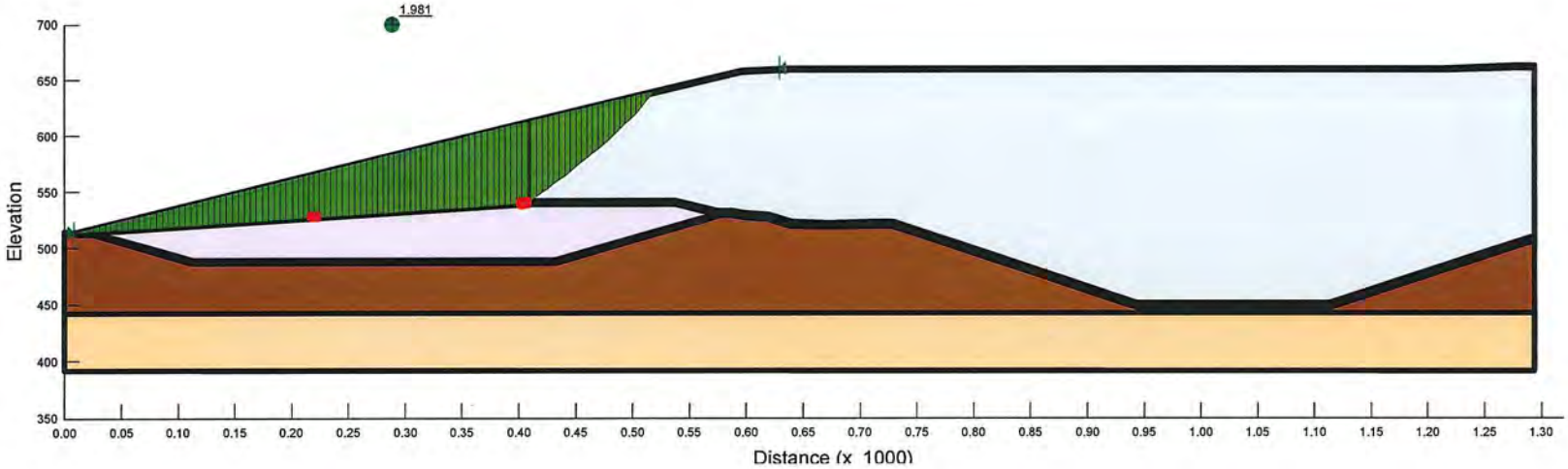
30	107	765.99135	466.00865	0	3670.1389	2118.9557	300
31	107	769.05225	462.94775	0	3788.1877	2187.1112	300
32	107	772.1131	459.8869	0	3906.6985	2255.5334	300
33	107	774.6432	457.3568	0	4115.2045	2188.093	0
34	107	776.82145	455.17855	0	4274.2902	2272.6804	0
35	107	779.5	454.01085	0	5936.8437	3156.6758	0
36	107	782.5	454.0326	0	5898.8447	3136.4713	0
37	107	785.5	454.05435	0	5860.179	3115.9125	0
38	107	788.5	454.0761	0	5821.5134	3095.3536	0
39	107	791.5	454.09785	0	5782.1811	3074.4402	0
40	107	794.5	454.11955	0	5742.1821	3053.1724	0
41	107	797.5	454.1413	0	5701.8499	3031.7273	0
42	107	800.5	454.16305	0	5661.1843	3010.1051	0
43	107	803.5	454.1848	0	5619.852	2988.1283	0
44	107	806.5	454.20655	0	5577.8531	2965.7971	0
45	107	809.5	454.22825	0	5535.5209	2943.2887	0
46	107	812.5	454.25	0	5492.8554	2920.603	0
47	107	815.5	454.27175	0	5449.1898	2897.3856	0
48	107	818.5	454.29345	0	5405.191	2873.991	0
49	107	821.5	454.3152	0	5360.5255	2850.242	0
50	107	824.5	454.33695	0	5315.5267	2826.3157	0
51	107	827.5	454.3587	0	5269.8612	2802.0349	0
52	107	830.5	454.38045	0	5223.5291	2777.3997	0
53	107	833.5	454.40215	0	5176.5304	2752.41	0
54	107	836.5	454.4239	0	5129.1983	2727.2431	0
55	107	839.5	454.44565	0	5081.1995	2701.7217	0
56	107	842.5	454.4674	0	5032.5341	2675.8459	0
57	107	845.5	454.48915	0	4983.5354	2649.7928	0
58	107	848.5	454.51085	0	4933.8701	2623.3853	0
59	107	851.5	454.5326	0	4883.5381	2596.6233	0
60	107	854.5	454.55435	0	4832.8727	2569.684	0
61	107	857.5	454.5761	0	4781.5408	2542.3903	0
62	107	860.5	454.59785	0	4729.5421	2514.7422	0
63	107	863.5	454.61955	0	4677.2102	2486.9168	0
64	107	866.5	454.6413	0	4624.2116	2458.7369	0
65	107	869.5	454.66305	0	4570.8796	2430.3798	0

66	107	872.5	454.6848	0	4516.8811	2401.6683	0
67	107	875.5	454.70655	0	4462.5492	2372.7795	0
68	107	878.5	454.72825	0	4407.5506	2343.5362	0
69	107	881.5	454.75	0	4352.2187	2314.1157	0
70	107	884.5	454.77175	0	4296.5535	2284.518	0
71	107	887.5	454.79345	0	4240.555	2254.7431	0
72	107	890.5	454.8152	0	4183.8898	2224.6137	0
73	107	893.5	454.83695	0	4126.8913	2194.307	0
74	107	896.5	454.8587	0	4069.5595	2163.8232	0
75	107	899.5	454.88045	0	4011.8944	2133.1621	0
76	107	902.5	454.90215	0	3953.8959	2102.3237	0
77	107	905.5	454.9239	0	3895.5641	2071.3082	0
78	107	908.5	454.94565	0	3836.899	2040.1154	0
79	107	911.5	454.9674	0	3777.9005	2008.7453	0
80	107	914.5	454.98915	0	3718.9021	1977.3753	0
81	107	917.42785	455.59145	0	4106.7416	2183.5933	0
82	107	920.25905	456.76415	0	3907.343	2077.5711	0
83	107	923.0657	457.9267	0	3711.4821	1973.43	0
84	107	925.8723	459.08925	0	3516.9379	1869.989	0
85	107	928.6789	460.2518	0	3323.7104	1767.2481	0
86	107	931.48555	461.41435	0	3131.8325	1665.2249	0
87	107	934.4146	462.62755	0	2933.3837	1559.7078	0
88	107	937.466	463.8915	0	2728.4995	1450.7689	0
89	107	940.5174	465.15545	0	2525.6438	1342.9086	0
90	107	943.56885	466.4194	0	2324.9378	1236.1914	0
91	107	946.6203	467.68335	0	2126.4421	1130.6493	0
92	107	949.6717	468.94725	0	1930.217	1026.3146	0
93	107	952.7231	470.2112	0	1736.3234	923.21951	0
94	107	955.77455	471.47515	0	1544.7913	821.3801	0
95	107	958.7827	472.72115	0	1413.5533	816.11538	300
96	107	961.7475	473.94925	0	1240.9491	716.4623	300
97	107	964.7123	475.1773	0	1070.5574	618.08659	300
98	107	967.6771	476.40535	0	902.44045	521.02424	300
99	107	970.6419	477.6334	0	736.56716	425.25725	300
100	107	973.6067	478.86145	0	572.90634	330.76763	300
101	107	976.5715	480.08955	0	411.48916	237.57338	300

102	107	978.32205	480.81465	0	270.91345	88.025115	19
103	107	980.1311	481.56395	0	127.96742	68.041483	0

File Name: Section B-B' Full Height -bottom Liner2.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 74
Last Edited By: Sonawane, Richa
Date: 11/11/2013
Time: 1:54:42 PM
File Name: Section B-B' Full Height -bottom Liner2.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\
Last Solved Date: 11/11/2013
Last Solved Time: 1:55:08 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Block
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Restrict Block Crossing: No
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 5 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °

Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (8.4541621, 513.99731) ft
Right Coordinate: (629.3606, 660.41773) ft

Slip Surface Block

Left Grid
- Upper Left: (217, 529) ft
- Lower Left: (217, 527) ft
- Lower Right: (223, 527) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 135 °
- Ending Angle: 180 °
- Angle Increments: 2

Right Grid

Upper Left: (401, 541) ft
Lower Left: (401, 538) ft
Lower Right: (408, 539) ft
X Increments: 3
Y Increments: 3
Starting Angle: 45 °
Ending Angle: 65 °
Angle Increments: 2

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.981	(261.358, 662.719)	235.0189	(519.216, 639.926)	(8.45417, 513.997)
2	115	2.360	(261.358, 662.719)	205.674	(501.575, 635.575)	(61.3049, 527)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	9.231785	514.0361	0	16.298219	8.6659168	0
2	Optimized	12.76651	514.21245	0	97.084284	51.620629	0
3	Optimized	17.30291	514.43875	0	203.55267	108.23088	0
4	Optimized	19.7358	514.5601	0	258.82072	84.095951	19
5	Optimized	21.4337	514.6448	0	292.287	94.969805	19
6	Optimized	23.8646	514.7661	0	347.07304	112.77087	19
7	Optimized	28.0006	514.97245	0	445.61585	144.78937	19
8	Optimized	33.23104	515.2334	0	548.22109	178.12783	19
9	Optimized	38.19312	515.48095	0	624.72689	202.98607	19
10	Optimized	43.1552	515.7285	0	701.45409	227.91625	19
11	Optimized	48.11728	515.97605	0	778.38257	252.91183	19
12	Optimized	53.07936	516.2236	0	855.53246	277.97935	19
13	Optimized	58.090635	516.5131	0	925.8361	300.82238	19
14	Optimized	63.151105	516.8445	0	996.44904	323.76592	19
15	Optimized	68.211575	517.1759	0	1067.2	346.75431	19
16	Optimized	73.272045	517.5073	0	1138.089	369.78754	19
17	Optimized	78.332515	517.8387	0	1209.0964	392.85922	19

18	Optimized	83.392985	518.1701	0	1280.2417	415.97575	19
19	Optimized	88.45345	518.50145	0	1351.4857	439.12431	19
20	Optimized	93.513915	518.8328	0	1422.8479	462.31131	19
21	Optimized	98.574375	519.1642	0	1494.289	485.52394	19
22	Optimized	103.63485	519.4956	0	1565.8288	508.76861	19
23	Optimized	108.69535	519.827	0	1637.4277	532.0325	19
24	Optimized	113.7558	520.1584	0	1709.0857	555.31561	19
25	Optimized	118.81625	520.4898	0	1780.8029	578.61794	19
26	Optimized	123.98455	520.8285	0	1853.9956	602.3997	19
27	Optimized	129.26065	521.1745	0	1928.7198	626.67906	19
28	Optimized	134.53675	521.5205	0	2003.6142	651.01372	19
29	Optimized	139.8129	521.86645	0	2078.3195	675.28694	19
30	Optimized	145.08905	522.2124	0	2153.0248	699.56015	19
31	Optimized	150.36515	522.5584	0	2227.9192	723.89482	19
32	Optimized	155.64125	522.9044	0	2302.4353	748.10658	19
33	Optimized	160.91735	523.2504	0	2377.1406	772.37979	19
34	Optimized	166.20065	523.59655	0	2451.7982	796.63752	19
35	Optimized	171.49115	523.94285	0	2526.4895	820.90619	19
36	Optimized	176.78165	524.28915	0	2601.1808	845.17486	19
37	Optimized	182.07215	524.63545	0	2675.6834	869.38225	19
38	Optimized	187.36265	524.9818	0	2749.8089	893.46707	19
39	Optimized	192.65315	525.32815	0	2823.9343	917.55189	19
40	Optimized	197.94365	525.67445	0	2897.8712	941.57542	19
41	Optimized	203.23415	526.02075	0	2971.6194	965.53767	19
42	Optimized	208.18745	526.3459	0	3039.9	987.72339	19
43	Optimized	212.8036	526.6499	0	3103.6681	1008.4429	19
44	Optimized	217.41975	526.9539	0	3167.22	1029.0922	19
45	Optimized	222.0359	527.2579	0	3230.7719	1049.7414	19
46	Optimized	226.65205	527.5619	0	3293.8915	1070.2502	19
47	Optimized	231.61355	527.8875	0	3362.3874	1092.5059	19
48	Optimized	236.92045	528.2347	0	3434.5917	1115.9665	19
49	Optimized	242.22735	528.5819	0	3506.7959	1139.4271	19
50	Optimized	247.53425	528.92905	0	3578.4361	1162.7044	19
51	Optimized	252.84115	529.2762	0	3649.8883	1185.9206	19
52	Optimized	258.14805	529.6234	0	3720.7763	1208.9535	19
53	Optimized	263.45495	529.9706	0	3791.4763	1231.9253	19

54	Optimized	268.4976	530.3007	0	3858.0787	1253.5657	19
55	Optimized	273.276	530.61365	0	3921.1444	1274.0571	19
56	Optimized	278.0544	530.9266	0	3983.7925	1294.4127	19
57	Optimized	282.83285	531.2396	0	4046.023	1314.6326	19
58	Optimized	287.6113	531.5526	0	4108.0446	1334.7846	19
59	Optimized	292.3897	531.86555	0	4169.6485	1354.8009	19
60	Optimized	297.1681	532.1785	0	4231.0437	1374.7494	19
61	Optimized	301.93295	532.49075	0	4291.676	1394.4501	19
62	Optimized	306.6843	532.8023	0	4351.9506	1414.0345	19
63	Optimized	311.43565	533.11385	0	4411.8052	1433.4824	19
64	Optimized	316.187	533.4254	0	4471.4497	1452.8621	19
65	Optimized	320.93835	533.73695	0	4530.6742	1472.1053	19
66	Optimized	326.0207	534.0697	0	4594.1107	1492.7171	19
67	Optimized	331.43415	534.42375	0	4660.8389	1514.3984	19
68	Optimized	336.8476	534.7778	0	4727.1985	1535.9599	19
69	Optimized	342.261	535.1318	0	4793.0051	1557.3418	19
70	Optimized	347.7032	535.4897	0	4857.1932	1578.1977	19
71	Optimized	353.17425	535.85155	0	4922.4859	1599.4126	19
72	Optimized	358.64535	536.2134	0	4987.2314	1620.4497	19
73	Optimized	364.1164	536.5752	0	5051.7946	1641.4276	19
74	Optimized	369.5874	536.93705	0	5115.8106	1662.2276	19
75	Optimized	375.05845	537.2989	0	5179.4619	1682.9092	19
76	Optimized	380.2855	537.68285	0	5204.9319	1691.1849	19
77	Optimized	385.26845	538.08895	0	5255.1371	1707.4975	19
78	Optimized	390.2514	538.49505	0	5305.1422	1723.7452	19
79	Optimized	395.2344	538.9012	0	5355.1473	1739.9928	19
80	Optimized	400.21735	539.30735	0	5404.7524	1756.1105	19
81	Optimized	405.2003	539.71345	0	5454.1574	1772.1632	19
82	Optimized	408.3119	540.37435	0	4221.7442	2244.7412	0
83	Optimized	409.72285	541.4161	0	4151.4271	2207.3529	0
84	Optimized	413.0053	543.83965	0	3942.791	2276.3715	300
85	Optimized	417.98855	547.51895	0	3815.5782	2202.9251	300
86	Optimized	422.9718	551.19825	0	3688.2039	2129.3855	300
87	Optimized	427.955	554.87755	0	3560.5067	2055.6595	300
88	Optimized	432.93825	558.55685	0	3432.3253	1981.6539	300
89	Optimized	437.9215	562.23615	0	3303.6595	1907.3687	300

90	Optimized	442.8313	566.0474	0	3077.9763	1777.0704	300
91	Optimized	447.6677	569.9906	0	2935.832	1695.0034	300
92	Optimized	452.5041	573.9338	0	2792.8865	1612.4738	300
93	Optimized	457.34045	577.87695	0	2648.8192	1529.2965	300
94	Optimized	462.1768	581.8201	0	2503.7904	1445.5641	300
95	Optimized	467.0132	585.7633	0	2357.4795	1361.0914	300
96	Optimized	471.8496	589.7065	0	2209.8867	1275.8787	300
97	Optimized	476.66515	593.97095	0	1946.9108	1124.0495	300
98	Optimized	481.45985	598.5567	0	1767.8499	1020.6686	300
99	Optimized	486.25455	603.14245	0	1586.8296	916.15647	300
100	Optimized	491.0492	607.7282	0	1403.488	810.3042	300
101	Optimized	495.84385	612.31395	0	1217.8555	703.12921	300
102	Optimized	500.63855	616.8997	0	1029.8415	594.57928	300
103	Optimized	505.31785	622.11665	0	707.45058	408.44678	300
104	Optimized	509.88175	627.96475	0	458.29263	264.59538	300
105	Optimized	514.4456	633.8129	0	204.69964	118.18339	300
106	Optimized	516.9764	637.05585	0	214.34906	69.646233	19
107	Optimized	518.2206	638.6501	0	91.76637	48.793044	0

Slices of Slip Surface: 115

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	115	63.393155	527	0	61.897081	32.911261	0
2	115	67.569605	527	0	186.0911	98.946394	0
3	115	70.70186	527	0	274.15282	89.07765	19
4	115	73.97131	527	0	345.80013	199.6478	300
5	115	78.42215	527	0	432.00863	249.4203	300
6	115	82.87299	527	0	518.68896	299.46521	300
7	115	87.323825	527	0	605.81864	349.76955	300
8	115	91.77466	527	0	693.3752	400.32036	300
9	115	96.2255	527	0	781.38112	451.1306	300
10	115	100.67636	527	0	869.79146	502.17433	300
11	115	105.1272	527	0	958.60621	553.45155	300
12	115	109.578	527	0	1047.7805	604.93633	300
13	115	114.02885	527	0	1137.3591	656.65459	300

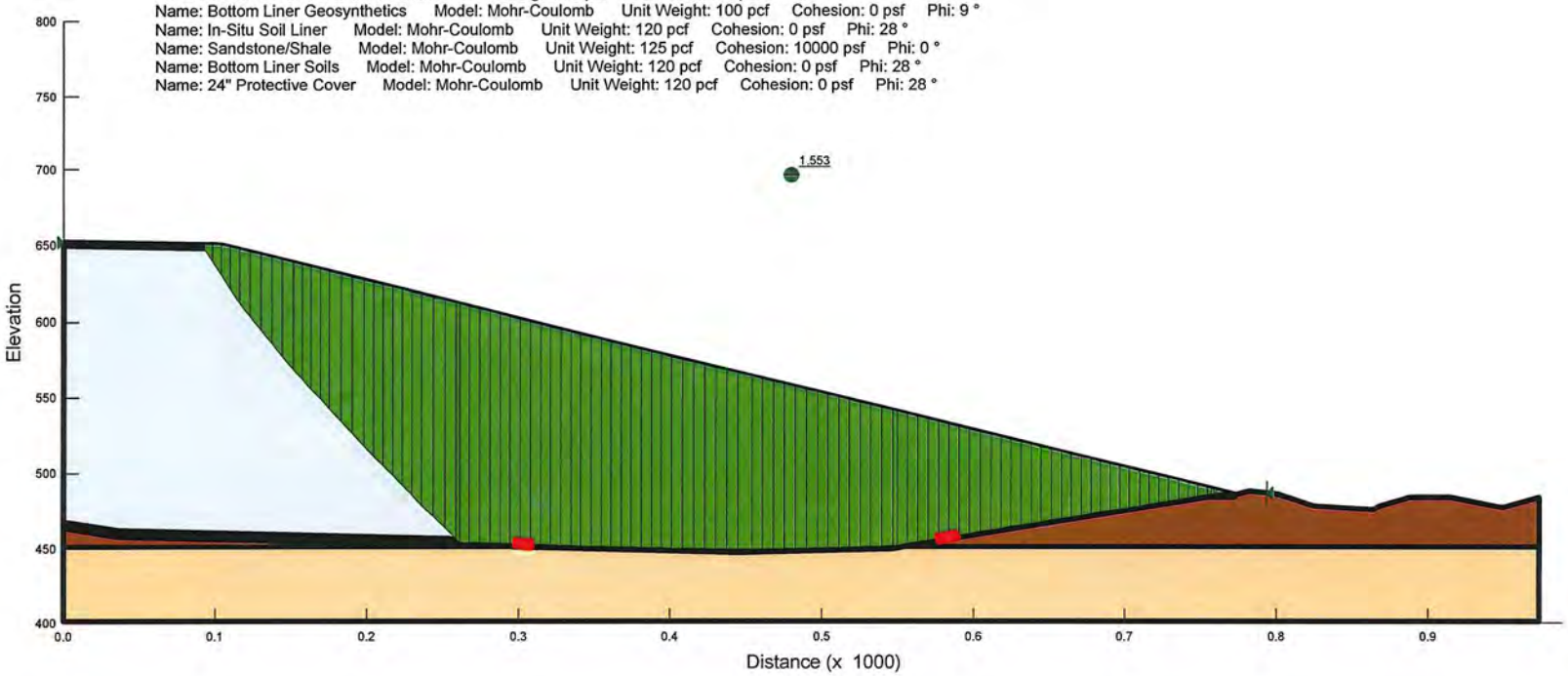
14	115	118.4797	527	0	1227.2523	708.55445	300
15	115	122.9305	527	0	1317.4825	760.64889	300
16	115	127.38135	527	0	1408.0048	812.91197	300
17	115	131.8322	527	0	1498.7967	865.3307	300
18	115	136.28305	527	0	1589.8583	917.9051	300
19	115	140.7339	527	0	1681.122	970.59624	300
20	115	145.1847	527	0	1772.5655	1023.3912	300
21	115	149.63555	527	0	1864.1887	1076.2898	300
22	115	154.0864	527	0	1955.9242	1129.2534	300
23	115	158.5372	527	0	2047.7497	1182.2688	300
24	115	162.98805	527	0	2139.6425	1235.3232	300
25	115	167.4389	527	0	2231.5578	1288.3905	300
26	115	171.88975	527	0	2323.3832	1341.4059	300
27	115	176.3406	527	0	2415.276	1394.4603	300
28	115	180.7914	527	0	2506.9442	1447.3849	300
29	115	185.31605	527	0	2572.5685	1367.8589	0
30	115	189.9146	527	0	2679.1246	1424.5158	0
31	115	194.51315	527	0	2785.6807	1481.1727	0
32	115	199.11165	527	0	2892.0193	1537.7139	0
33	115	203.71015	527	0	2998.3579	1594.2552	0
34	115	208.30865	527	0	3104.2617	1650.5652	0
35	115	213.80395	527	0	3165.4837	1028.528	19
36	115	219.1938	527.1473	0	3182.9637	1034.2076	19
37	115	223.5814	527.44185	0	3240.2693	1052.8273	19
38	115	227.969	527.7364	0	3297.3475	1071.3732	19
39	115	232.3566	528.031	0	3354.1983	1089.8451	19
40	115	236.7442	528.3256	0	3411.0492	1108.3171	19
41	115	241.1318	528.62015	0	3467.4452	1126.6412	19
42	115	245.5194	528.9147	0	3523.8412	1144.9654	19
43	115	249.907	529.2093	0	3580.0098	1163.2157	19
44	115	254.2946	529.5039	0	3635.951	1181.3921	19
45	115	258.6822	529.79845	0	3691.8922	1199.5685	19
46	115	263.0698	530.093	0	3747.3786	1217.5971	19
47	115	267.4574	530.3876	0	3802.865	1235.6257	19
48	115	271.845	530.6822	0	3857.8966	1253.5066	19
49	115	276.2326	530.97675	0	3912.9282	1271.3874	19

50	115	280.6202	531.2713	0	3967.7324	1289.1944	19
51	115	285.0078	531.5659	0	4022.3092	1306.9275	19
52	115	289.39535	531.8605	0	4076.6586	1324.5867	19
53	115	293.7829	532.15505	0	4130.7805	1342.172	19
54	115	298.1705	532.4496	0	4184.9025	1359.7573	19
55	115	302.5581	532.7442	0	4238.5697	1377.1948	19
56	115	306.9457	533.03875	0	4292.0095	1394.5584	19
57	115	311.3333	533.3333	0	4345.4492	1411.922	19
58	115	315.7209	533.6279	0	4398.6616	1429.2118	19
59	115	320.1085	533.9225	0	4451.4192	1446.3538	19
60	115	324.4961	534.21705	0	4504.1767	1463.4957	19
61	115	328.8837	534.5116	0	4556.9343	1480.6377	19
62	115	333.2713	534.8062	0	4609.237	1497.6319	19
63	115	337.6589	535.1008	0	4661.3124	1514.5522	19
64	115	342.0465	535.39535	0	4713.3877	1531.4725	19
65	115	346.4341	535.6899	0	4765.2357	1548.3189	19
66	115	350.8217	535.9845	0	4816.8562	1565.0915	19
67	115	355.2093	536.2791	0	4868.2494	1581.7901	19
68	115	359.5969	536.57365	0	4919.6425	1598.4887	19
69	115	363.9845	536.8682	0	4970.8082	1615.1135	19
70	115	368.3721	537.1628	0	5021.7466	1631.6644	19
71	115	372.7597	537.4574	0	5072.6849	1648.2152	19
72	115	377.1473	537.75195	0	5123.3958	1664.6922	19
73	115	381.5349	538.0465	0	5173.8794	1681.0953	19
74	115	385.9225	538.3411	0	5224.3629	1697.4984	19
75	115	390.3101	538.63565	0	5274.8464	1713.9015	19
76	115	394.6977	538.9302	0	5325.1025	1730.2307	19
77	115	399.0853	539.2248	0	5375.3587	1746.5599	19
78	115	403.5367	539.5832	0	5379.5438	1747.9198	19
79	115	406.864	540.864	0	3975.8008	2113.9708	0
80	115	410.1893	544.1893	0	3692.45	2131.837	300
81	115	414.7005	548.7005	0	3524.7325	2035.0052	300
82	115	419.2117	553.2117	0	3356.388	1937.8115	300
83	115	423.72285	557.72285	0	3186.7895	1839.8938	300
84	115	428.234	562.234	0	3016.2506	1741.4331	300
85	115	432.7452	566.7452	0	2844.4577	1642.2484	300

86	115	437.2564	571.2564	0	2671.2541	1542.2493	300
87	115	441.7676	575.7676	0	2496.483	1441.3451	300
88	115	446.2788	580.2788	0	2320.1445	1339.5361	300
89	115	450.78995	584.78995	0	2141.9251	1236.641	300
90	115	455.3011	589.3011	0	1961.9814	1132.7505	300
91	115	459.8123	593.8123	0	1780.0001	1027.6835	300
92	115	464.3235	598.3235	0	1595.8243	921.34959	300
93	115	468.8347	602.8347	0	1409.4854	813.7668	300
94	115	473.34585	607.34585	0	1220.8111	704.8356	300
95	115	477.857	611.857	0	1029.7228	594.51076	300
96	115	482.3682	616.3682	0	836.12667	482.73796	300
97	115	486.8794	620.8794	0	639.92852	369.46291	300
98	115	491.3906	625.3906	0	441.05004	254.64036	300
99	115	495.9018	629.9018	0	239.42851	138.23411	300
100	115	498.4992	632.4992	0	231.58224	75.24563	19
101	115	500.20805	634.20805	0	100.59835	53.489089	0

File Name: Section C-C'-Bottom Liner.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis (2)

File Information

Created By: Bhatnagar, Richa
Revision Number: 519
Last Edited By: Sonawane, Richa
Date: 10/24/2013
Time: 3:15:34 PM
File Name: Section C-C'-Bottom Liner.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section C-C'\
Last Solved Date: 10/24/2013
Last Solved Time: 3:15:56 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis (2)

Description: Modelfill Slope Analysis
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Block
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Restrict Block Crossing: Yes

Advanced
- Number of Slices: 100
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 150 ft
- Optimization Maximum Iterations: 10000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils
- Model: Mohr-Coulomb
- Unit Weight: 120 pcf
- Cohesion: 0 psf
- Phi: 28 °
- Phi-B: 0 °

Final Cover Geosynthetics
- Model: Mohr-Coulomb
- Unit Weight: 100 pcf
- Cohesion: 19 psf
- Phi: 18 °
- Phi-B: 0 °

Waste
- Model: Mohr-Coulomb
- Unit Weight: 75 pcf
- Cohesion: 300 psf
- Phi: 30 °
- Phi-B: 0 °

Bottom Liner Geosynthetics
- Model: Mohr-Coulomb
- Unit Weight: 100 pcf
- Cohesion: 0 psf
- Phi: 9 °
- Phi-B: 0 °

In-Situ Soil Liner
- Model: Mohr-Coulomb
- Unit Weight: 120 pcf
- Cohesion: 0 psf

Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 652) ft
Right Coordinate: (793.89954, 487.1335) ft

Slip Surface Block

Left Grid
- Upper Left: (299, 455) ft
- Lower Left: (299, 452) ft
- Lower Right: (308, 451) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 115 °
- Ending Angle: 135 °
- Angle Increments: 2

Right Grid
- Upper Left: (577, 458) ft
- Lower Left: (578, 455) ft
- Lower Right: (589, 457) ft
- X Increments: 3
- Y Increments: 3
- Starting Angle: 0 °

Ending Angle: 45 °
Angle Increments: 2

Seismic Loads

Horz Seismic Load: 0

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.553	(425.795, 686.465)	326.5742	(91.0048, 650.246)	(764.971, 487.811)
2	458	3.531	(425.795, 686.465)	296.49	(100.946, 650.054)	(697.291, 504.412)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	91.66678	649.23275	0	78.734789	41.86403	0
2	Optimized	92.494315	647.96655	0	186.29461	60.530789	19
3	Optimized	95.35093	643.5957	0	191.19777	110.38808	300
4	Optimized	100.89601	635.1113	0	587.33886	339.10025	300
5	Optimized	106.7808	626.1071	0	971.40041	560.83829	300
6	Optimized	112.8424	616.83235	0	1327.9025	766.66485	300
7	Optimized	119.42235	607.86745	0	1839.444	1062.0035	300
8	Optimized	126.5206	599.2123	0	2172.1341	1254.0822	300
9	Optimized	133.61885	590.55715	0	2500.4467	1443.6336	300
10	Optimized	140.7171	581.902	0	2824.3818	1630.6576	300
11	Optimized	147.81535	573.24685	0	3144.2967	1815.3606	300
12	Optimized	154.34595	565.62045	0	3551.1128	2050.2359	300
13	Optimized	160.3088	559.02275	0	3791.527	2189.0391	300
14	Optimized	166.27165	552.42505	0	4029.9171	2326.6737	300
15	Optimized	172.2345	545.82735	0	4266.3955	2463.2046	300
16	Optimized	179.05885	538.46705	0	4604.7584	2658.5585	300
17	Optimized	186.74475	530.34415	0	4891.9857	2824.3893	300
18	Optimized	194.43065	522.22125	0	5176.9775	2988.9293	300

19	Optimized	201.42895	514.89735	0	5476.4634	3161.8376	300
20	Optimized	207.73965	508.3725	0	5702.9602	3292.6056	300
21	Optimized	214.05035	501.84765	0	5928.5757	3422.8648	300
22	Optimized	220.3611	495.32275	0	6153.3099	3552.6151	300
23	Optimized	226.67185	488.7979	0	6377.2729	3681.9202	300
24	Optimized	232.98255	482.27305	0	6600.6852	3810.9073	300
25	Optimized	239.95605	475.23535	0	6957.2626	4016.7775	300
26	Optimized	247.59235	467.68485	0	7215.8564	4166.0767	300
27	Optimized	255.22865	460.13435	0	7474.4502	4315.3759	300
28	Optimized	260.1085	455.3093	0	7902.7069	4201.9438	0
29	Optimized	264.50805	454.15575	0	11658.912	1846.5903	0
30	Optimized	271.18375	453.9482	0	11573.27	1833.0258	0
31	Optimized	277.85945	453.74065	0	11487.477	1819.4377	0
32	Optimized	284.53515	453.5331	0	11401.386	1805.8021	0
33	Optimized	291.21085	453.32555	0	11315.144	1792.1428	0
34	Optimized	297.88655	453.118	0	11228.454	1778.4124	0
35	Optimized	304.56225	452.91045	0	11141.763	1764.6819	0
36	Optimized	311.23795	452.7029	0	11054.623	1750.8803	0
37	Optimized	317.91365	452.49535	0	10967.184	1737.0313	0
38	Optimized	324.58935	452.2878	0	10879.445	1723.1349	0
39	Optimized	331.26505	452.08025	0	10791.258	1709.1673	0
40	Optimized	337.9153	451.8941	0	10723.53	1698.4403	0
41	Optimized	344.5401	451.72935	0	10631.48	1683.861	0
42	Optimized	351.16485	451.5646	0	10538.826	1669.1861	0
43	Optimized	357.7896	451.3998	0	10445.72	1654.4395	0
44	Optimized	364.4144	451.235	0	10352.312	1639.6451	0
45	Optimized	371.0392	451.07025	0	10258.3	1624.7551	0
46	Optimized	377.664	450.9055	0	10163.685	1609.7695	0
47	Optimized	384.28875	450.7407	0	10068.767	1594.7361	0
48	Optimized	390.9135	450.57595	0	9973.2466	1579.6071	0
49	Optimized	397.5383	450.4112	0	9877.2731	1564.4064	0
50	Optimized	404.50025	450.26895	0	9802.4013	1552.5478	0
51	Optimized	411.7993	450.1493	0	9688.8404	1534.5616	0
52	Optimized	419.09835	450.02965	0	9574.5946	1516.4668	0
53	Optimized	426.39745	449.90995	0	9459.6638	1498.2636	0
54	Optimized	433.6965	449.79025	0	9343.9112	1479.9301	0

55	Optimized	440.99555	449.6706	0	9227.4736	1461.4882	0
56	Optimized	449.12115	449.5374	0	9102.6742	1441.722	0
57	Optimized	457.2018	449.5506	0	9099.1625	1441.1658	0
58	Optimized	464.41105	449.7238	0	8957.9956	1418.8071	0
59	Optimized	471.6203	449.897	0	8815.9967	1396.3167	0
60	Optimized	478.82955	450.07025	0	8672.8885	1373.6506	0
61	Optimized	486.0388	450.2435	0	8529.0868	1350.8746	0
62	Optimized	493.24805	450.4167	0	8384.1758	1327.923	0
63	Optimized	500.4573	450.5899	0	8238.4328	1304.8396	0
64	Optimized	507.5935	450.79685	0	8118.1116	1285.7826	0
65	Optimized	514.6567	451.03755	0	7965.2947	1261.5787	0
66	Optimized	521.71985	451.2783	0	7811.7704	1237.2629	0
67	Optimized	528.783	451.51905	0	7657.5386	1212.835	0
68	Optimized	535.8462	451.75975	0	7502.5993	1188.295	0
69	Optimized	542.9094	452.00045	0	7347.094	1163.6654	0
70	Optimized	547.9093	452.17085	0	7241.59	1146.9552	0
71	Optimized	552.81135	452.7858	0	7413.8124	1174.2325	0
72	Optimized	559.6789	453.91555	0	7173.0025	1136.092	0
73	Optimized	566.54645	455.0453	0	6931.7616	1097.8832	0
74	Optimized	573.414	456.17505	0	6690.2333	1059.6289	0
75	Optimized	580.28155	457.3048	0	6448.4176	1021.329	0
76	Optimized	587.14905	458.4346	0	6206.3146	982.98366	0
77	Optimized	594.0166	459.56435	0	5964.3553	944.66107	0
78	Optimized	600.88415	460.6941	0	5722.3959	906.33847	0
79	Optimized	607.7517	461.82385	0	5480.7239	868.06139	0
80	Optimized	614.61925	462.9536	0	5239.3393	829.82982	0
81	Optimized	621.3588	464.06365	0	5003.2466	792.43641	0
82	Optimized	627.97035	465.15395	0	4771.4849	755.72897	0
83	Optimized	634.5819	466.2442	0	4540.171	719.09244	0
84	Optimized	641.19345	467.33445	0	4309.6032	682.57408	0
85	Optimized	647.805	468.42475	0	4079.6323	646.15028	0
86	Optimized	654.41655	469.51505	0	3850.5568	609.86829	0
87	Optimized	661.0281	470.6053	0	3622.3768	573.72812	0
88	Optimized	667.63965	471.69555	0	3394.9429	537.70614	0
89	Optimized	674.2512	472.78585	0	3168.703	501.87324	0
90	Optimized	680.70275	473.8505	0	2948.8565	467.05299	0

91	Optimized	686.99425	474.88945	0	2735.2667	433.22369	0
92	Optimized	693.28575	475.9284	0	2522.7747	399.56826	0
93	Optimized	699.6477	476.9811	0	2308.9853	365.70735	0
94	Optimized	706.0801	478.04755	0	2093.3471	331.55361	0
95	Optimized	712.51245	479.114	0	1878.9359	297.5942	0
96	Optimized	718.9448	480.1804	0	1665.7516	263.82913	0
97	Optimized	725.3772	481.2468	0	1453.7789	230.25595	0
98	Optimized	731.8096	482.31325	0	1243.0638	196.88197	0
99	Optimized	738.24195	483.3797	0	1033.5911	163.70475	0
100	Optimized	744.6743	484.4461	0	825.39132	130.72914	0
101	Optimized	751.1067	485.5125	0	618.44918	97.952728	0
102	Optimized	755.6929	486.27285	0	451.21531	71.465485	0
103	Optimized	757.87355	486.6344	0	361.7869	192.36551	0
104	Optimized	759.3226	486.87465	0	286.63791	93.134302	19
105	Optimized	762.46575	487.39575	0	131.39043	69.861533	0

Slices of Slip Surface: 458

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	458	101.96575	649.03425	0	104.09455	55.348054	0
2	458	103.23745	647.76255	0	236.61019	76.87931	19
3	458	103.50315	647.49685	0	260.30752	84.579039	19
4	458	103.6335	647.3665	0	185.9812	107.3763	300
5	458	106.7469	644.2531	0	338.31324	195.32524	300
6	458	112.74065	638.25935	0	622.94844	359.65945	300
7	458	118.7344	632.2656	0	902.65233	521.14657	300
8	458	124.7282	626.2718	0	1177.5901	679.88196	300
9	458	130.72195	620.27805	0	1447.8915	835.94054	300
10	458	136.7157	614.2843	0	1713.8042	989.46534	300
11	458	142.7095	608.2905	0	1975.352	1140.47	300
12	458	148.70325	602.29675	0	2233.0066	1289.227	300
13	458	154.697	596.303	0	2486.6501	1435.6681	300
14	458	160.69075	590.30925	0	2736.6364	1579.9978	300
15	458	166.6845	584.3155	0	2983.2015	1722.3522	300
16	458	172.6783	578.3217	0	3226.4633	1862.7995	300

17	458	178.67205	572.32795	0	3466.7758	2001.5439	300
18	458	184.6658	566.3342	0	3704.2569	2138.6537	300
19	458	190.6596	560.3404	0	3939.1425	2274.265	300
20	458	196.65335	554.34665	0	4171.6688	2408.5141	300
21	458	202.6471	548.3529	0	4402.0714	2541.5371	300
22	458	208.6409	542.3591	0	4630.4686	2673.4023	300
23	458	214.63465	536.36535	0	4857.332	2804.3819	300
24	458	220.6284	530.3716	0	5082.7798	2934.5443	300
25	458	226.6222	524.3778	0	5306.9299	3063.9574	300
26	458	232.61595	518.38405	0	5530.1362	3192.8256	300
27	458	238.6097	512.3903	0	5752.6346	3321.2851	300
28	458	244.6035	506.3965	0	5974.6611	3449.4722	300
29	458	250.59725	500.40275	0	6196.4517	3577.5231	300
30	458	256.591	494.409	0	6418.1243	3705.5058	300
31	458	262.5848	488.4152	0	6640.1509	3833.6929	300
32	458	268.57855	482.42145	0	6862.5314	3962.0843	300
33	458	274.5723	476.4277	0	7085.6197	4090.8844	300
34	458	280.56605	470.43395	0	7309.6518	4220.2294	300
35	458	286.5598	464.4402	0	7534.8636	4350.2555	300
36	458	292.5536	458.4464	0	7761.3731	4481.0309	300
37	458	296.57605	454.42395	0	8055.9726	4283.4366	0
38	458	297.85805	453.14195	0	8672.7599	1373.6302	0
39	458	298.55725	452.44275	0	8188.952	4354.143	0
40	458	302.02585	452.03255	0	11424.484	6074.5059	0
41	458	308.0775	452.0976	0	11335.588	6027.2389	0
42	458	314.12915	452.16265	0	11245.535	5979.357	0
43	458	320.1808	452.22775	0	11154.491	5930.9479	0
44	458	326.71185	452.298	0	10755.177	1703.4528	0
45	458	333.7223	452.37335	0	10646.917	1686.3059	0
46	458	340.3425	452.4445	0	10845.667	5766.7436	0
47	458	346.57245	452.5115	0	10747.278	5714.4289	0
48	458	352.8024	452.5785	0	10647.604	5661.4313	0
49	458	359.0324	452.6455	0	10546.646	5607.7511	0
50	458	365.26235	452.7125	0	10444.243	5553.3028	0
51	458	371.4923	452.7795	0	10340.397	5498.0864	0
52	458	377.72225	452.8465	0	10235.266	5442.1872	0

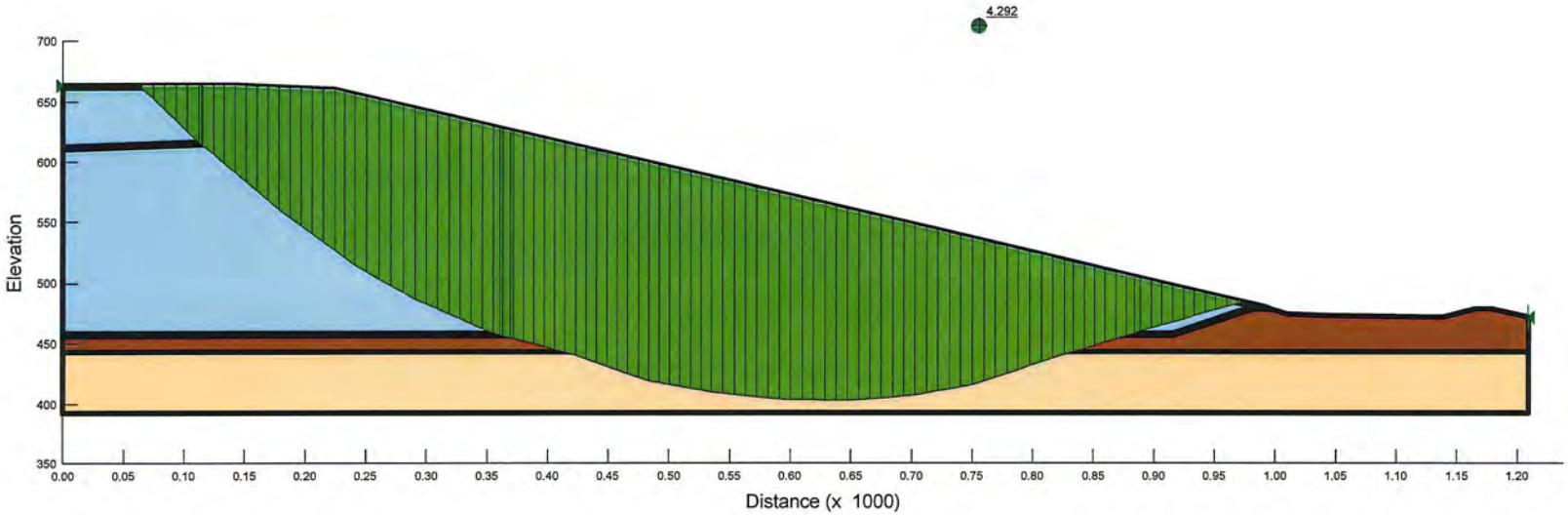
53	458	383.9522	452.9135	0	10128.529	5385.4346	0
54	458	390.1822	452.98045	0	10020.67	5328.0847	0
55	458	396.3006	453.0462	0	9979.0733	5761.4207	300
56	458	402.3074	453.1108	0	9881.8562	5705.2923	300
57	458	408.3142	453.1754	0	9783.3073	5648.3951	300
58	458	414.32105	453.24	0	9683.2602	5590.6329	300
59	458	420.3279	453.3046	0	9581.5485	5531.9096	300
60	458	426.3347	453.3692	0	9478.5049	5472.4174	300
61	458	432.3415	453.4338	0	9373.9632	5412.0602	300
62	458	438.34835	453.4984	0	9268.0898	5350.9341	300
63	458	444.3552	453.563	0	9160.7181	5288.9431	300
64	458	450.362	453.62755	0	9052.0147	5226.1831	300
65	458	456.3688	453.6921	0	8941.9795	5162.6543	300
66	458	462.37565	453.7567	0	8830.6126	5098.3566	300
67	458	468.3825	453.8213	0	8717.914	5033.29	300
68	458	474.3893	453.8859	0	8604.0501	4967.5506	300
69	458	480.3961	453.9505	0	8488.8544	4901.0424	300
70	458	486.4029	454.0151	0	8372.4935	4833.8614	300
71	458	492.40975	454.0797	0	8255.1337	4766.1037	300
72	458	498.4166	454.1443	0	8136.4423	4697.5771	300
73	458	504.4234	454.20885	0	8016.9184	4628.57	300
74	458	510.4302	454.2734	0	7896.2294	4558.8901	300
75	458	516.43705	454.338	0	7774.7079	4488.7297	300
76	458	522.4439	454.4026	0	7652.1877	4417.9926	300
77	458	528.4507	454.4672	0	7528.6687	4346.6789	300
78	458	534.4575	454.5318	0	7404.4837	4274.9807	300
79	458	540.46435	454.5964	0	7279.633	4202.898	300
80	458	546.4712	454.661	0	7153.9498	4130.3349	300
81	458	552.69995	454.72795	0	7011.4026	3728.0289	0
82	458	559.15065	454.7973	0	6922.8901	3680.9659	0
83	458	564.0188	454.84965	0	6720.4436	1064.4137	0
84	458	568.7462	454.9005	0	6781.9929	3606.0496	0
85	458	574.9154	454.96685	0	6695.7632	3560.2005	0
86	458	581.81765	456.58135	0	7302.0151	3882.5503	0
87	458	586.65195	458.5838	0	6472.7875	1025.1888	0
88	458	591.35265	460.53085	0	6549.0414	3482.1871	0

89	458	598.11015	463.3299	0	6155.1924	3553.702	300
90	458	604.2571	465.87605	0	5744.8763	3316.8059	300
91	458	610.40405	468.4222	0	5339.0691	3082.513	300
92	458	616.551	470.96835	0	4937.771	2850.8234	300
93	458	622.69795	473.5145	0	4541.1321	2621.8238	300
94	458	628.8449	476.06065	0	4149.6034	2395.7746	300
95	458	634.99185	478.6068	0	3763.1848	2172.6757	300
96	458	641.1388	481.15295	0	3382.0267	1952.614	300
97	458	647.28575	483.6991	0	3006.129	1735.5894	300
98	458	653.4327	486.24525	0	2635.6422	1521.6887	300
99	458	659.57965	488.7914	0	2270.7163	1310.9987	300
100	458	665.7266	491.33755	0	1911.2013	1103.4326	300
101	458	671.87355	493.8837	0	1557.097	898.99037	300
102	458	678.0205	496.42985	0	1208.4485	697.69809	300
103	458	684.16745	498.976	0	865.25595	499.55576	300
104	458	690.31435	501.52215	0	527.39897	304.49394	300
105	458	693.77815	502.9569	0	287.15955	93.303794	19
106	458	695.72975	503.76525	0	132.11951	70.249191	0

FOUNDATION STABILITY COVER SECTIONS
WITH CORRESPONDING ANALYSIS

File Name: Section A-A' Foundation.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 38
Last Edited By: Sonawane, Richa
Date: 10/22/2013
Time: 2:28:23 PM
File Name: Section A-A' Foundation.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/22/2013
Last Solved Time: 2:28:48 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 180 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 664) ft
Right Coordinate: (1209.1007, 472) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	4.292	(610.799, 1094.13)	421.494	(62.0208, 664)	(973.018, 484.234)
2	155	4.364	(610.799, 1094.13)	694.885	(65.0518, 663.985)	(952.483, 489.054)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	62.317515	663.71955	0	30.115841	16.012877	0
2	Optimized	63.38044	662.7148	0	137.37821	73.045288	0
3	Optimized	64.41304	661.7387	0	242.90238	78.923766	19
4	Optimized	69.42709	656.9991	0	492.51692	284.35478	300
5	Optimized	78.92247	648.0235	0	1074.915	620.60244	300
6	Optimized	88.41785	639.0479	0	1648.6111	951.82607	300
7	Optimized	97.91322	630.07225	0	2213.812	1278.145	300
8	Optimized	107.4086	621.0966	0	2770.7473	1599.6917	300
9	Optimized	113.3719	615.5736	0	3274.941	1741.317	0
10	Optimized	114.8847	614.28535	0	3520.5408	1143.8931	19
11	Optimized	119.60465	610.2659	0	3579.6852	2066.7322	300
12	Optimized	128.45015	602.7331	0	4039.0452	2331.9438	300
13	Optimized	137.29565	595.2003	0	4493.413	2594.2732	300
14	Optimized	146.2612	587.5653	0	4938.1371	2851.0348	300

15	Optimized	155.34675	579.8281	0	5373.6284	3102.4658	300
16	Optimized	164.4323	572.0909	0	5804.7622	3351.381	300
17	Optimized	173.5179	564.3537	0	6231.7061	3597.8772	300
18	Optimized	182.67955	557.12245	0	6789.755	3920.0669	300
19	Optimized	191.91725	550.3972	0	7160.7354	4134.2525	300
20	Optimized	201.15495	543.67195	0	7529.4404	4347.1244	300
21	Optimized	210.39265	536.94665	0	7896.045	4558.7837	300
22	Optimized	219.63035	530.2214	0	8260.7242	4769.3313	300
23	Optimized	228.37335	523.8563	0	8553.6124	4938.4304	300
24	Optimized	236.6216	517.85135	0	8775.6148	5066.6036	300
25	Optimized	245.7438	512.02305	0	9322.2575	5382.2079	300
26	Optimized	255.74	506.37135	0	9507.7447	5489.299	300
27	Optimized	265.7362	500.7197	0	9694.1028	5596.8929	300
28	Optimized	275.7324	495.06805	0	9881.3317	5704.9895	300
29	Optimized	285.7286	489.41635	0	10070.302	5814.0917	300
30	Optimized	295.34995	484.56905	0	10569.019	6102.0258	300
31	Optimized	304.5965	480.52615	0	10681.982	6167.2453	300
32	Optimized	313.84305	476.48325	0	10796.927	6233.6089	300
33	Optimized	323.0896	472.4403	0	10912.864	6300.5447	300
34	Optimized	332.33615	468.39735	0	11029.791	6368.0526	300
35	Optimized	341.5827	464.35445	0	11148.7	6436.7047	300
36	Optimized	350.82925	460.31155	0	11269.59	6506.501	300
37	Optimized	358.0662	457.60705	0	11992.322	6376.4307	0
38	Optimized	362.0057	456.57755	0	12029.443	6396.1683	0
39	Optimized	366.26975	455.4632	0	12039.879	6401.7175	0
40	Optimized	370.2772	454.4159	0	12055.383	6409.9607	0
41	Optimized	375.6078	453.02285	0	12123.96	6446.4239	0
42	Optimized	384.1306	450.79555	0	12244.291	6510.4052	0
43	Optimized	392.65335	448.56825	0	12365.758	6574.9902	0
44	Optimized	401.1761	446.34095	0	12488.36	6640.1788	0
45	Optimized	409.90265	444.0604	0	12612.927	6706.4121	0
46	Optimized	418.66695	441.4124	0	12366.092	0	10000
47	Optimized	427.2652	438.4502	0	12584.912	0	10000
48	Optimized	435.86345	435.488	0	12804.832	0	10000
49	Optimized	444.46175	432.52585	0	13024.752	0	10000
50	Optimized	453.06005	429.5637	0	13245.772	0	10000

51	Optimized	461.6583	426.6015	0	13467.891	0	10000
52	Optimized	470.25655	423.6393	0	13691.109	0	10000
53	Optimized	478.85485	420.6771	0	13916.527	0	10000
54	Optimized	487.47745	418.41845	0	14910.789	0	10000
55	Optimized	496.1243	416.8633	0	14977.944	0	10000
56	Optimized	504.77115	415.30815	0	15045.099	0	10000
57	Optimized	513.418	413.753	0	15112.255	0	10000
58	Optimized	522.06485	412.19785	0	15179.41	0	10000
59	Optimized	530.7117	410.6427	0	15247.704	0	10000
60	Optimized	539.69005	409.3939	0	15707.172	0	10000
61	Optimized	549	408.4515	0	15691.142	0	10000
62	Optimized	558.30995	407.5091	0	15674.043	0	10000
63	Optimized	567.61985	406.5667	0	15655.876	0	10000
64	Optimized	576.9298	405.6243	0	15636.64	0	10000
65	Optimized	586.23975	404.6819	0	15617.404	0	10000
66	Optimized	595.57025	404.11025	0	15994.483	0	10000
67	Optimized	604.9213	403.90935	0	15875.808	0	10000
68	Optimized	614.27235	403.70845	0	15754.994	0	10000
69	Optimized	623.62345	403.50755	0	15633.111	0	10000
70	Optimized	632.9745	403.30665	0	15509.089	0	10000
71	Optimized	642.32555	403.10575	0	15383.999	0	10000
72	Optimized	651.65705	403.35775	0	15719.713	0	10000
73	Optimized	660.969	404.06265	0	15463.786	0	10000
74	Optimized	670.281	404.76755	0	15206.788	0	10000
75	Optimized	679.59295	405.4725	0	14946.577	0	10000
76	Optimized	688.90485	406.17745	0	14684.225	0	10000
77	Optimized	698.2168	406.88235	0	14419.731	0	10000
78	Optimized	707.5861	408.10595	0	14619.882	0	10000
79	Optimized	717.0127	409.84825	0	14195.316	0	10000
80	Optimized	726.4393	411.59055	0	13768.663	0	10000
81	Optimized	735.8659	413.33285	0	13339.925	0	10000
82	Optimized	745.2925	415.07515	0	12910.143	0	10000
83	Optimized	754.7517	417.49295	0	13003.904	0	10000
84	Optimized	764.24355	420.58625	0	12361.822	0	10000
85	Optimized	773.7354	423.6796	0	11719.741	0	10000
86	Optimized	783.2272	426.77295	0	11077.659	0	10000

87	Optimized	792.719	429.86625	0	10436.579	0	10000
88	Optimized	802.2108	432.9596	0	9796.9019	0	10000
89	Optimized	811.70265	436.05295	0	9158.4265	0	10000
90	Optimized	821.1945	439.14625	0	8521.5537	0	10000
91	Optimized	829.6989	441.84645	0	7900.4253	0	10000
92	Optimized	837.81955	444.3388	0	6771.5846	3600.5154	0
93	Optimized	846.54385	447.0164	0	6222.1611	3308.3817	0
94	Optimized	855.26815	449.69405	0	5676.5728	3018.2873	0
95	Optimized	863.9924	452.3717	0	5134.7101	2730.1738	0
96	Optimized	872.71665	455.0493	0	4596.9019	2444.2161	0
97	Optimized	880.3403	457.3891	0	4130.2898	2196.1141	0
98	Optimized	886.1657	459.177	0	3857.4336	2227.0903	300
99	Optimized	893.1625	461.2403	0	3526.0031	2035.7389	300
100	Optimized	902.0283	463.7931	0	3135.4775	1810.2688	300
101	Optimized	910.89415	466.3459	0	2748.0951	1586.6135	300
102	Optimized	919.76	468.8987	0	2363.8561	1364.7729	300
103	Optimized	928.6258	471.4515	0	1982.7603	1144.7472	300
104	Optimized	937.4916	474.0043	0	1604.9162	926.59879	300
105	Optimized	946.3574	476.5571	0	1230.3237	710.32774	300
106	Optimized	955.22325	479.1099	0	859.01548	495.95282	300
107	Optimized	964.0891	481.66275	0	490.89386	283.4177	300
108	Optimized	968.85675	483.03555	0	265.03499	86.115088	19
109	Optimized	971.1047	483.6828	0	124.5898	66.24557	0

Slices of Slip Surface: 155

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	155	65.84685	662.98	0	103.86622	55.226647	0
2	155	71.74229	655.70405	0	537.5218	310.33836	300
3	155	81.74309	643.67745	0	1308.6153	755.52942	300
4	155	91.54395	632.4108	0	2021.0314	1166.843	300
5	155	101.34479	621.6162	0	2699.6723	1558.6565	300
6	155	107.20565	615.3225	0	3223.9226	1714.1901	0
7	155	108.40915	614.058	0	3490.2831	1134.0617	19
8	155	112.78545	609.5558	0	3545.5871	2047.0457	300

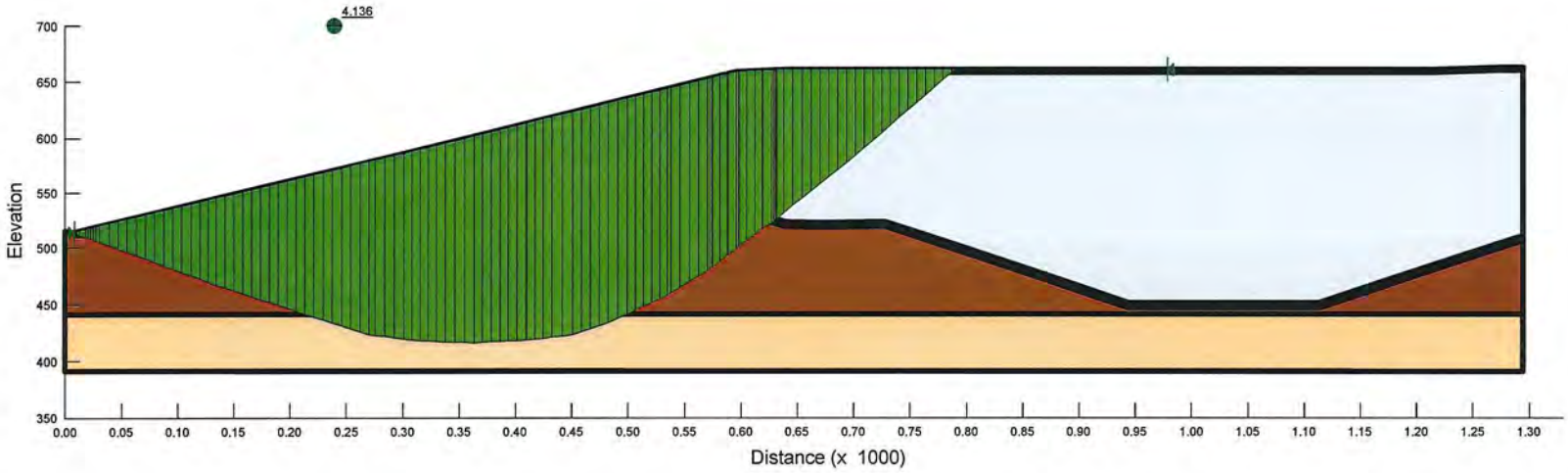
9	155	121.052	601.2013	0	4066.3348	2347.6995	300
10	155	129.31855	593.1225	0	4568.9091	2637.8609	300
11	155	137.5851	585.3063	0	5054.655	2918.3064	300
12	155	146.30345	577.3412	0	5538.776	3197.8138	300
13	155	155.47355	569.2427	0	6020.9661	3476.2064	300
14	155	164.64365	561.4252	0	6486.7608	3745.1331	300
15	155	173.81375	553.8765	0	6937.1528	4005.167	300
16	155	182.9838	546.58545	0	7373.4584	4257.0682	300
17	155	192.15385	539.54185	0	7796.6037	4501.3712	300
18	155	201.32395	532.7364	0	8207.5942	4738.6567	300
19	155	210.49405	526.1606	0	8607.1441	4969.3369	300
20	155	219.66415	519.8065	0	8996.0972	5193.8992	300
21	155	228.6825	513.765	0	9313.4323	5377.1126	300
22	155	237.5491	508.02285	0	9559.6874	5519.2881	300
23	155	246.41565	502.4693	0	9798.1502	5656.9647	300
24	155	255.2822	497.0991	0	10027.588	5789.4309	300
25	155	264.1488	491.9073	0	10250.651	5918.216	300
26	155	273.0154	486.88935	0	10465.177	6042.0728	300
27	155	281.882	482.041	0	10673.904	6162.5816	300
28	155	290.74855	477.3582	0	10874.687	6278.5035	300
29	155	299.6151	472.83725	0	11069.354	6390.8944	300
30	155	308.4817	468.4746	0	11257.766	6499.6745	300
31	155	317.3483	464.26695	0	11440.816	6605.3582	300
32	155	326.2149	460.2113	0	11616.341	6706.6978	300
33	155	332.93875	457.2218	0	11833.369	6291.9138	0
34	155	339.47105	454.42335	0	12067.191	6416.2394	0
35	155	347.9546	450.8909	0	12362.968	6573.5067	0
36	155	356.43815	447.4891	0	12648.833	6725.5038	0
37	155	364.39865	444.4103	0	12868.435	6842.2684	0
38	155	368.6627	442.7973	0	12835.619	0	10000
39	155	370.2772	442.2001	0	12879.871	0	10000
40	155	375.8106	440.2014	0	13063.675	0	10000
41	155	384.739	437.06135	0	13364.699	0	10000
42	155	393.6674	434.057	0	13651.359	0	10000
43	155	402.5958	431.18645	0	13926.574	0	10000
44	155	411.5242	428.44805	0	14189.035	0	10000

45	155	420.4526	425.84015	0	14438.512	0	10000
46	155	429.381	423.3612	0	14675.867	0	10000
47	155	438.3094	421.00985	0	14899.82	0	10000
48	155	447.2378	418.7847	0	15111.267	0	10000
49	155	456.16625	416.6845	0	15310.036	0	10000
50	155	465.0947	414.70815	0	15497.064	0	10000
51	155	474.0231	412.85455	0	15670.017	0	10000
52	155	482.9515	411.1227	0	15829.848	0	10000
53	155	491.8799	409.51165	0	15976.433	0	10000
54	155	500.8083	408.02055	0	16108.546	0	10000
55	155	509.7367	406.64865	0	16228.296	0	10000
56	155	518.6651	405.3952	0	16333.372	0	10000
57	155	527.5935	404.25955	0	16423.684	0	10000
58	155	536.5219	403.2412	0	16499.153	0	10000
59	155	545.4503	402.3396	0	16559.71	0	10000
60	155	554.3787	401.5542	0	16605.302	0	10000
61	155	563.3071	400.8847	0	16634.761	0	10000
62	155	572.2355	400.33075	0	16648.055	0	10000
63	155	581.1639	399.89205	0	16646.271	0	10000
64	155	590.0923	399.5684	0	16626.043	0	10000
65	155	599.0207	399.3596	0	16589.605	0	10000
66	155	607.9491	399.2656	0	16535.849	0	10000
67	155	616.8775	399.28635	0	16463.676	0	10000
68	155	625.8059	399.42185	0	16374.245	0	10000
69	155	634.73435	399.67215	0	16265.364	0	10000
70	155	643.6628	400.0374	0	16138.221	0	10000
71	155	652.5912	400.51775	0	15992.895	0	10000
72	155	661.5196	401.11345	0	15827.242	0	10000
73	155	670.448	401.82485	0	15641.383	0	10000
74	155	679.3764	402.6522	0	15436.56	0	10000
75	155	688.3048	403.596	0	15210.693	0	10000
76	155	697.2332	404.65675	0	14965.066	0	10000
77	155	706.1616	405.8349	0	14698.749	0	10000
78	155	715.09	407.1311	0	14411.954	0	10000
79	155	724.0184	408.546	0	14103.799	0	10000
80	155	732.9468	410.0804	0	13775.64	0	10000

81	155	741.8752	411.73505	0	13426.644	0	10000
82	155	750.8036	413.5108	0	13056.009	0	10000
83	155	759.732	415.4087	0	12665.15	0	10000
84	155	768.6604	417.4297	0	12253.317	0	10000
85	155	777.5888	419.57495	0	11819.792	0	10000
86	155	786.5172	421.8456	0	11367.148	0	10000
87	155	795.4456	424.24295	0	10893.634	0	10000
88	155	804.37405	426.76835	0	10399.921	0	10000
89	155	813.3025	429.42325	0	9886.489	0	10000
90	155	822.2309	432.20925	0	9353.4203	0	10000
91	155	831.1593	435.12795	0	8801.2552	0	10000
92	155	840.0877	438.1812	0	8230.1438	0	10000
93	155	849.0161	441.37085	0	7640.6942	0	10000
94	155	857.64005	444.5808	0	6367.3277	3385.5682	0
95	155	865.95955	447.8038	0	5766.6604	3066.1877	0
96	155	874.279	451.15055	0	5150.2074	2738.4139	0
97	155	882.59845	454.62305	0	4518.3932	2402.4723	0
98	155	889.0482	457.3917	0	4019.484	2137.1975	0
99	155	895.4945	460.2592	0	3657.0432	2111.3949	300
100	155	903.8071	464.05885	0	3170.0017	1830.2013	300
101	155	912.1197	467.99185	0	2673.9049	1543.7797	300
102	155	920.4323	472.0608	0	2169.2065	1252.392	300
103	155	928.7449	476.2684	0	1656.1742	956.19265	300
104	155	937.05755	480.61745	0	1135.0069	655.29652	300
105	155	945.3702	485.111	0	605.92226	349.82938	300
106	155	949.7494	487.5189	0	271.9843	88.373058	19
107	155	951.22745	488.34885	0	128.9963	68.588548	0

File Name: Section B-B' Full Height -foundation soils.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: C & D Waste Model: Mohr-Coulomb Unit Weight: 70 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 54
Last Edited By: Sonawane, Richa
Date: 10/24/2013
Time: 2:27:08 PM
File Name: Section B-B' Full Height -foundation soils.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section B-B'\
Last Solved Date: 10/24/2013
Last Solved Time: 2:27:30 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 200 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

C & D Waste

Model: Mohr-Coulomb
Unit Weight: 70 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (8.4541621, 513.99731) ft
Right Coordinate: (979, 660.82) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	4.136	(286.007, 712.672)	369.1832	(789.536, 660.82)	(8.45415, 513.997)
2	99	5.062	(286.007, 712.672)	341.332	(623.27, 660.128)	(8.45416, 513.997)

Slices of Slip Surface: Optimized

	Slip	X (ft)	Y (ft)	PWP	Base	Frictional	Cohesive

	Surface			(psf)	Normal Stress (psf)	Strength (psf)	Strength (psf)
1	Optimized	9.023877	513.2739	0	122.43522	65.099959	0
2	Optimized	9.8015	512.4741	0	230.6382	122.6325	0
3	Optimized	11.434865	511.87385	0	356.98929	189.81457	0
4	Optimized	15.611315	510.33905	0	682.54582	362.91605	0
5	Optimized	19.37605	508.95555	0	972.00374	516.82355	0
6	Optimized	21.4339	508.1993	0	1095.812	582.65356	0
7	Optimized	23.61325	507.3984	0	1234.8267	656.56898	0
8	Optimized	24.96395	506.902	0	1341.3913	713.23039	0
9	Optimized	25.2153	506.8096	0	1361.2683	723.79919	0
10	Optimized	26.4499	506.3559	0	1458.9527	775.73889	0
11	Optimized	29.1993	505.34555	0	1647.4219	875.94978	0
12	Optimized	34.806185	503.28505	0	1952.3723	1038.0947	0
13	Optimized	42.918555	500.3038	0	2377.5807	1264.1821	0
14	Optimized	51.030925	497.3226	0	2807.0702	1492.5457	0
15	Optimized	59.143295	494.34135	0	3240.6093	1723.0626	0
16	Optimized	67.255665	491.3601	0	3678.1981	1955.7326	0
17	Optimized	75.368035	488.37885	0	4119.8364	2190.5559	0
18	Optimized	83.480405	485.3976	0	4565.4086	2427.4708	0
19	Optimized	91.592775	482.4164	0	5014.799	2666.4159	0
20	Optimized	99.70513	479.43515	0	5468.0076	2907.3912	0
21	Optimized	107.8175	476.4539	0	5924.803	3150.2736	0
22	Optimized	112.08915	474.8841	0	6166.5225	3278.7982	0
23	Optimized	115.95465	473.46355	0	6445.282	3427.0172	0
24	Optimized	123.2548	470.7808	0	6980.4173	3711.5537	0
25	Optimized	130.55495	468.09805	0	7519.1528	3998.0044	0
26	Optimized	138.1331	465.50985	0	7955.0444	4229.7721	0
27	Optimized	145.98925	463.01615	0	8477.4623	4507.5467	0
28	Optimized	153.8454	460.52245	0	9002.428	4786.6759	0
29	Optimized	161.7016	458.02875	0	9529.6989	5067.0308	0
30	Optimized	169.55775	455.53505	0	10059.154	5348.5468	0
31	Optimized	177.4139	453.04135	0	10590.428	5631.0305	0
32	Optimized	185.2701	450.54765	0	11123.159	5914.2883	0
33	Optimized	193.12625	448.05395	0	11657.223	6198.2557	0
34	Optimized	200.9824	445.56025	0	12191.774	6482.4811	0

35	Optimized	208.8386	443.0666	0	12728.023	6767.6096	0
36	Optimized	216.87985	440.5142	0	13630.308	0	10000
37	Optimized	225.1061	437.903	0	14177.189	0	10000
38	Optimized	233.33235	435.2918	0	14722.911	0	10000
39	Optimized	241.55865	432.6806	0	15266.316	0	10000
40	Optimized	249.78495	430.06945	0	15807.403	0	10000
41	Optimized	258.01125	427.4583	0	16345.015	0	10000
42	Optimized	266.23755	424.8471	0	16880.309	0	10000
43	Optimized	272.8878	423.16865	0	16313.098	0	10000
44	Optimized	279.7014	422.22605	0	16491.648	0	10000
45	Optimized	288.25445	421.0865	0	16797.607	0	10000
46	Optimized	296.8075	419.94695	0	17102.407	0	10000
47	Optimized	304.65475	419.09385	0	17047.967	0	10000
48	Optimized	311.7962	418.5271	0	17241.995	0	10000
49	Optimized	318.93765	417.96035	0	17433.232	0	10000
50	Optimized	326.0791	417.3936	0	17623.073	0	10000
51	Optimized	333.83195	417.0066	0	17480.913	0	10000
52	Optimized	342.19625	416.79945	0	17635.093	0	10000
53	Optimized	350.5605	416.5923	0	17788.078	0	10000
54	Optimized	358.92475	416.3851	0	17938.672	0	10000
55	Optimized	366.92565	416.46275	0	17622.028	0	10000
56	Optimized	374.56315	416.8252	0	17684.805	0	10000
57	Optimized	382.2007	417.18765	0	17746.274	0	10000
58	Optimized	389.83825	417.5501	0	17806.435	0	10000
59	Optimized	397.47575	417.91255	0	17865.289	0	10000
60	Optimized	405.11325	418.275	0	17924.142	0	10000
61	Optimized	409.3671	418.47685	0	17956.118	0	10000
62	Optimized	413.5062	418.90335	0	17599.938	0	10000
63	Optimized	420.91415	419.715	0	17601.28	0	10000
64	Optimized	428.3221	420.52665	0	17602.622	0	10000
65	Optimized	432.2418	420.9561	0	17605.811	0	10000
66	Optimized	436.9495	421.4719	0	17673.719	0	10000
67	Optimized	445.93345	422.45625	0	17804.283	0	10000
68	Optimized	454.39705	424.32635	0	16519.165	0	10000
69	Optimized	462.34035	427.0823	0	16419.258	0	10000
70	Optimized	470.28365	429.8383	0	16321.729	0	10000

71	Optimized	478.22695	432.59425	0	16225.39	0	10000
72	Optimized	486.4919	435.934	0	15528.781	0	10000
73	Optimized	495.07845	439.8576	0	15328.58	0	10000
74	Optimized	502.9148	443.4384	0	15274.252	8121.4637	0
75	Optimized	510.00095	446.6764	0	15134.345	8047.0738	0
76	Optimized	517.08705	449.9144	0	14997.005	7974.0489	0
77	Optimized	524.1732	453.1524	0	14860.948	7901.7065	0
78	Optimized	531.25935	456.3904	0	14727.459	7830.729	0
79	Optimized	536.4012	458.9746	0	14060.626	7476.1676	0
80	Optimized	542.0044	462.35725	0	13888.688	7384.7466	0
81	Optimized	550.01325	467.19215	0	13647.109	7256.2965	0
82	Optimized	558.0221	472.0271	0	13406.598	7128.4147	0
83	Optimized	566.0309	476.86205	0	13169.294	7002.238	0
84	Optimized	571.17815	480.1436	0	12536.028	6665.5242	0
85	Optimized	573.1605	481.64245	0	12432.877	6610.6779	0
86	Optimized	574.18	482.4133	0	12366.854	6575.573	0
87	Optimized	574.36015	482.5495	0	12355.244	6569.4	0
88	Optimized	574.39625	482.5768	0	12353.213	6568.3201	0
89	Optimized	577.80735	485.1559	0	12163.001	6467.1821	0
90	Optimized	584.5576	490.2597	0	11786.755	6267.1286	0
91	Optimized	588.0368	492.8903	0	11592.909	6164.0591	0
92	Optimized	588.16695	492.9887	0	11585.688	6160.2197	0
93	Optimized	592.01285	495.89655	0	11341.02	6030.1272	0
94	Optimized	595.9774	498.8941	0	11085.398	5894.2108	0
95	Optimized	596.93765	499.62015	0	11053.612	5877.3096	0
96	Optimized	597.8886	500.33915	0	10981.395	5838.9111	0
97	Optimized	598.0579	500.46715	0	10968.669	5832.1449	0
98	Optimized	601.52805	503.09095	0	10722.677	5701.3486	0
99	Optimized	608.4006	508.2872	0	10235.088	5442.0926	0
100	Optimized	615.27315	513.48345	0	9746.1052	5182.0961	0
101	Optimized	618.89995	516.22565	0	9487.5878	5044.6399	0
102	Optimized	623.1156	519.4131	0	9145.3071	4862.646	0
103	Optimized	628.11165	523.1906	0	8737.273	4645.6905	0
104	Optimized	629.3253	524.1082	0	9089.6917	1439.6657	0
105	Optimized	630.2986	524.8441	0	8567.431	4555.3839	0
106	Optimized	631.20795	525.54605	0	8350.5739	4440.0789	0

107	Optimized	634.59445	528.37895	0	8094.3146	4673.2547	300
108	Optimized	637.826	531.08225	0	7951.3082	4590.69	300
109	Optimized	641.8217	534.4248	0	7762.0575	4481.426	300
110	Optimized	649.75955	541.06505	0	7385.256	4263.8795	300
111	Optimized	657.69145	547.70035	0	7006.7729	4045.3622	300
112	Optimized	665.6233	554.33565	0	6626.0656	3825.5608	300
113	Optimized	673.55515	560.97095	0	6242.9409	3604.3636	300
114	Optimized	681.48705	567.60625	0	5857.1086	3381.6032	300
115	Optimized	689.41895	574.24155	0	5468.3753	3157.1679	300
116	Optimized	697.35085	580.87685	0	5076.5476	2930.9461	300
117	Optimized	705.19595	587.56385	0	4649.6714	2684.489	300
118	Optimized	712.9542	594.30255	0	4246.9938	2452.003	300
119	Optimized	720.71245	601.0412	0	3840.4237	2217.2696	300
120	Optimized	728.47075	607.77985	0	3429.7664	1980.1766	300
121	Optimized	736.22905	614.51855	0	3014.8275	1740.6114	300
122	Optimized	743.9873	621.25725	0	2595.4121	1498.4619	300
123	Optimized	751.74555	627.99595	0	2171.4231	1253.6717	300
124	Optimized	759.50385	634.73465	0	1742.5685	1006.0724	300
125	Optimized	767.2621	641.4733	0	1308.751	755.60774	300
126	Optimized	775.02035	648.21195	0	869.96081	502.27211	300
127	Optimized	782.77865	654.95065	0	425.93524	245.91383	300
128	Optimized	786.9456	658.57	0	243.82292	79.222868	19
129	Optimized	788.3847	659.82	0	107.82585	57.332021	0

Slices of Slip Surface: 99

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	99	9.231781	512.91985	0	176.56621	93.881919	0
2	99	14.18585	506.34035	0	1280.3976	680.79947	0
3	99	19.37605	499.5699	0	2418.441	1285.9079	0
4	99	21.4339	497.02055	0	2814.247	1496.3617	0
5	99	23.61325	494.375	0	3235.0946	1720.1303	0
6	99	24.96395	492.7547	0	3516.1741	1869.5829	0
7	99	25.2153	492.45645	0	3568.1841	1897.2372	0
8	99	26.4499	491.0103	0	3821.0629	2031.6952	0

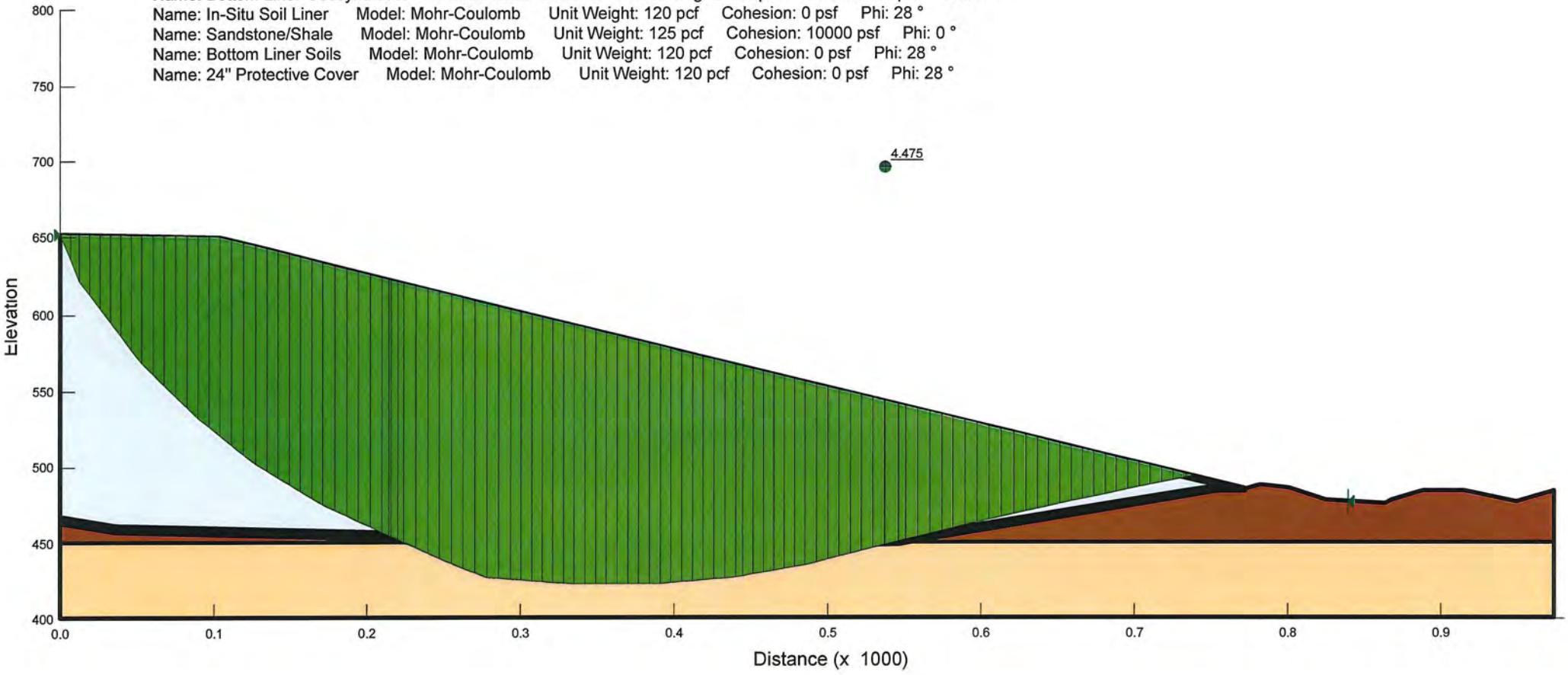
9	99	29.1993	487.8355	0	4345.8037	2310.7048	0
10	99	33.721255	482.8033	0	5115.7887	2720.1131	0
11	99	39.66376	476.4438	0	6075.7438	3230.5303	0
12	99	45.606265	470.39705	0	6995.0193	3719.3177	0
13	99	51.548775	464.64015	0	7875.386	4187.417	0
14	99	57.491285	459.15325	0	8718.3024	4635.6036	0
15	99	63.43379	453.9192	0	9525.0513	5064.5596	0
16	99	69.376295	448.92295	0	10296.59	5474.7938	0
17	99	75.318805	444.1512	0	11033.996	5866.8799	0
18	99	81.648425	439.3093	0	12437.191	0	10000
19	99	88.36515	434.4133	0	13135.719	0	10000
20	99	95.081875	429.7615	0	13799.555	0	10000
21	99	101.79862	425.342	0	14428.705	0	10000
22	99	108.51535	421.14425	0	15023.516	0	10000
23	99	112.08915	418.972	0	15329.824	0	10000
24	99	115.4996	417.0019	0	15656.742	0	10000
25	99	121.8896	413.4073	0	16257.345	0	10000
26	99	128.27955	409.99025	0	16827.379	0	10000
27	99	134.6695	406.7448	0	17365.475	0	10000
28	99	141.0595	403.6656	0	17874.613	0	10000
29	99	147.4495	400.7477	0	18353.736	0	10000
30	99	153.8395	397.9866	0	18803.312	0	10000
31	99	160.22945	395.3782	0	19222.477	0	10000
32	99	166.6194	392.91875	0	19611.899	0	10000
33	99	172.8674	391.7241	0	18101.76	0	10000
34	99	178.97345	391.7207	0	18195.111	0	10000
35	99	185.0795	391.71735	0	18286.823	0	10000
36	99	191.1855	391.714	0	18376.898	0	10000
37	99	197.29155	391.7106	0	18465.335	0	10000
38	99	203.3976	391.7072	0	18552.134	0	10000
39	99	209.5036	391.7038	0	18635.658	0	10000
40	99	215.60965	391.7004	0	18719.182	0	10000
41	99	221.7157	391.697	0	18799.431	0	10000
42	99	227.82175	391.6936	0	18879.679	0	10000
43	99	233.9278	391.69025	0	18956.652	0	10000
44	99	240.0338	391.6869	0	19033.625	0	10000

45	99	246.13985	391.6835	0	19107.323	0	10000
46	99	252.2459	391.6801	0	19181.02	0	10000
47	99	258.3519	391.6767	0	19251.442	0	10000
48	99	264.45795	391.6733	0	19321.864	0	10000
49	99	270.564	391.6699	0	19389.011	0	10000
50	99	276.67	391.6665	0	19456.158	0	10000
51	99	282.77605	391.66315	0	19521.667	0	10000
52	99	288.8821	391.6598	0	19585.538	0	10000
53	99	294.9881	391.6564	0	19647.771	0	10000
54	99	301.09415	391.653	0	19708.367	0	10000
55	99	307.2002	391.6496	0	19768.963	0	10000
56	99	313.3062	391.6462	0	19827.921	0	10000
57	99	319.41225	391.6428	0	19885.241	0	10000
58	99	325.5183	391.63945	0	19942.562	0	10000
59	99	331.6243	391.6361	0	19996.607	0	10000
60	99	337.73035	391.6327	0	20052.289	0	10000
61	99	343.8364	391.6293	0	20104.696	0	10000
62	99	349.9424	391.6259	0	20158.741	0	10000
63	99	356.04845	391.6225	0	20209.511	0	10000
64	99	362.1545	391.6191	0	20260.28	0	10000
65	99	368.2605	391.6157	0	20311.05	0	10000
66	99	374.36655	391.61235	0	20360.181	0	10000
67	99	380.4726	391.609	0	20409.313	0	10000
68	99	386.57865	391.6056	0	20458.445	0	10000
69	99	392.6847	391.6022	0	20507.576	0	10000
70	99	398.7907	391.5988	0	20555.07	0	10000
71	99	405.38785	392.92035	0	18496.748	0	10000
72	99	411.81875	395.38825	0	18182.676	0	10000
73	99	417.5923	397.73905	0	17891.346	0	10000
74	99	423.36585	400.21425	0	17589.013	0	10000
75	99	429.13935	402.8168	0	17277.422	0	10000
76	99	432.2418	404.25255	0	17110.381	0	10000
77	99	435.5208	405.84755	0	16967.722	0	10000
78	99	441.6474	408.90985	0	16696.705	0	10000
79	99	447.774	412.1282	0	16413.465	0	10000
80	99	453.9006	415.5077	0	16115.232	0	10000

81	99	460.0272	419.05395	0	15804.991	0	10000
82	99	466.1538	422.7731	0	15478.661	0	10000
83	99	472.2804	426.6718	0	15136.483	0	10000
84	99	478.407	430.75755	0	14777.363	0	10000
85	99	484.5336	435.03865	0	14400.299	0	10000
86	99	490.6602	439.52425	0	14004.386	0	10000
87	99	496.88615	444.30455	0	13906.652	7394.2978	0
88	99	503.2114	449.3989	0	13525.631	7191.7057	0
89	99	509.5366	454.74895	0	13124.172	6978.2459	0
90	99	515.8618	460.37105	0	12702.57	6754.0764	0
91	99	522.187	466.28385	0	12257.698	6517.5336	0
92	99	528.5122	472.50885	0	11787.861	6267.717	0
93	99	534.8374	479.0711	0	11290.528	6003.28	0
94	99	540.8601	485.6506	0	10792.232	5738.3315	0
95	99	546.58025	492.2422	0	10292.854	5472.8078	0
96	99	552.3004	499.19075	0	9762.0013	5190.5482	0
97	99	558.0206	506.53245	0	9195.9509	4889.5738	0
98	99	563.74075	514.311	0	8590.2264	4567.5044	0
99	99	569.4609	522.5803	0	7939.494	4221.5038	0
100	99	572.3323	526.86255	0	7601.6423	4041.8649	0
101	99	573.1718	528.169	0	7479.1328	3976.7255	0
102	99	574.18	529.74155	0	7331.7086	3898.3386	0
103	99	574.36015	530.0253	0	7305.0208	3884.1484	0
104	99	574.39625	530.0823	0	7299.9522	3881.4534	0
105	99	574.5841	530.37955	0	7273.543	3867.4114	0
106	99	574.8933	530.87	0	7966.0187	1261.6934	0
107	99	575.67395	532.12	0	7128.5939	3790.3406	0
108	99	579.5532	538.61095	0	6595.579	3807.9593	300
109	99	586.065	550.1117	0	5982.7728	3454.1555	300
110	99	592.5768	562.78075	0	5298.9683	3059.3608	300
111	99	595.9774	569.7538	0	4918.7417	2839.8369	300
112	99	599.4926	577.908	0	4466.4111	2578.6837	300
113	99	606.1972	594.8056	0	3456.806	1995.7879	300
114	99	612.8654	615.0229	0	2264.3495	1307.3228	300
115	99	619.7349	643.15525	0	649.98533	375.26921	300

File Name: Section C-C'-foundation.gsz

Name: Final Cover Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Final Cover Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: Waste Model: Mohr-Coulomb Unit Weight: 75 pcf Cohesion: 300 psf Phi: 30 °
Name: Bottom Liner Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 0 psf Phi: 9 °
Name: In-Situ Soil Liner Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: Bottom Liner Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °



SLOPE/W Analysis (2)

File Information

Created By: Bhatnagar, Richa
Revision Number: 511
Last Edited By: Sonawane, Richa
Date: 10/24/2013
Time: 2:59:05 PM
File Name: Section C-C'-foundation.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section C-C'\
Last Solved Date: 10/24/2013
Last Solved Time: 2:59:28 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis (2)

Description: Modelfill Slope Analysis
Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Left to Right
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced

Number of Slices: 100
Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 180 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Final Cover Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Final Cover Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

Waste

Model: Mohr-Coulomb
Unit Weight: 75 pcf
Cohesion: 300 psf
Phi: 30 °
Phi-B: 0 °

Bottom Liner Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 0 psf
Phi: 9 °
Phi-B: 0 °

In-Situ Soil Liner

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °

Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Bottom Liner Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (0, 652) ft
Right Coordinate: (839.86118, 477.50123) ft

Seismic Loads

Horz Seismic Load: 0

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	4.475	(401.211, 802.564)	353.7933	(0, 652)	(738.011, 494.424)
2	57	4.859	(401.211, 802.564)	396.704	(34.4623, 651.336)	(670.263, 511.041)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength

							(psf)
1	Optimized	0.41495215	650.9918	0	92.996806	49.447279	0
2	Optimized	3.7375972	642.91885	0	458.51007	264.72091	300
3	Optimized	9.449245	629.04135	0	1223.8732	706.6035	300
4	Optimized	15.64235	617.7686	0	2128.3243	1228.7886	300
5	Optimized	22.42065	608.84865	0	2649.0693	1529.4409	300
6	Optimized	29.19895	599.9287	0	3159.3708	1824.0636	300
7	Optimized	35.97725	591.0087	0	3659.7645	2112.966	300
8	Optimized	42.75555	582.08875	0	4150.6072	2396.3542	300
9	Optimized	49.53385	573.1688	0	4632.3455	2674.4859	300
10	Optimized	56.59937	565.07225	0	5336.7859	3081.1948	300
11	Optimized	63.95211	557.79915	0	5733.8008	3310.4114	300
12	Optimized	71.30485	550.52605	0	6125.5944	3536.6136	300
13	Optimized	78.65759	543.25295	0	6512.4568	3759.9687	300
14	Optimized	86.01033	535.97985	0	6894.7746	3980.7	300
15	Optimized	93.121075	529.5648	0	7482.6222	4320.094	300
16	Optimized	100.15273	523.87605	0	7785.2143	4494.7956	300
17	Optimized	107.63915	517.8194	0	8052.1498	4648.9108	300
18	Optimized	115.4174	511.5266	0	8271.8393	4775.7486	300
19	Optimized	123.19565	505.2338	0	8491.029	4902.2979	300
20	Optimized	130.75695	499.85535	0	9064.551	5233.421	300
21	Optimized	138.10125	495.39125	0	9201.2651	5312.3529	300
22	Optimized	145.44555	490.9272	0	9338.91	5391.8222	300
23	Optimized	152.78985	486.46315	0	9477.3694	5471.7618	300
24	Optimized	160.13415	481.99905	0	9616.9923	5552.3731	300
25	Optimized	167.47845	477.53495	0	9757.8951	5633.7233	300
26	Optimized	175.00205	473.53155	0	10261.231	5924.3244	300
27	Optimized	182.70495	469.9889	0	10354.879	5978.3924	300
28	Optimized	190.40785	466.44625	0	10450.297	6033.4818	300
29	Optimized	198.11075	462.90355	0	10547.484	6089.5926	300
30	Optimized	205.81365	459.36085	0	10646.558	6146.793	300
31	Optimized	211.964	456.53225	0	10809.791	5747.6677	0
32	Optimized	214.83775	455.2106	0	11116.238	1760.6392	0
33	Optimized	217.7122	453.8886	0	10975.923	5836.002	0
34	Optimized	222.00235	451.9155	0	11107.513	5905.9695	0
35	Optimized	227.848	449.227	0	11083.428	0	10000

36	Optimized	235.5582	445.68095	0	11353.267	0	10000
37	Optimized	243.2684	442.1349	0	11624.049	0	10000
38	Optimized	250.9786	438.5889	0	11896.48	0	10000
39	Optimized	258.706	435.21975	0	12361.606	0	10000
40	Optimized	266.4506	432.0274	0	12600.363	0	10000
41	Optimized	274.1952	428.83505	0	12840.313	0	10000
42	Optimized	281.92415	426.939	0	14625.22	0	10000
43	Optimized	289.6375	426.3392	0	14591.613	0	10000
44	Optimized	296.9483	425.7707	0	14557.469	0	10000
45	Optimized	303.85655	425.2335	0	14525.719	0	10000
46	Optimized	310.7648	424.6963	0	14493.969	0	10000
47	Optimized	317.673	424.1591	0	14460.775	0	10000
48	Optimized	324.58125	423.6219	0	14427.438	0	10000
49	Optimized	331.4895	423.0847	0	14393.667	0	10000
50	Optimized	338.4433	422.82945	0	14785.42	0	10000
51	Optimized	345.4427	422.8561	0	14679.698	0	10000
52	Optimized	352.4421	422.88275	0	14572.546	0	10000
53	Optimized	359.4415	422.9094	0	14463.967	0	10000
54	Optimized	366.44095	422.936	0	14353.958	0	10000
55	Optimized	373.4404	422.96265	0	14242.521	0	10000
56	Optimized	380.4398	422.9893	0	14129.655	0	10000
57	Optimized	387.4392	423.01595	0	14015.218	0	10000
58	Optimized	394.4438	423.35245	0	14360.307	0	10000
59	Optimized	401.4536	423.9987	0	14158.59	0	10000
60	Optimized	408.4634	424.64495	0	13954.457	0	10000
61	Optimized	415.47325	425.29125	0	13747.909	0	10000
62	Optimized	422.4831	425.93755	0	13539.089	0	10000
63	Optimized	429.4929	426.5838	0	13327.854	0	10000
64	Optimized	436.5027	427.23005	0	13114.488	0	10000
65	Optimized	442.32635	427.9781	0	13399.744	0	10000
66	Optimized	448.0311	429.02345	0	13154.969	0	10000
67	Optimized	454.8031	430.2644	0	12869.266	0	10000
68	Optimized	461.5751	431.50535	0	12580.949	0	10000
69	Optimized	468.34715	432.74625	0	12290.307	0	10000
70	Optimized	475.1192	433.9872	0	11997.342	0	10000
71	Optimized	481.8912	435.22815	0	11702.198	0	10000

72	Optimized	488.9591	436.8215	0	11746.121	0	10000
73	Optimized	496.3229	438.76725	0	11327.822	0	10000
74	Optimized	503.68675	440.713	0	10907.159	0	10000
75	Optimized	511.0506	442.6588	0	10484.527	0	10000
76	Optimized	518.4144	444.6046	0	10059.926	0	10000
77	Optimized	525.7782	446.55035	0	9633.8805	0	10000
78	Optimized	533.14205	448.4961	0	9206.5221	0	10000
79	Optimized	537.1379	449.55195	0	8396.6969	4464.6029	0
80	Optimized	541.6183	450.66095	0	8098.3907	4305.9907	0
81	Optimized	546.1129	451.76775	0	7559.5108	1197.3089	0
82	Optimized	548.62165	452.3855	0	7448.7336	1179.7635	0
83	Optimized	554.71165	453.8852	0	7446.7431	3959.5035	0
84	Optimized	562.53035	455.8106	0	7069.9538	3759.1611	0
85	Optimized	570.349	457.736	0	6694.0338	3559.2809	0
86	Optimized	577.82205	459.5763	0	6407.4217	3699.3267	300
87	Optimized	585.36545	461.363	0	6047.403	3491.4698	300
88	Optimized	593.32475	463.1812	0	5712.6542	3298.2025	300
89	Optimized	601.28405	464.9994	0	5379.2528	3105.713	300
90	Optimized	609.24335	466.8176	0	5047.3211	2914.0722	300
91	Optimized	617.20265	468.6358	0	4717.1042	2723.4214	300
92	Optimized	625.16195	470.454	0	4388.6021	2533.7606	300
93	Optimized	632.8287	472.1441	0	4061.2823	2344.7825	300
94	Optimized	640.20285	473.7061	0	3772.47	2178.0366	300
95	Optimized	647.577	475.2681	0	3485.515	2012.363	300
96	Optimized	654.95115	476.8301	0	3200.152	1847.6086	300
97	Optimized	662.3253	478.3921	0	2916.6463	1683.9265	300
98	Optimized	669.69945	479.9541	0	2635.1305	1521.3933	300
99	Optimized	677.0736	481.51605	0	2355.4721	1359.9325	300
100	Optimized	684.44775	483.078	0	2077.8037	1199.6205	300
101	Optimized	691.8219	484.64	0	1802.1252	1040.4575	300
102	Optimized	699.19605	486.202	0	1528.4367	882.44336	300
103	Optimized	706.5702	487.764	0	1256.9505	725.70071	300
104	Optimized	713.94435	489.326	0	987.49404	570.12995	300
105	Optimized	721.3185	490.888	0	720.13369	415.76938	300
106	Optimized	728.69265	492.45	0	454.85619	262.61135	300
107	Optimized	732.94285	493.3503	0	278.71611	90.560353	19

108	Optimized	735.7585	493.9467	0	126.94312	67.496852	0

Slices of Slip Surface: 57

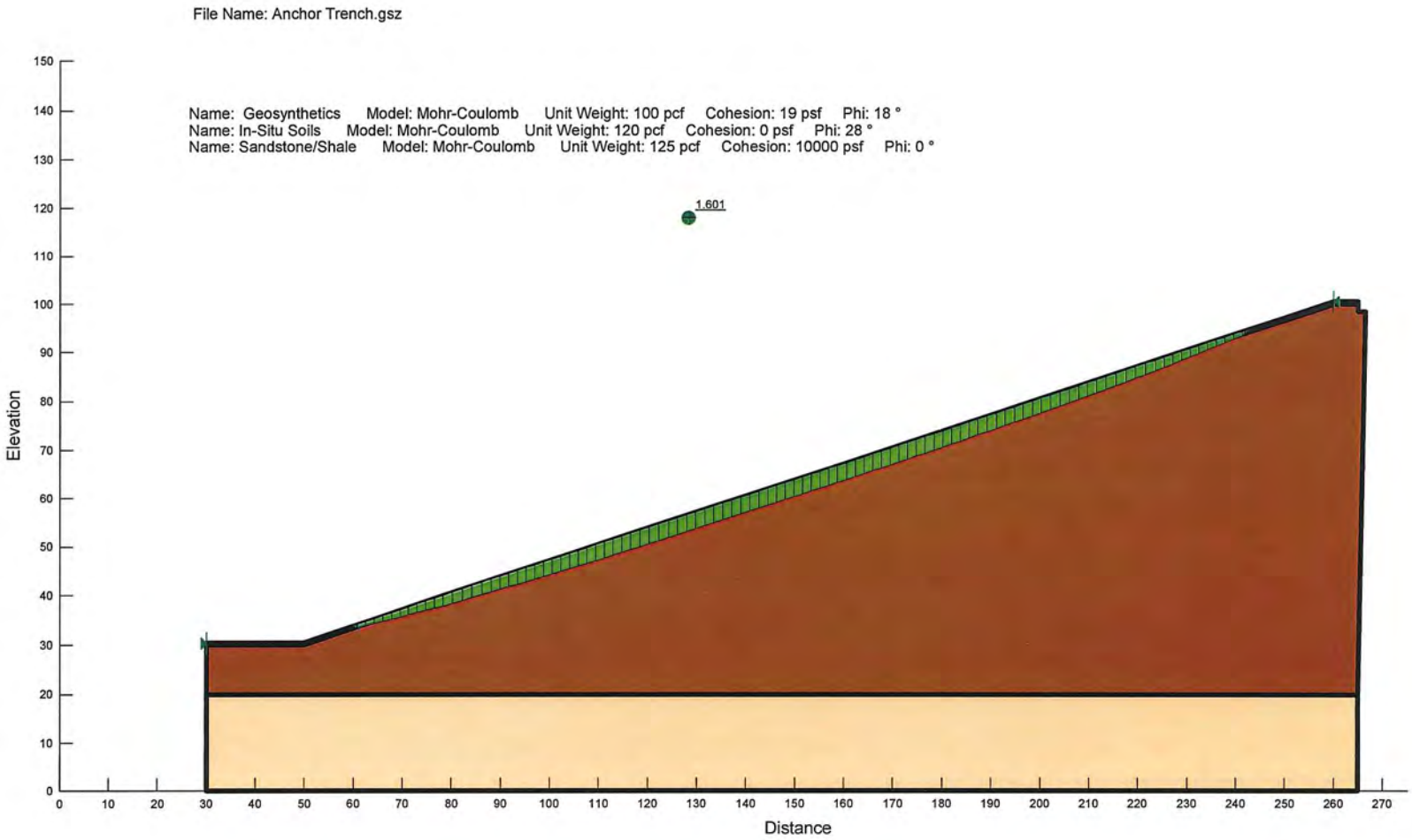
	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	57	34.88129	650.3274	0	94.842485	50.428644	0
2	57	38.493005	642.1021	0	500.52809	288.98003	300
3	57	44.772635	628.56165	0	1306.6466	754.39279	300
4	57	50.946485	616.4293	0	2025.9388	1169.6763	300
5	57	57.120335	605.23755	0	2689.3638	1552.7049	300
6	57	63.294185	594.83315	0	3305.389	1908.3673	300
7	57	69.468035	585.10245	0	3880.826	2240.596	300
8	57	75.64188	575.95825	0	4421.1389	2552.5458	300
9	57	81.815725	567.3318	0	4930.6882	2846.7341	300
10	57	87.989575	559.1679	0	5413.2569	3125.3453	300
11	57	94.163425	551.42135	0	5871.8351	3390.1056	300
12	57	100.50018	543.86965	0	6320.0715	3648.895	300
13	57	106.91835	536.58635	0	6712.6827	3875.5692	300
14	57	113.25505	529.7367	0	7034.5533	4061.4013	300
15	57	119.59175	523.1988	0	7340.3627	4237.9604	300
16	57	125.9284	516.95115	0	7631.6466	4406.1332	300
17	57	132.26505	510.97505	0	7909.7473	4566.6947	300
18	57	138.60175	505.2542	0	8175.8598	4720.3348	300
19	57	144.93845	499.7741	0	8430.9807	4867.629	300
20	57	151.27515	494.5218	0	8676.1075	5009.153	300
21	57	157.61185	489.4859	0	8911.9662	5145.3261	300
22	57	163.94855	484.65605	0	9139.357	5276.6102	300
23	57	170.2852	480.023	0	9358.8921	5403.3589	300
24	57	176.62185	475.57845	0	9571.2265	5525.9502	300
25	57	182.95855	471.31475	0	9776.7984	5644.6372	300
26	57	189.29525	467.225	0	9975.939	5759.611	300
27	57	195.63195	463.3029	0	10169.267	5871.2292	300
28	57	201.96865	459.5427	0	10356.887	5979.5512	300
29	57	207.0008	456.65595	0	10597.243	5634.6538	0
30	57	209.3385	455.3476	0	10989.011	1740.4884	0

31	57	211.74085	454.03735	0	10817.844	5751.9497	0
32	57	215.5471	451.9945	0	10998.568	5848.0423	0
33	57	220.59445	449.3791	0	10990.423	0	10000
34	57	226.9336	446.20815	0	11322.63	0	10000
35	57	233.27275	443.177	0	11642.456	0	10000
36	57	239.61185	440.28205	0	11950.317	0	10000
37	57	245.95095	437.52015	0	12246.534	0	10000
38	57	252.29005	434.88835	0	12531.622	0	10000
39	57	258.62915	432.38375	0	12805.703	0	10000
40	57	264.96825	430.00385	0	13069.218	0	10000
41	57	271.30735	427.7463	0	13322.055	0	10000
42	57	277.64645	425.60885	0	13564.412	0	10000
43	57	283.98555	423.58945	0	13796.519	0	10000
44	57	290.32465	421.68625	0	14018.171	0	10000
45	57	296.64315	419.903	0	14228.428	0	10000
46	57	302.94105	418.23735	0	14427.27	0	10000
47	57	309.239	416.68165	0	14615.716	0	10000
48	57	315.53695	415.2346	0	14793.464	0	10000
49	57	321.83485	413.895	0	14960.681	0	10000
50	57	328.13275	412.6617	0	15116.928	0	10000
51	57	334.43065	411.5337	0	15262.08	0	10000
52	57	340.7286	410.5101	0	15395.871	0	10000
53	57	347.02655	409.59015	0	15517.878	0	10000
54	57	353.32445	408.77305	0	15627.849	0	10000
55	57	359.62235	408.05815	0	15725.54	0	10000
56	57	365.9203	407.44495	0	15810.555	0	10000
57	57	372.21825	406.93295	0	15881.716	0	10000
58	57	378.51615	406.52175	0	15941.022	0	10000
59	57	384.81405	406.211	0	15985.257	0	10000
60	57	391.11195	406.00055	0	16015.967	0	10000
61	57	397.4099	405.8902	0	16031.539	0	10000
62	57	403.70785	405.87985	0	16031.957	0	10000
63	57	410.00575	405.9695	0	16017.223	0	10000
64	57	416.30365	406.1592	0	15985.761	0	10000
65	57	422.60155	406.44915	0	15937.602	0	10000
66	57	428.8995	406.83955	0	15872.792	0	10000

67	57	435.19745	407.33065	0	15790.765	0	10000
68	57	441.49575	407.9229	0	15690.869	0	10000
69	57	447.8262	408.62085	0	15579.951	0	10000
70	57	454.18845	409.42595	0	15457.611	0	10000
71	57	460.5507	410.3359	0	15315.69	0	10000
72	57	466.91295	411.35145	0	15154.204	0	10000
73	57	473.2752	412.47335	0	14972.415	0	10000
74	57	479.63745	413.7026	0	14770.238	0	10000
75	57	485.9997	415.0402	0	14547.157	0	10000
76	57	492.3619	416.48725	0	14303.002	0	10000
77	57	498.72415	418.04505	0	14037.483	0	10000
78	57	505.0864	419.7149	0	13750.505	0	10000
79	57	511.44865	421.49825	0	13441.707	0	10000
80	57	517.8109	423.39675	0	13111.083	0	10000
81	57	524.17315	425.41215	0	12758.369	0	10000
82	57	530.5354	427.5463	0	12383.799	0	10000
83	57	536.89765	429.80125	0	11987.214	0	10000
84	57	543.37735	432.22545	0	11559.261	0	10000
85	57	550.5916	435.08345	0	11088.144	0	10000
86	57	557.55625	437.98265	0	10626.989	0	10000
87	57	563.6541	440.65865	0	10197.705	0	10000
88	57	569.75195	443.45815	0	9749.0253	0	10000
89	57	575.8498	446.38405	0	9280.8716	0	10000
90	57	581.94765	449.4395	0	8793.6799	0	10000
91	57	588.28765	452.7601	0	7468.0394	3970.827	0
92	57	594.8698	456.36115	0	6865.8408	3650.6323	0
93	57	600.5949	459.6172	0	6323.7806	3362.4138	0
94	57	603.6205	461.3833	0	5705.9932	903.74054	0
95	57	606.2537	462.96695	0	5782.2373	3074.4701	0
96	57	611.6148	466.2765	0	5404.6751	3120.3907	300
97	57	618.2538	470.52325	0	4870.6937	2812.0963	300
98	57	624.8928	474.9596	0	4321.3543	2494.9351	300
99	57	631.5318	479.59335	0	3757.0643	2169.1421	300
100	57	638.1708	484.4331	0	3178.0768	1834.8635	300
101	57	644.8098	489.48845	0	2584.661	1492.2547	300
102	57	651.4488	494.7701	0	1977.0311	1141.4394	300

103	57	658.0878	500.28985	0	1355.5254	782.61295	300
104	57	664.7268	506.061	0	720.13797	415.77185	300
105	57	668.26905	509.21395	0	295.41031	95.984628	19
106	57	669.3774	510.2291	0	137.65989	73.195062	0

ANCHOR TRENCH SECTIONS
WITH CORRESPONDING ANALYSIS


File Name: Anchor Trench.gsz
Name: Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: In-Situ Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
1.601
Elevation
Distance
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 60
Last Edited By: Sonawane, Richa
Date: 10/29/2013
Time: 2:57:57 PM
File Name: Anchor Trench.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/29/2013
Last Solved Time: 2:58:04 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

In-Situ Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (30, 30.5) ft
Right Coordinate: (260, 100.5) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.601	(-329.81, 1523.68)	88.89537	(242.57, 94.6899)	(59.9121, 33.804)

2	91	1.608	(-329.81, 1523.68)	1540.554	(260, 100.5)	(52.2483, 31.2494)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	60.289715	33.679905	0	31.128647	10.114311	19
2	Optimized	60.73078	33.534935	0	62.246456	33.097028	0
3	Optimized	61.66671	33.730515	0	64.025479	34.042951	0
4	Optimized	63.411705	34.16336	0	80.695131	42.906362	0
5	Optimized	65.1567	34.596205	0	97.403717	51.790475	0
6	Optimized	66.901695	35.02905	0	114.16792	60.704162	0
7	Optimized	68.64669	35.46189	0	130.97663	69.641509	0
8	Optimized	70.39169	35.894735	0	147.82983	78.602515	0
9	Optimized	72.136685	36.32758	0	164.73309	87.590138	0
10	Optimized	73.88168	36.760425	0	181.68085	96.601421	0
11	Optimized	75.626675	37.19327	0	198.66754	105.6334	0
12	Optimized	77.37167	37.626115	0	215.69873	114.68905	0
13	Optimized	79.235765	38.12393	0	226.37962	120.36818	0
14	Optimized	81.218955	38.68671	0	237.48322	126.27207	0
15	Optimized	83.20214	39.249485	0	248.60138	132.1837	0
16	Optimized	85.185325	39.81226	0	259.72924	138.10048	0
17	Optimized	87.168515	40.37504	0	270.86679	144.02243	0
18	Optimized	89.04518	40.91992	0	278.12866	147.88363	0
19	Optimized	90.81532	41.446895	0	285.22157	151.655	0
20	Optimized	92.58546	41.97387	0	292.31448	155.42637	0
21	Optimized	94.355595	42.50085	0	299.40739	159.19773	0
22	Optimized	96.12573	43.02783	0	306.5003	162.9691	0
23	Optimized	97.89587	43.554805	0	313.58779	166.73759	0
24	Optimized	99.66602	44.08178	0	320.67529	170.50608	0
25	Optimized	101.43555	44.62428	0	322.81733	171.64502	0
26	Optimized	103.2045	45.182295	0	326.29463	173.49393	0
27	Optimized	104.9735	45.74031	0	329.77193	175.34285	0
28	Optimized	106.74245	46.29833	0	333.24384	177.18889	0
29	Optimized	108.5114	46.856345	0	336.71036	179.03207	0

30	Optimized	110.2804	47.41436	0	340.17148	180.87239	0
31	Optimized	112.04935	47.97238	0	343.62722	182.70983	0
32	Optimized	113.8183	48.530395	0	347.07217	184.54155	0
33	Optimized	115.58725	49.08841	0	350.51712	186.37326	0
34	Optimized	117.43775	49.67806	0	352.12503	187.2282	0
35	Optimized	119.3698	50.299335	0	354.54437	188.51459	0
36	Optimized	121.30185	50.92061	0	356.95878	189.79835	0
37	Optimized	123.2339	51.541885	0	359.36827	191.0795	0
38	Optimized	125.12325	52.15618	0	359.28627	191.0359	0
39	Optimized	126.96995	52.763505	0	360.07846	191.45711	0
40	Optimized	128.81665	53.370835	0	360.8655	191.87559	0
41	Optimized	130.66335	53.97816	0	361.65254	192.29406	0
42	Optimized	132.51005	54.58548	0	362.43958	192.71254	0
43	Optimized	134.35675	55.192805	0	363.22147	193.12828	0
44	Optimized	136.20345	55.800135	0	363.99822	193.54129	0
45	Optimized	138.0501	56.40746	0	364.77498	193.9543	0
46	Optimized	139.89675	57.014785	0	365.54658	194.36457	0
47	Optimized	141.74345	57.62211	0	366.32334	194.77757	0
48	Optimized	143.55625	58.22263	0	365.40282	194.28812	0
49	Optimized	145.33515	58.816355	0	365.19486	194.17755	0
50	Optimized	147.11405	59.41008	0	364.99223	194.06981	0
51	Optimized	148.89295	60.0038	0	364.78427	193.95924	0
52	Optimized	150.67185	60.59752	0	364.58164	193.8515	0
53	Optimized	152.45075	61.19124	0	364.37901	193.74376	0
54	Optimized	154.22965	61.784965	0	364.17638	193.63602	0
55	Optimized	156.0085	62.37869	0	363.97375	193.52828	0
56	Optimized	157.79075	62.97779	0	362.14994	192.55854	0
57	Optimized	159.5764	63.582275	0	361.0413	191.96906	0
58	Optimized	161.36205	64.18676	0	359.93265	191.37959	0
59	Optimized	163.1477	64.79124	0	358.82931	190.79293	0
60	Optimized	164.93335	65.39572	0	357.72598	190.20627	0
61	Optimized	166.719	66.0002	0	356.62794	189.62244	0
62	Optimized	168.50465	66.604685	0	355.53521	189.04142	0
63	Optimized	170.2903	67.20917	0	354.44248	188.46041	0
64	Optimized	172.0758	67.81893	0	351.42914	186.85819	0
65	Optimized	173.8612	68.433965	0	349.22619	185.68686	0

66	Optimized	175.6466	69.049	0	347.02853	184.51834	0
67	Optimized	177.432	69.66404	0	344.83087	183.34983	0
68	Optimized	179.2174	70.27908	0	342.64381	182.18694	0
69	Optimized	181.00285	70.894115	0	340.46204	181.02688	0
70	Optimized	182.7883	71.50915	0	338.28556	179.86962	0
71	Optimized	184.5737	72.12419	0	336.11438	178.71519	0
72	Optimized	186.3889	72.75647	0	331.65492	176.34405	0
73	Optimized	188.2339	73.40599	0	327.97395	174.38684	0
74	Optimized	190.0789	74.055515	0	324.2981	172.43236	0
75	Optimized	191.92395	74.70504	0	320.63247	170.48331	0
76	Optimized	193.769	75.35456	0	316.96684	168.53426	0
77	Optimized	195.614	76.00408	0	313.31144	166.59065	0
78	Optimized	197.459	76.653605	0	309.66115	164.64976	0
79	Optimized	199.304	77.30313	0	306.01086	162.70886	0
80	Optimized	201.149	77.95265	0	302.3708	160.7734	0
81	Optimized	203.0214	78.62389	0	295.41269	157.07371	0
82	Optimized	204.92115	79.31685	0	289.2016	153.77122	0
83	Optimized	206.8209	80.00981	0	282.9905	150.46872	0
84	Optimized	208.72065	80.70277	0	276.77941	147.16622	0
85	Optimized	210.6204	81.39573	0	270.57326	143.86635	0
86	Optimized	212.52015	82.08869	0	264.37206	140.56912	0
87	Optimized	214.46905	82.80969	0	255.73747	135.97802	0
88	Optimized	216.46715	83.55873	0	247.15212	131.41311	0
89	Optimized	218.46525	84.30777	0	238.56677	126.8482	0
90	Optimized	220.46335	85.05681	0	229.97674	122.2808	0
91	Optimized	222.46145	85.80585	0	221.37733	117.70841	0
92	Optimized	224.35275	86.54297	0	207.61693	110.39188	0
93	Optimized	226.1373	87.268165	0	194.25444	103.28692	0
94	Optimized	227.92185	87.99336	0	180.86081	96.165396	0
95	Optimized	229.7064	88.718555	0	167.4464	89.032833	0
96	Optimized	231.491	89.44375	0	154.00086	81.883707	0
97	Optimized	233.27555	90.16895	0	140.51897	74.71526	0
98	Optimized	235.0601	90.894145	0	127.01112	67.533011	0
99	Optimized	236.8447	91.61934	0	113.47213	60.334201	0
100	Optimized	238.62925	92.344535	0	99.901988	53.118829	0
101	Optimized	240.4138	93.06973	0	86.295507	45.884135	0

102	Optimized	241.5602	93.68522	0	52.527734	27.929492	0
103	Optimized	242.19205	94.31402	0	10.991774	3.5714439	19

Slices of Slip Surface: 91

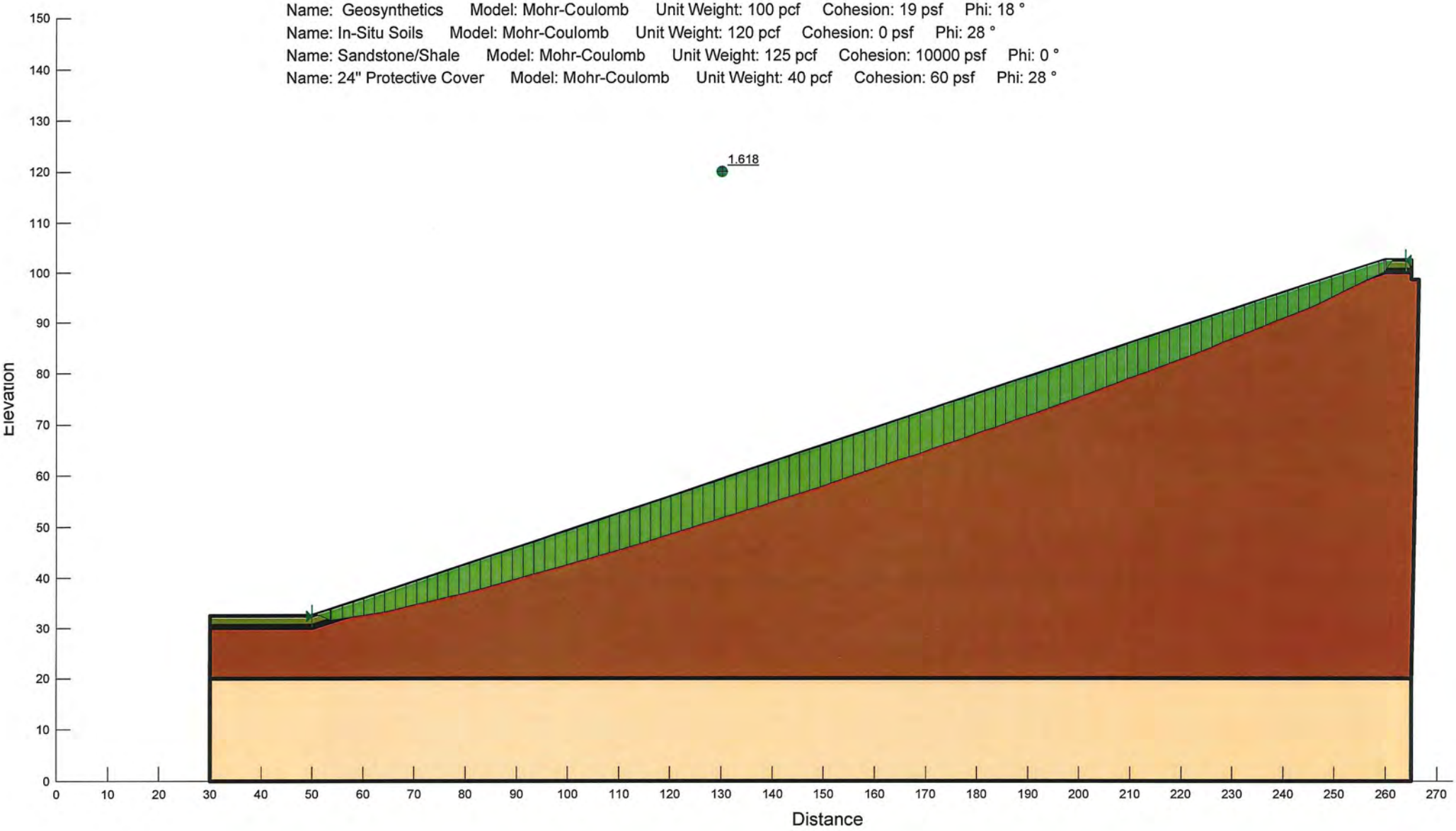
	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	91	53.36014	31.53495	0	5.2857139	1.7174325	19
2	91	55.583805	32.107735	0	21.419502	6.9596182	19
3	91	57.80747	32.684055	0	37.187388	12.082915	19
4	91	59.95499	33.243945	0	54.543663	29.00138	0
5	91	62.02637	33.787175	0	70.855694	37.674641	0
6	91	64.09775	34.33348	0	86.824257	46.165276	0
7	91	66.16913	34.882865	0	102.44967	54.473454	0
8	91	68.24051	35.43534	0	117.73677	62.60175	0
9	91	70.31189	35.990905	0	132.67655	70.545372	0
10	91	72.38327	36.549565	0	147.26929	78.30447	0
11	91	74.45465	37.11132	0	161.51536	85.87924	0
12	91	76.52603	37.67617	0	175.41025	93.267283	0
13	91	78.59741	38.244125	0	188.94967	100.46632	0
14	91	80.66879	38.81519	0	202.14316	107.48142	0
15	91	82.74017	39.389365	0	214.97259	114.30295	0
16	91	84.81155	39.96665	0	227.45205	120.9384	0
17	91	86.88293	40.547055	0	239.56813	127.38063	0
18	91	88.95431	41.13058	0	251.33024	133.63466	0
19	91	91.02569	41.71723	0	262.72954	139.69577	0
20	91	93.09707	42.30701	0	273.76637	145.56416	0
21	91	95.16845	42.89992	0	284.43633	151.23748	0
22	91	97.23983	43.49597	0	294.74917	156.72091	0
23	91	99.31121	44.09516	0	304.69134	162.00726	0
24	91	101.3826	44.697495	0	314.26786	167.09919	0
25	91	103.454	45.302975	0	323.4836	171.99928	0
26	91	105.52535	45.911605	0	332.32981	176.70289	0
27	91	107.5967	46.52339	0	340.80688	181.21023	0
28	91	109.6681	47.138335	0	348.91506	185.52143	0
29	91	111.7395	47.756445	0	356.65953	189.63924	0

30	91	113.8109	48.377725	0	364.03144	193.55895	0
31	91	115.88225	49.002175	0	371.04028	197.28562	0
32	91	117.9536	49.629795	0	377.67722	200.81454	0
33	91	120.025	50.2606	0	383.94747	204.14849	0
34	91	122.0964	50.894585	0	389.84685	207.28525	0
35	91	124.1678	51.531755	0	395.38483	210.22984	0
36	91	126.23915	52.172125	0	400.5528	212.9777	0
37	91	128.3105	52.81569	0	405.35564	215.53142	0
38	91	130.3819	53.46245	0	409.79396	217.89131	0
39	91	132.4533	54.112415	0	413.86342	220.05508	0
40	91	134.5247	54.76559	0	417.56908	222.02542	0
41	91	136.59605	55.421975	0	420.9162	223.80511	0
42	91	138.6674	56.08158	0	423.89582	225.38941	0
43	91	140.7388	56.744405	0	426.51782	226.78355	0
44	91	142.8102	57.410455	0	428.77787	227.98524	0
45	91	144.8816	58.07974	0	430.67644	228.99473	0
46	91	146.95295	58.752255	0	432.2232	229.81715	0
47	91	149.0243	59.42801	0	433.40504	230.44555	0
48	91	151.0957	60.10701	0	434.23602	230.88739	0
49	91	153.1671	60.789255	0	434.71205	231.1405	0
50	91	155.2385	61.474755	0	434.82903	231.2027	0
51	91	157.30985	62.163515	0	434.59682	231.07923	0
52	91	159.3812	62.855535	0	434.01572	230.77025	0
53	91	161.4526	63.55082	0	433.08146	230.2735	0
54	91	163.524	64.249375	0	431.79951	229.59187	0
55	91	165.5954	64.95121	0	430.1702	228.72555	0
56	91	167.66675	65.656325	0	428.19402	227.6748	0
57	91	169.7381	66.36472	0	425.87171	226.44	0
58	91	171.8095	67.07641	0	423.20338	225.02123	0
59	91	173.8809	67.791395	0	420.18977	223.41886	0
60	91	175.9523	68.50968	0	416.83596	221.63561	0
61	91	178.02365	69.23127	0	413.13793	219.66934	0
62	91	180.095	69.956165	0	409.10079	217.52275	0
63	91	182.1664	70.684375	0	404.72506	215.19613	0
64	91	184.2378	71.41591	0	400.00655	212.68726	0
65	91	186.3092	72.15077	0	394.95075	209.99904	0

66	91	188.38055	72.888955	0	389.55329	207.12916	0
67	91	190.4519	73.630475	0	383.81965	204.08053	0
68	91	192.5233	74.375335	0	377.74548	200.85083	0
69	91	194.5947	75.12354	0	371.33592	197.44281	0
70	91	196.6661	75.875095	0	364.58733	193.85452	0
71	91	198.73745	76.630005	0	357.49996	190.0861	0
72	91	200.8088	77.38828	0	350.07911	186.14037	0
73	91	202.8802	78.14992	0	342.31614	182.01272	0
74	91	204.9516	78.91493	0	334.21635	177.70598	0
75	91	207.023	79.683315	0	325.77581	173.21807	0
76	91	209.09435	80.455085	0	316.99951	168.55163	0
77	91	211.1657	81.230245	0	307.87917	163.70226	0
78	91	213.2371	82.00879	0	298.42432	158.67503	0
79	91	215.3085	82.790735	0	288.62218	153.46314	0
80	91	217.37985	83.57609	0	278.48229	148.07166	0
81	91	219.4512	84.36485	0	267.9964	142.49621	0
82	91	221.5226	85.157025	0	257.16505	136.73708	0
83	91	223.594	85.952625	0	245.98902	130.79468	0
84	91	225.6654	86.751645	0	234.46425	124.66685	0
85	91	227.73675	87.5541	0	222.59626	118.35653	0
86	91	229.8081	88.359995	0	210.37192	111.85673	0
87	91	231.8795	89.16933	0	197.80113	105.17273	0
88	91	233.9509	89.982115	0	184.87543	98.30001	0
89	91	236.0223	90.798355	0	171.5913	91.236712	0
90	91	238.09365	91.61806	0	157.95371	83.98548	0
91	91	240.165	92.441235	0	143.95452	76.541978	0
92	91	242.2364	93.26788	0	129.59454	68.90664	0
93	91	244.3078	94.098	0	114.8744	61.079803	0
94	91	246.3792	94.931605	0	99.786029	53.057173	0
95	91	248.45055	95.768705	0	84.330147	44.839134	0
96	91	250.5219	96.609305	0	68.507516	36.426093	0
97	91	252.5933	97.45341	0	52.314533	27.81613	0
98	91	254.69085	98.311765	0	34.385272	11.172452	19
99	91	256.8145	99.184465	0	19.100515	6.2061335	19
100	91	258.93815	100.06087	0	3.4237324	1.1124381	19

File Name: Anchor Trench2.gsz

Name: Geosynthetics Model: Mohr-Coulomb Unit Weight: 100 pcf Cohesion: 19 psf Phi: 18 °
Name: In-Situ Soils Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 0 psf Phi: 28 °
Name: Sandstone/Shale Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 10000 psf Phi: 0 °
Name: 24" Protective Cover Model: Mohr-Coulomb Unit Weight: 40 pcf Cohesion: 60 psf Phi: 28 °



SLOPE/W Analysis

File Information

Created By: Fureigh, Brad N.
Revision Number: 55
Last Edited By: Sonawane, Richa
Date: 10/29/2013
Time: 2:52:56 PM
File Name: Anchor Trench2.gsz
Directory: N:\Projects\2013\35137109\Working Files\Task 3 Slope Stability\Section A-A'\
Last Solved Date: 10/29/2013
Last Solved Time: 2:53:16 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
    Side Function
        Interslice force function option: Half-Sine
    PWP Conditions Source: (none)
SlipSurface
    Direction of movement: Right to Left
    Use Passive Mode: No
    Slip Surface Option: Auto-Search
    Critical slip surfaces saved: 1
    Optimize Critical Slip Surface Location: Yes
FOS Distribution
    FOS Calculation Option: Constant
Advanced
    Number of Slices: 100

Optimization Tolerance: 0.01
Minimum Slip Surface Depth: 0.1 ft
Optimization Maximum Iterations: 10000
Optimization Convergence Tolerance: 1e-007
Starting Optimization Points: 8
Ending Optimization Points: 16
Complete Passes per Insertion: 1
Driving Side Maximum Convex Angle: 5 °
Resisting Side Maximum Convex Angle: 1 °

Materials

Geosynthetics

Model: Mohr-Coulomb
Unit Weight: 100 pcf
Cohesion: 19 psf
Phi: 18 °
Phi-B: 0 °

In-Situ Soils

Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 0 psf
Phi: 28 °
Phi-B: 0 °

Sandstone/Shale

Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 10000 psf
Phi: 0 °
Phi-B: 0 °

24" Protective Cover

Model: Mohr-Coulomb
Unit Weight: 40 pcf
Cohesion: 60 psf
Phi: 28 °
Phi-B: 0 °

Slip Surface Limits

Left Coordinate: (50, 32.5) ft
Right Coordinate: (264, 102.5) ft

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.618	(-2.008, 553.611)	103.2716	(261.347, 102.5)	(50.8576, 32.7859)
2	92	1.641	(-2.008, 553.611)	523.7	(264, 102.5)	(50, 32.5)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	52.21325	32.23775	0	65.021302	34.57244	60
2	Optimized	53.64153	31.66029	0	100.96025	32.803972	19
3	Optimized	54.827885	31.805745	0	107.10613	34.80089	19
4	Optimized	56.979575	32.14345	0	147.16247	78.247674	0
5	Optimized	59.055445	32.469255	0	189.93634	100.99094	0
6	Optimized	61.131315	32.79506	0	232.96719	123.87085	0
7	Optimized	63.207185	33.120865	0	276.25979	146.88994	0
8	Optimized	65.280865	33.530035	0	300.17823	159.6076	0
9	Optimized	67.35235	34.02256	0	323.01742	171.75141	0
10	Optimized	69.423835	34.515085	0	345.91297	183.92519	0
11	Optimized	71.495325	35.00761	0	368.86487	196.12893	0
12	Optimized	73.566815	35.500135	0	391.87783	208.36514	0
13	Optimized	75.638305	35.992665	0	414.93776	220.62632	0
14	Optimized	77.70979	36.48519	0	438.05404	232.91747	0
15	Optimized	79.781275	36.977715	0	461.2126	245.23109	0
16	Optimized	81.86682	37.519615	0	469.36045	249.56338	0
17	Optimized	83.96642	38.110885	0	481.73859	256.14495	0
18	Optimized	86.06602	38.70215	0	494.16256	262.7509	0
19	Optimized	88.16562	39.293415	0	506.5407	269.33247	0
20	Optimized	90.26522	39.884685	0	518.96467	275.93841	0
21	Optimized	92.36482	40.475955	0	531.34281	282.51998	0
22	Optimized	94.464425	41.06722	0	543.72094	289.10155	0
23	Optimized	96.56403	41.658485	0	556.09907	295.68312	0
24	Optimized	98.66363	42.249755	0	568.47721	302.26469	0

25	Optimized	100.76322	42.841025	0	580.85534	308.84626	0
26	Optimized	102.8628	43.43229	0	593.18763	315.40346	0
27	Optimized	104.9624	44.023555	0	605.51991	321.96065	0
28	Optimized	107.062	44.614825	0	617.8522	328.51784	0
29	Optimized	109.11705	45.21717	0	618.57642	328.90292	0
30	Optimized	111.1275	45.83059	0	624.76123	332.19144	0
31	Optimized	113.1379	46.44401	0	630.94604	335.47996	0
32	Optimized	115.1483	47.057435	0	637.08328	338.74319	0
33	Optimized	117.1587	47.67086	0	643.26809	342.03171	0
34	Optimized	119.16915	48.28428	0	649.40533	345.29494	0
35	Optimized	121.1796	48.8977	0	655.49499	348.53287	0
36	Optimized	123.25625	49.544445	0	655.28065	348.4189	0
37	Optimized	125.3991	50.22452	0	658.7501	350.26364	0
38	Optimized	127.54195	50.904595	0	662.26403	352.13203	0
39	Optimized	129.68485	51.584665	0	665.68899	353.95312	0
40	Optimized	131.8277	52.264735	0	669.15844	355.79785	0
41	Optimized	133.97055	52.94481	0	672.58341	357.61894	0
42	Optimized	136.11345	53.624885	0	676.00837	359.44003	0
43	Optimized	138.1947	54.289965	0	676.81066	359.86661	0
44	Optimized	140.21435	54.940055	0	679.02585	361.04445	0
45	Optimized	142.23405	55.590145	0	681.1939	362.19722	0
46	Optimized	144.2537	56.240235	0	683.36196	363.35	0
47	Optimized	146.27335	56.890325	0	685.53001	364.50277	0
48	Optimized	148.29305	57.540415	0	687.69807	365.65555	0
49	Optimized	150.38985	58.22527	0	684.68953	364.05588	0
50	Optimized	152.56375	58.944895	0	684.82054	364.12554	0
51	Optimized	154.7377	59.66452	0	684.99522	364.21842	0
52	Optimized	156.91165	60.38414	0	685.12622	364.28808	0
53	Optimized	159.08555	61.103765	0	685.25723	364.35773	0
54	Optimized	161.2595	61.82339	0	685.43191	364.45061	0
55	Optimized	163.43345	62.54301	0	685.56292	364.52027	0
56	Optimized	165.60735	63.262635	0	685.73759	364.61315	0
57	Optimized	167.7813	63.98226	0	685.8686	364.6828	0
58	Optimized	170.0299	64.74334	0	677.85094	360.41974	0
59	Optimized	172.3531	65.545875	0	674.4741	358.62424	0
60	Optimized	174.5244	66.30031	0	669.06734	355.74942	0

61	Optimized	176.5438	67.00665	0	665.23449	353.71145	0
62	Optimized	178.56325	67.712985	0	661.49511	351.72319	0
63	Optimized	180.5827	68.41932	0	657.709	349.71008	0
64	Optimized	182.6021	69.12566	0	653.96963	347.72182	0
65	Optimized	184.62155	69.832	0	650.23025	345.73356	0
66	Optimized	186.641	70.538335	0	646.49088	343.7453	0
67	Optimized	188.6604	71.24467	0	642.79825	341.78189	0
68	Optimized	190.67985	71.95101	0	639.10562	339.81848	0
69	Optimized	192.84485	72.721675	0	629.39084	334.65305	0
70	Optimized	195.1554	73.55666	0	622.47132	330.97387	0
71	Optimized	197.466	74.391645	0	615.59251	327.31635	0
72	Optimized	199.7766	75.22663	0	608.7137	323.65882	0
73	Optimized	202.08715	76.061615	0	601.8756	320.02293	0
74	Optimized	204.27335	76.865855	0	589.4122	313.39602	0
75	Optimized	206.33525	77.63935	0	580.51198	308.6637	0
76	Optimized	208.39715	78.412845	0	571.61177	303.93137	0
77	Optimized	210.45905	79.186335	0	562.75696	299.22318	0
78	Optimized	212.52095	79.95983	0	553.90215	294.515	0
79	Optimized	214.5828	80.733325	0	545.09276	289.83096	0
80	Optimized	216.64465	81.506815	0	536.23795	285.12278	0
81	Optimized	218.70655	82.28031	0	527.42856	280.43874	0
82	Optimized	220.76845	83.053805	0	518.61916	275.7547	0
83	Optimized	222.8567	83.8701	0	498.76077	265.1958	0
84	Optimized	224.9713	84.729195	0	483.29498	256.9725	0
85	Optimized	227.0859	85.58829	0	467.82919	248.74919	0
86	Optimized	229.2005	86.44739	0	452.31958	240.50259	0
87	Optimized	231.3151	87.306485	0	436.81874	232.26065	0
88	Optimized	233.4297	88.16558	0	421.296	224.00706	0
89	Optimized	235.5443	89.02468	0	405.75135	215.74182	0
90	Optimized	237.65895	89.883775	0	390.18917	207.46726	0
91	Optimized	239.7736	90.74287	0	374.6007	199.17873	0
92	Optimized	241.8882	91.60197	0	358.99033	190.87855	0
93	Optimized	244.0028	92.461065	0	343.34929	182.56206	0
94	Optimized	246.1174	93.32016	0	327.67759	174.22926	0
95	Optimized	248.3213	94.329435	0	289.21732	153.77957	0
96	Optimized	250.61455	95.48889	0	250.09982	132.98043	0

97	Optimized	252.9078	96.648345	0	210.75272	112.05921	0
98	Optimized	255.20105	97.807795	0	171.16824	91.011768	0
99	Optimized	257.4943	98.96725	0	131.3347	69.831901	0
100	Optimized	259.17525	99.81714	0	104.23034	33.86649	19
101	Optimized	259.8548	100.3012	0	60.158273	19.546608	19
102	Optimized	260.67365	101.50755	0	-9.7847056	-5.2026203	60

Slices of Slip Surface: 92

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	92	51.111615	32.61334	0	6.6047361	3.5118005	60
2	92	53.33485	32.844815	0	26.714489	14.204346	60
3	92	55.558085	33.085885	0	46.477339	24.712439	60
4	92	57.78132	33.336565	0	65.893132	35.036	60
5	92	60.061325	33.603775	0	103.07815	33.492122	19
6	92	62.29472	33.875005	0	153.2616	81.490636	0
7	92	64.424745	34.14297	0	204.80848	108.8986	0
8	92	66.55477	34.419815	0	255.33426	135.76363	0
9	92	68.684795	34.70555	0	304.82858	162.08023	0
10	92	70.81482	35.00019	0	353.27176	187.83793	0
11	92	72.944845	35.30375	0	400.64939	213.02906	0
12	92	75.07487	35.616245	0	446.94634	237.64558	0
13	92	77.204895	35.937695	0	492.15316	261.68248	0
14	92	79.33492	36.268115	0	536.22287	285.11476	0
15	92	81.464945	36.607525	0	579.20596	307.96927	0
16	92	83.59497	36.95594	0	621.00985	330.19679	0
17	92	85.72499	37.313375	0	661.68061	351.82182	0
18	92	87.855015	37.67985	0	701.17243	372.81999	0
19	92	89.98504	38.055385	0	739.48499	393.19114	0
20	92	92.115065	38.44	0	776.57285	412.91111	0
21	92	94.24509	38.83372	0	812.52827	432.02894	0
22	92	96.375115	39.23656	0	847.21417	450.47177	0
23	92	98.50514	39.64854	0	880.72338	468.28893	0
24	92	100.63518	40.06969	0	913.01035	485.45622	0
25	92	102.7652	40.500025	0	944.03023	501.94978	0

26	92	104.8952	40.93957	0	973.8308	517.79502	0
27	92	107.02525	41.388355	0	1002.3662	532.96757	0
28	92	109.1553	41.846395	0	1029.6849	547.49316	0
29	92	111.2853	42.313715	0	1055.7422	561.34806	0
30	92	113.4153	42.79035	0	1080.5395	574.53303	0
31	92	115.54535	43.27632	0	1104.1251	587.07374	0
32	92	117.6754	43.77165	0	1126.4087	598.92213	0
33	92	119.8054	44.27637	0	1147.4845	610.12832	0
34	92	121.9354	44.790505	0	1167.3086	620.669	0
35	92	124.0654	45.31409	0	1185.8837	630.54554	0
36	92	126.19545	45.84715	0	1203.2118	639.75908	0
37	92	128.3255	46.38971	0	1219.2959	648.31115	0
38	92	130.4555	46.94181	0	1234.1389	656.20331	0
39	92	132.5855	47.50348	0	1247.7882	663.46074	0
40	92	134.71555	48.074745	0	1260.2026	670.0616	0
41	92	136.8456	48.65564	0	1271.4291	676.03083	0
42	92	138.9756	49.2462	0	1281.427	681.34681	0
43	92	141.1056	49.846455	0	1290.2433	686.03455	0
44	92	143.23565	50.456445	0	1297.8829	690.0966	0
45	92	145.3657	51.076205	0	1304.3484	693.53435	0
46	92	147.4957	51.70577	0	1309.6886	696.3738	0
47	92	149.6257	52.34518	0	1313.817	698.56888	0
48	92	151.75575	52.994465	0	1316.827	700.16933	0
49	92	153.8858	53.65367	0	1318.6786	701.15383	0
50	92	156.0158	54.322835	0	1319.4651	701.57201	0
51	92	158.1458	55.001995	0	1319.1007	701.37828	0
52	92	160.27585	55.69119	0	1317.6343	700.59857	0
53	92	162.4059	56.390465	0	1315.071	699.23566	0
54	92	164.5359	57.099865	0	1311.414	697.29118	0
55	92	166.6659	57.81943	0	1306.7137	694.792	0
56	92	168.79595	58.549205	0	1300.9734	691.7398	0
57	92	170.926	59.289235	0	1294.1542	688.11399	0
58	92	173.056	60.03957	0	1286.3047	683.94032	0
59	92	175.186	60.800255	0	1277.3865	679.19842	0
60	92	177.31605	61.571335	0	1267.4923	673.93759	0
61	92	179.4461	62.35286	0	1256.5388	668.11352	0

62	92	181.5761	63.14488	0	1244.6199	661.77613	0
63	92	183.7061	63.947445	0	1231.6534	654.88172	0
64	92	185.83615	64.76061	0	1217.7315	647.4793	0
65	92	187.9662	65.58443	0	1202.773	639.52577	0
66	92	190.0962	66.418955	0	1186.8714	631.07074	0
67	92	192.2262	67.264235	0	1169.945	622.07082	0
68	92	194.35625	68.120335	0	1152.0431	612.55221	0
69	92	196.4863	68.98731	0	1133.1729	602.51872	0
70	92	198.6163	69.865215	0	1113.3401	591.97345	0
71	92	200.7463	70.754115	0	1092.508	580.89682	0
72	92	202.87635	71.65407	0	1070.6834	569.29248	0
73	92	205.0064	72.56514	0	1047.8734	557.16417	0
74	92	207.1364	73.487385	0	1024.1286	544.53884	0
75	92	209.2664	74.42087	0	999.36981	531.37435	0
76	92	211.39645	75.365665	0	973.60476	517.67483	0
77	92	213.5265	76.32184	0	946.84182	503.44473	0
78	92	215.6565	77.28946	0	919.08829	488.68791	0
79	92	217.7865	78.268595	0	890.35288	473.40902	0
80	92	219.91655	79.259315	0	860.559	457.56733	0
81	92	222.0466	80.26169	0	829.7579	441.1901	0
82	92	224.1766	81.275795	0	797.91637	424.25966	0
83	92	226.3066	82.301715	0	765.00206	406.75881	0
84	92	228.43665	83.33952	0	731.06651	388.71496	0
85	92	230.5667	84.389285	0	696.03558	370.08868	0
86	92	232.6967	85.4511	0	659.87805	350.86338	0
87	92	234.8267	86.52504	0	622.68889	331.08956	0
88	92	236.95675	87.61119	0	584.31136	310.68386	0
89	92	239.0868	88.70964	0	544.84137	289.69729	0
90	92	241.2168	89.82047	0	504.20762	268.09195	0
91	92	243.3468	90.943775	0	462.38075	245.85221	0
92	92	245.47685	92.079645	0	419.3743	222.98527	0
93	92	247.6069	93.22817	0	375.15637	199.47418	0
94	92	249.7369	94.38945	0	329.6996	175.30439	0
95	92	251.8669	95.56358	0	282.98575	150.46619	0
96	92	253.99695	96.750655	0	234.99321	124.94811	0
97	92	256.127	97.95078	0	185.70101	98.738978	0

98	92	258.257	99.16406	0	135.07639	71.821392	0
99	92	259.661	99.96955	0	103.1965	33.530574	19
100	92	260.2894	100.33255	0	80.887787	26.282035	19
101	92	261.4341	100.99785	0	33.064616	17.580768	60
102	92	263.1447	101.99785	0	-0.99503039	-0.52906704	60

APPENDIX D
ANCHOR TRENCH ANALYSIS

Terracon

Made By: DCM	Date: 10.24.13	Sheet No.: 1 of 2
Checked By: FOC	Date: 10.25.13	Job No.: 35137109
Calculations for: Anchor Trench Stability Analysis		

Objective:

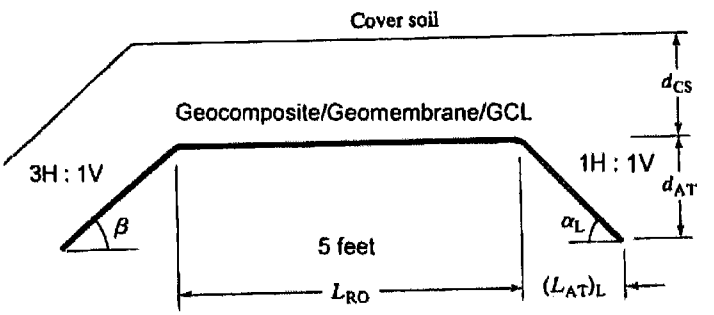
Determine the ability of the anchor trench to resist the weight of the geosynthetic components and to verify that the material will pull out of the anchor trench prior to geomembrane failure.

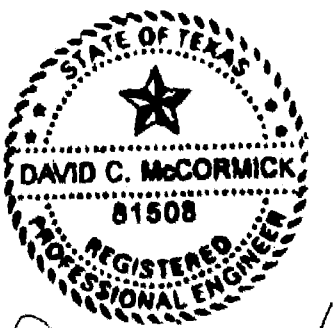
Assumptions:

- the anchor trench will have a 5 foot runout length
- anchor trench will be 1.5 foot deep
- the interior slope will be 3H : 1V or flatter
- the exterior slope will be 1H : 1V or flatter
- the deepest cut is approximately 70 foot deep (Phase 1, Cell 18)
- the composite liner system of future cells will consist of in-situ subgrade, a geosynthetic clay liner (GCL), a 60 mil HDPE geomembrane that is textured on both sides, a geocomposite with textile bonded on both sides, and 2 foot of protective cover.

Approach:

Calculations were performed in accordance with the procedures outline in the textbook "Geotechnical Aspects of Landfill Design and Construction" by Xuede Qian, Robert Koerner, and Donald Gray, 2002, pp. 104-119.





11-18-13 TX F3272
2 pages

Equation

$$T = \frac{\gamma_s \cdot d_{CS} \cdot L_{RO} \cdot \tan\delta_C + \gamma_s \cdot (d_{CS} + 0.5 \cdot d_{AT}) \cdot d_{AT} \cdot (\tan\delta_C + \tan\delta_F) \cdot (\cot\alpha_L + \cot\alpha_R)}{\cos\beta - \sin\beta \cdot \tan\delta_C}$$

T = geomembrane tensile force (i.e, anchor trench resistance force)
γ_s = unit weight of the cover and the backfill soil
d_{CS} = depth of cover soil
L_{RO} = runout length
$\tan\delta_C$ = tangent of the friction angle between the geosynthetic layers and the underlying soil
d_{AT} = anchor trench depth
$\tan\delta_F$ = tangent of the friction angle between the geosynthetic layers and the backfill soil
$\cot\alpha_L$ = cotangent of the left bottom angle of V-shaped anchor trench
$\cot\alpha_R$ = cotangent of the right bottom angle of V-shaped anchor trench
$\cos\beta$ = cosine of the sideslope angle
$\sin\beta$ = sine of the sideslope angle
L_t = Liner thickness

γ_s = 120 pcf
d_{CS} = 2 feet
L_{RO} = 5 feet
$\tan\delta_C$ = Tan (18°) = 0.3249
d_{AT} = 1.5 foot
$\tan\delta_F$ = Tan (18°) = 0.3249
$\cot\alpha_L$ = cot (45°) = 1
$\cot\alpha_R$ = Assume 0 to be conservative 0
$\cos\beta$ = cos (18.4°) = 0.9489
$\sin\beta$ = sine (18.4°) = 0.3156
L_t = 0.06 inches

Calculations:

$$T = \frac{\gamma_s \cdot d_{CS} \cdot L_{RO} \cdot \tan\delta_C + \gamma_s \cdot (d_{CS} + 0.5 \cdot d_{AT}) \cdot d_{AT} \cdot (\tan\delta_C + \tan\delta_F) \cdot (\cot\alpha_L + \cot\alpha_R)}{\cos\beta - \sin\beta \cdot \tan\delta_C}$$

T = 840.7 lb./ft.

T = 1167.6 lb./in.^{2}

Ultimate Strength (lb./in.^{2})	>	Runout and Anchor Trench Resistance Capacity (lb./in.^{2})	>	Allowable Strength (lb./in.^{2})
2100		1167.6		840

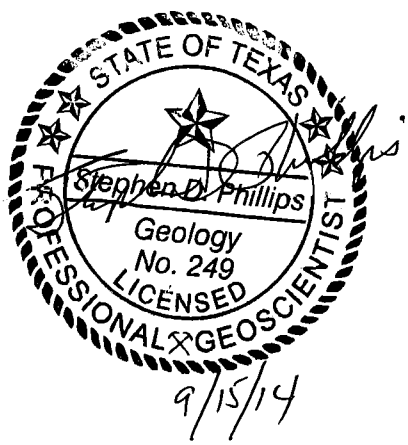
Note:
The ultimate strength is based off of material properties for standard 60 mil HDPE material. The allowable strength was calculated by dividing the ultimate strength by a 2.5 safety factor.

Summary

The results of the calculations indicate that the design anchor resistance capacity between the yield stress and the allowable stress of the geosynthetic layer system. Therefore, the anchor trench dimensions are acceptable. This assumes that the protective cover is being properly placed on the slopes using low groundpressure equipment and the equipment is backfilling up the slope.

City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014

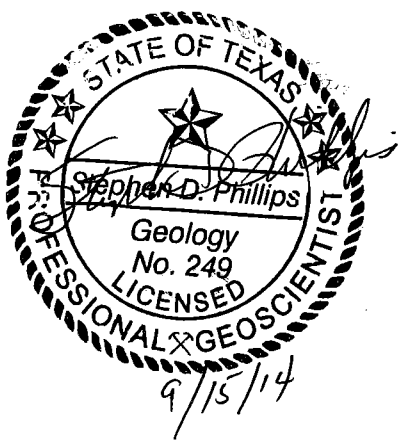
PART III
Attachment 5
Groundwater Characterization Report



Prepared by:
PS Phillips Environmental

LAREDO LANDFILL
PART III
Attachment 5
Groundwater Characterization Report

TABLE OF CONTENTS



1.0 Introduction

The Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste Rules under the authority of Texas Administrative Code (TAC) 330.63(e)(4), requires the owner or operator of a municipal solid waste facility that stores, processes, or disposes of municipal waste to characterize the groundwater under the facility in Part III, Attachment 5 of the Permit Amendment Application.

2.0 Site Hydrogeology

The Laredo Landfill is located on the north side of State Highway 359 about 3 miles east of Laredo, Texas in Webb County. Appendix 1 indicates the general location of the facility.

Previous ground water investigations at the Laredo facility have been described in a total of four reports prepared as part of three subsurface investigations and one ground water monitoring well installation effort. The initial subsurface investigation was performed by Frank G. Bryant & Associates, Inc. (Bryant), from which the report *Geotechnical Investigation, November 30, 1983* was produced. The second investigation was performed by Huntingdon Engineering and Environmental (Huntingdon) producing the *Final Report Groundwater Characterization Study,* October 1994. The installation of 10 ground water monitoring wells by the City of Laredo in August and September 1996 provided additional subsurface information in the *Monitoring Well Installation Report* of January 1997. A third, limited hydrogeological investigation was conducted by Rust Environment & Infrastructure, Inc. (REI) in April and May 1997, and a *Subsurface Investigation Report, May 1997* was produced further describing hydrogeologic conditions at the facility[1]. A groundwater characterization was also included in the June 1999 Permit Amendment Application for Vertical Expansion.

Surface elevations at the site range from 540 feet msl at the southwest comer of the site to 470 feet msl along the northeast corner of the site. A topographic map is included as Appendix 2.

The Laredo Landfill is located on an outcrop of the Laredo Formation (Appendix 3). The Laredo Formation is characterized as sandstone and clay with thick sandstone members in the upper and lower part which are very fine to fine-grained and are dominantly red and brown in color. A clay stratum occupies the middle of the formation. The average thickness beneath the site facility is about 620 feet. The site is not located on the outcrop of or above any recognized major or minor aquifer of Texas (Figures III.5.1 and III.5.2).

That part of the Laredo Formation that has been investigated beneath the facility has been divided into four layers. Layer I is the surficial unit consisting of sandy clay occasionally covered by silty sand and gravel alluvium. Prior to landfill startup, Layer I thickness ranges from 0 to 36 feet and averages about 20 feet in thickness across the site.

[1] Vertical Expansion Permit Amendment Application No. MSW-1693A, June 1999

Layer II is a sandstone. A water-bearing zone has been identified in this unit. Layer II thickness ranges from 40 feet near the northwestern portion of the facility to 63 feet thick near the southeastern portion of the facility with the thickest section near the center at 70 feet.

Layer III consists of a shale/claystone stratum present beneath the Layer II sandstone. Layer III was found to be a very dense claystone that was moist near the top and dry at its base. Layer III appears to be acting as an aquiclude between Layer II and Layer IV across the facility as Layer IV is dry and non-water bearing beneath the facility. Layer III ranges from 7 feet to 30.8 feet from the northwest to southeast.

Both Layers II and III tend to dip and thicken to the southeast. Most sedimentary strata in the southwest and the lower Gulf Coast of Texas generally dip and thicken in this direction.

Layer IV is a lower sandstone unit and the last strata encountered at the facility. This unit was dry where encountered augmenting the appearance that Layer III is an aquiclude and that Layer IV is hydraulically isolated from the Layer II water bearing unit.

Laboratory hydraulic conductivity test for Layer I ranged from 1.01×10^{-7} cm/sec near the surface to 7.32×10^{-8} cm/sec at 4 to 5 feet depth. Much of Layer I has been or will be removed during construction activities.

As noted previously, the uppermost water bearing unit at the facility is found in Layer II. Layer II is a greenish-gray sandstone. This sandstone is micaceous, glauconitic containing scattered fossils with occasional highly cemented calcareous layers. A water-bearing zone has been identified in the lower portion of this unit under unconfined to semiconfined flow conditions. Previous in-situ slug testing of the monitored groundwater interval produced hydraulic conductivities ranging up to $4 \times I0^{-4}$ cm/sec with a median value of 3.0×10^{-6} cm/sec. Groundwater flow velocity in Layer II is about 2 feet/year. Beneath Layer II is the shale/claystone unit designated as Layer III. This unit consists of shale/claystone and acts as an aquiclude between the upper water bearing sandstone (Layer II) and a lower non-water bearing sandstone (Layer IV). The Layer III hydraulic conductivity is about $5.7 \times I0^{-9}$ cm/sec. (REI 1997).

Groundwater elevations measured in the 17 monitoring wells at the facility ranged from a high of 483.05 feet above mean sea level (msl) in MW-4R1 (the background well) to a low of 429.14 feet msl in MW-11 during the November 2012 groundwater sampling event. A series of groundwater flow maps prepared by SCS Engineers using groundwater data from October 2004, 2006, and 2007 indicate flow from the southwestern corner (MW-4R1) toward the north, northeast, and east (Appendix 4). Groundwater elevations from more recent data (November 2011 and November 2012) substantiate the same directions. Appendix 5 presents the groundwater elevations for the 2007, 2011, and 2012 dates.

3.0 Groundwater Monitoring System

This section summarizes the current ground water monitoring program at the Laredo facility which has been implemented to meet the requirements of 30 TAC §330.403 relating to the Ground Water Monitoring Systems.

The current monitoring system consists of seventeen monitoring wells being sampled by the City. Fifteen of the monitoring wells are designated as downgradient point of compliance (POC) wells (MW-5, 6, 7, 11, and 13 – 23) and two wells (MW-4R1 and MW-12) as upgradient wells. These wells and the point of compliance boundary are presented in Appendix 6. All the monitoring wells are screened in Layer II, the uppermost water bearing unit at the facility. The previous monitoring well system did not meet the criteria of no more than 600 feet spacing between wells per 30 TAC § 330.403(a)(2).

The original ground water monitoring system design was approved by the TNRCC on July 11, 1995 and the certification of the installation of the system was submitted January 1997. Revisions to the ground water monitoring system design were requested in July 1997 by the TNRCC. The revisions to the system consisted of the replacement of MW-3 and MW-4 and the addition of wells MW-11 and MW-12. MW-3R2 and MW-4R1 were designed to more narrowly monitor the saturated zone found near the base of Layer 1I. The additional wells, MW-11 and MW-12, were designed to reduce the separation distance between monitoring points along the southern portion of the facility. Subsequent to the TNRCC approval in August 1997 of the revised system design, the two additional wells and the two replacement wells (M-11 & MW-12 and MW-3R2 & MW-4R) were installed in November and December 1997.[2] To meet the requirements of TAC § 330.403(a)(2), monitoring wells MW-1, 2, 3R2, 8, 9, and 10 were plugged and abandoned and replaced with monitoring wells MW-13 through 23.

4.0 Groundwater Sampling and Analysis Plan

On October 9, 1993 the State of Texas promulgated regulations governing all aspects of municipal solid waste management (30 Texas Administrative Code, Chapter 330). Subchapter J, Section 330.405(b) requires that the owners or operators of Municipal Solid Waste Landfills (MSWLFs) prepare and submit a Ground Water Sampling and Analysis Plan (GWSAP) to the TCEQ. The GWSAP was prepared initially in April 1996 by the City of Laredo's Environmental Engineering Division, and approved by the TNRCC on June 21, 1996. Revisions were made to the GWSAP as a part of the amendment permit submittal process. A revised GWSAP is included in Part III, Attachment 11 and deals with the Groundwater Sampling and Analysis Procedures and are prepared in compliance with the requirements of the Municipal Solid Waste Management Regulations as listed in 30 TAC, Chapter 330-Subchapter J, §§330.405, 330.407, 330.409, and 330.419, the reporting of groundwater sampling and analyses will be in accordance with §330.407 "Detection Monitoring Program for Type I Landfills", and Assessment Monitoring if a statistically significant increase over background for one or more of the constituents listed in §330.419. The GWSAP also discussed a proposed change based on an arid exemption.

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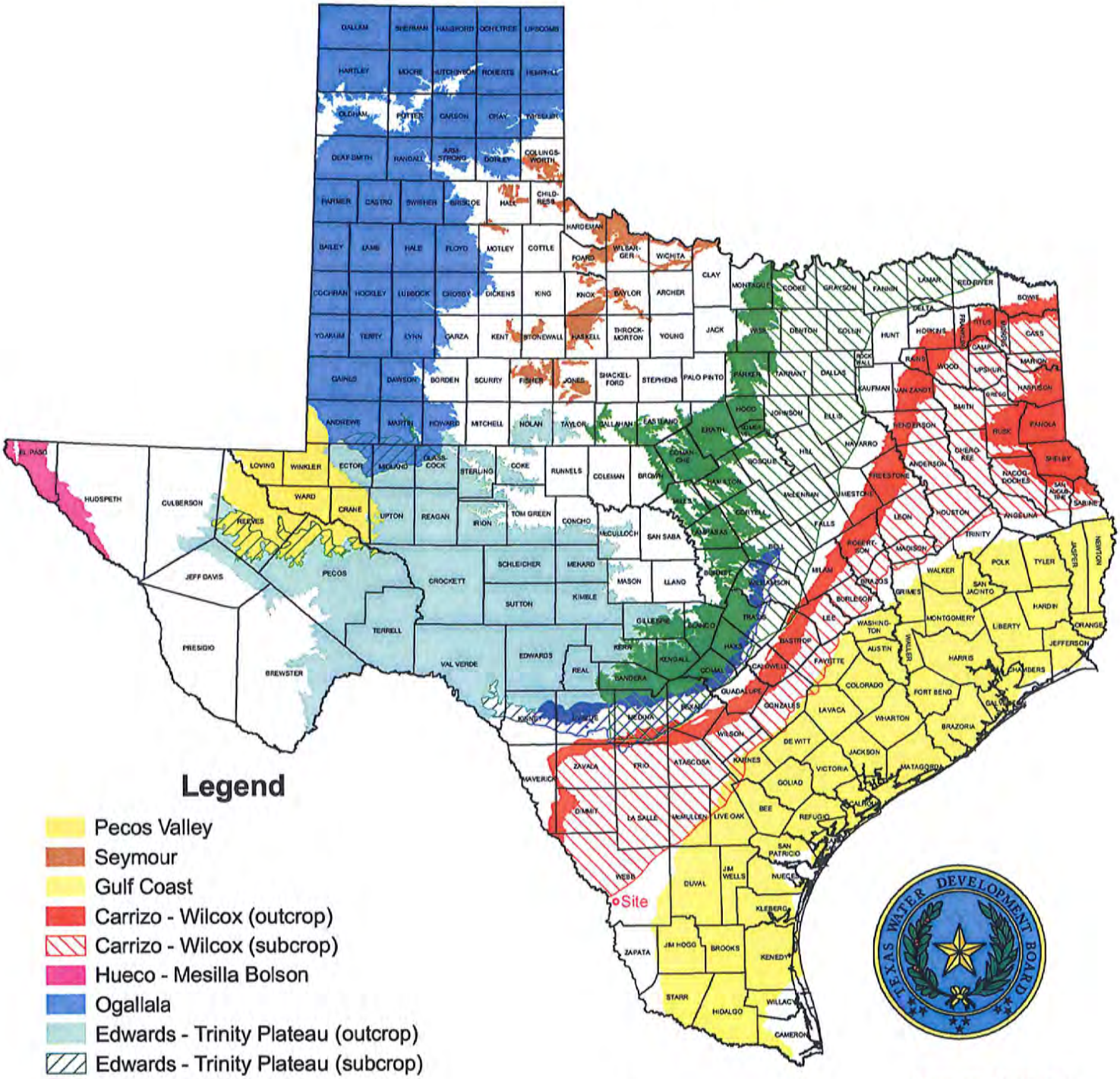
[2] ibid

FIGURE III.5.1

MAJOR AQUIFERS OF TEXAS

Major Aquifers of Texas



Legend

- Pecos Valley
- Seymour
- Gulf Coast
- Carrizo - Wilcox (outcrop)
- Carrizo - Wilcox (subcrop)
- Hueco - Mesilla Bolson
- Ogallala
- Edwards - Trinity Plateau (outcrop)
- Edwards - Trinity Plateau (subcrop)
- Edwards BFZ (outcrop)
- Edwards BFZ (subcrop)
- Trinity (outcrop)
- Trinity (subcrop)

NOTE: Chronology by Geologic age.

OUTCROP (portion of a water-bearing rock unit exposed at the land surface)
SUBCROP (portion of a water-bearing rock unit existing below other rock units)

Figure III.5.1

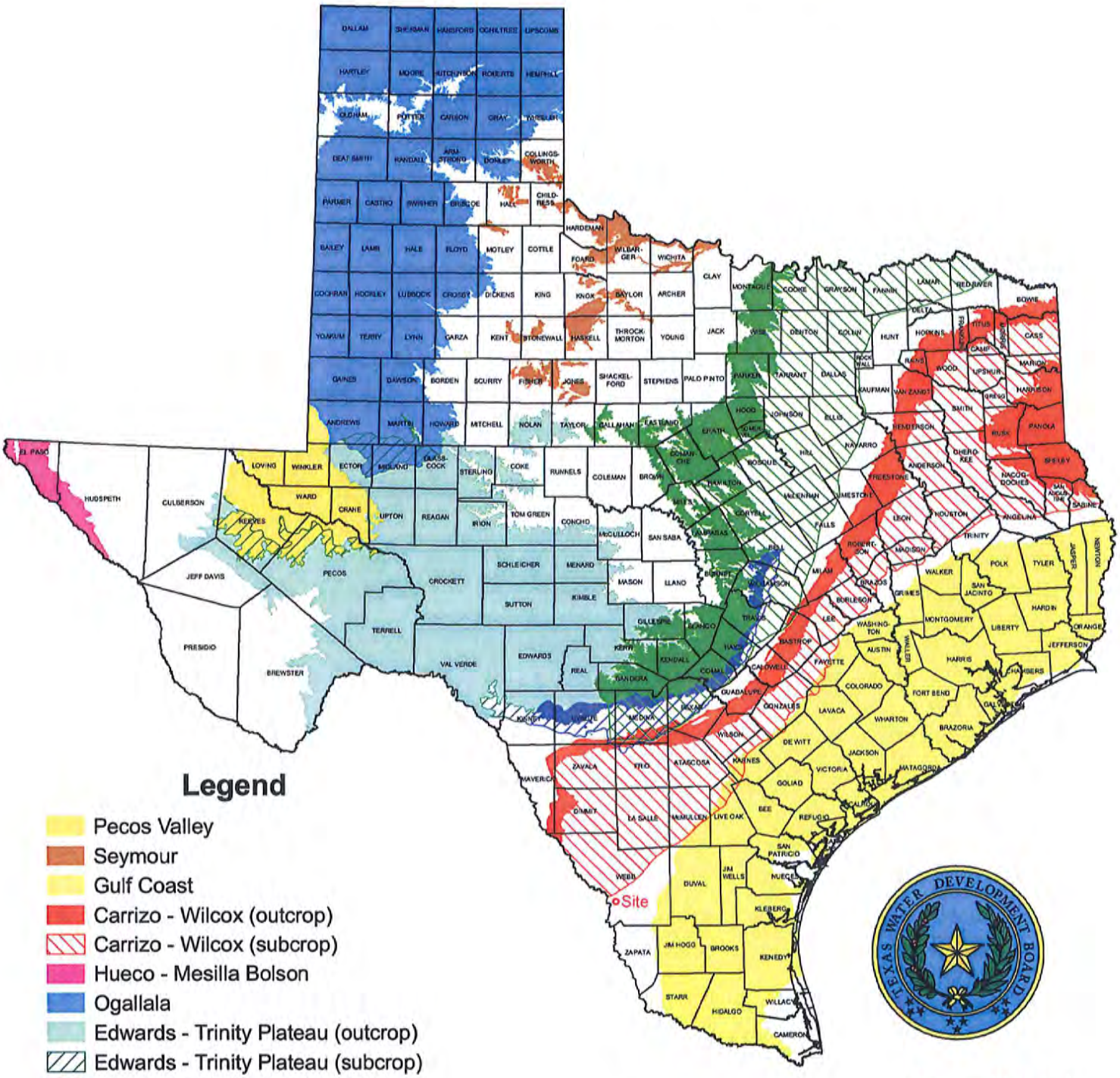
DISCLAIMER
This map was generated by the Texas Water Development Board using GIS (Geographic Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate.

Map updated December 2006 by Mark Hayes, GISP

FIGURE III.5.1

MAJOR AQUIFERS OF TEXAS

Major Aquifers of Texas



Legend

- Pecos Valley
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NOTE: Chronology by Geologic age.

OUTCROP (portion of a water-bearing rock unit exposed at the land surface)
SUBCROP (portion of a water-bearing rock unit existing below other rock units)

N W E S

0 25 50 100 150 200 Miles

Figure III.5.1

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Map updated December 2006 by Mark Hayes, GISP

PART III, ATTACHMENT 5, APPENDIX 1
SITE LOCATION MAP

PART III, ATTACHMENT 5, APPENDIX 1
SITE LOCATION MAP

MSRMaps
Nuevo Laredo, Tamaulipas, Mexico 2/9/2002

CITY OF LAREDO LANDFILL

WEBB COUNTY, TEXAS

MSW PERMIT No. 1693A

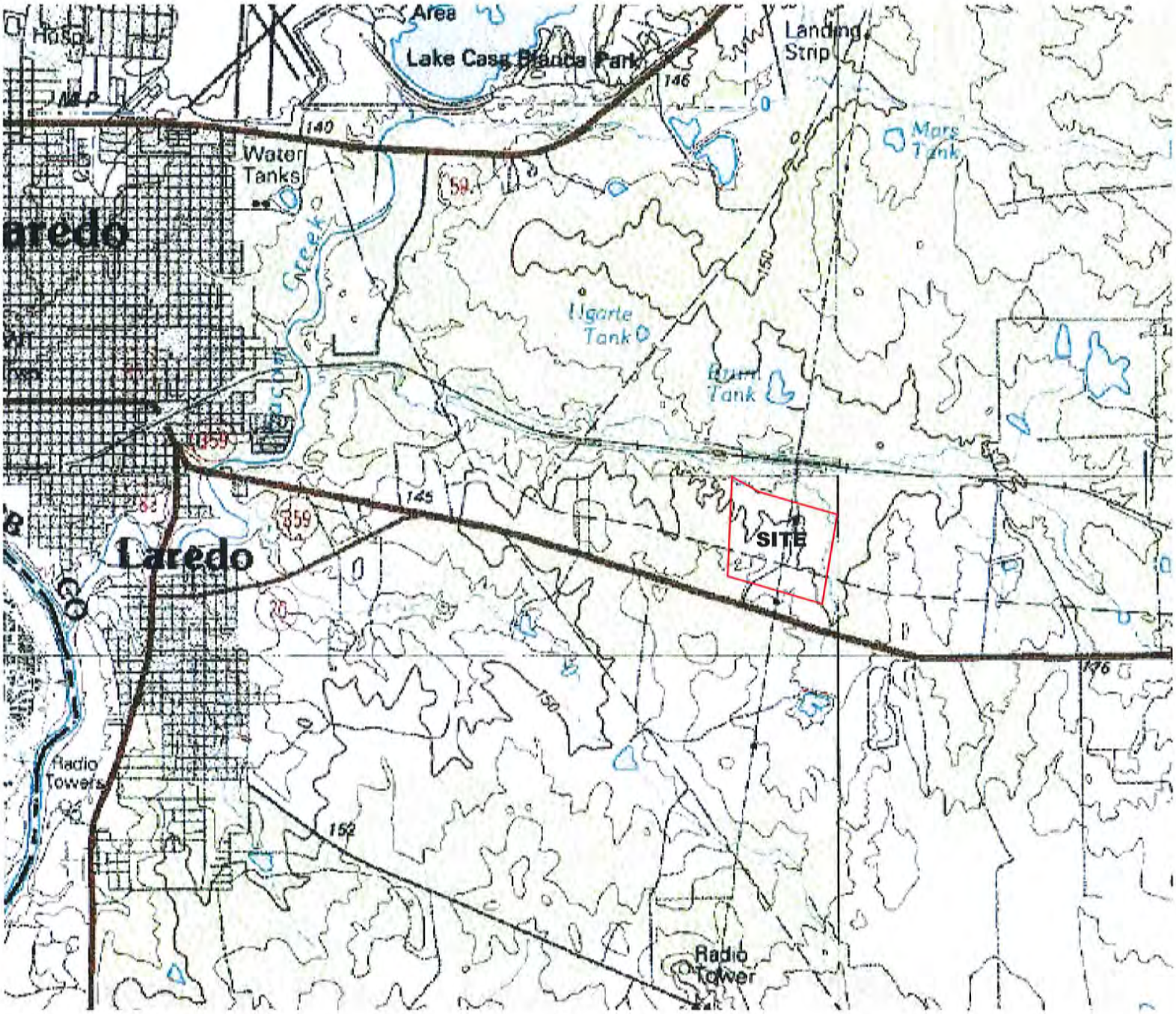
PS PHILLIPS ENVIRONMENTAL

DATE: 12/23/13

PART III, ATTACHMENT 5, APPENDIX 2

TOPOGRAPHIC MAP

PART III, ATTACHMENT 5, APPENDIX 2
TOPOGRAPHIC MAP



CITY OF LAREDO LANDFILL
WEBB COUNTY, TEXAS

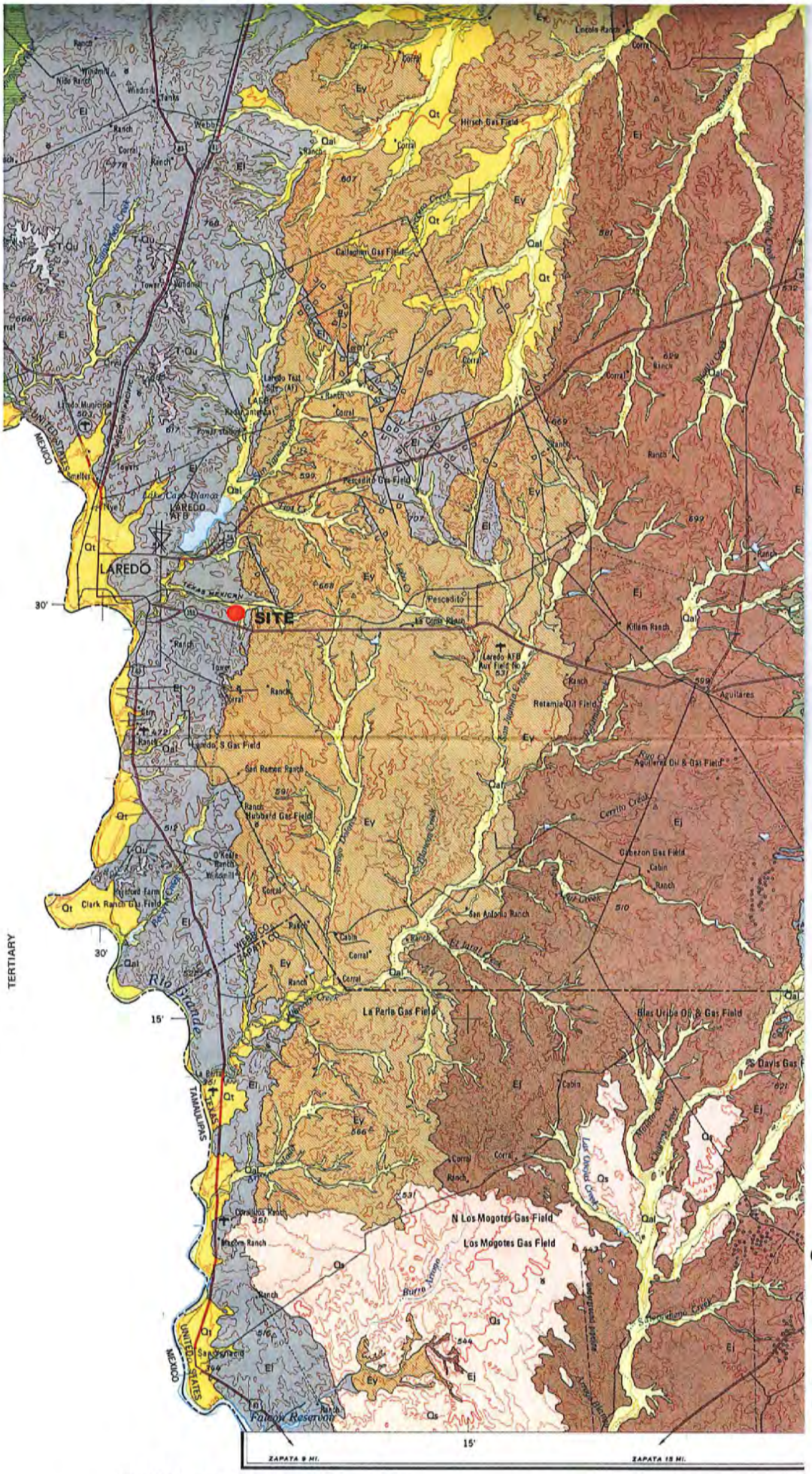
MSW PERMIT No. 1693A

PS PHILLIPS ENVIRONMENTAL

DATE: 12/26/13

PART III, ATTACHMENT 5, APPENDIX 3

GEOLOGY



Prepared by the Army Map Service (KCSX), Corps of Engineers, U. S. Army, Washington, D. C. Compiled in 1957 by photogrammetric methods and reference to county highway maps issued by Texas Department of Highways. Horizontal and vertical control by USC&GS, USGS and CE. Aerial photography 1955. Photography field annotated 1956.

PART III
ATTACHMENT 5
APPENDIX 3
GEOLOGY

CITY OF LAREDO LANDFILL
WEBB COUNTY, TEXAS

MSW PERMIT No. 1693A

PS PHILLIPS ENVIRONMENTAL

DATE: 12/23/13

Recent (Holoc

Pleistocene deposits within these narrow areas not separately mapped

Clay-sand dune deposits, Qcd, *clay, silt, and sand; light gray, calcareous; forms elongate deposits mostly on downwind side of intermittently wet basins, relief 5-30 feet; physical properties similar to those of the sandy and silty Beaumont*

Active dunes and dune complexes, Qsd, *banner dunes common, locally barchan dunes; relief up to 30 feet; "very high permeability, low water-holding capacity, low compressibility, low shrink-swell potential, good drainage, high shear strength, low plasticity, unstable because of migration"*

Stabilized sand dune deposits, Qds, *strong relict eolian grain, sparse grass; includes active blowout areas with depressed relief, hummocky, locally becomes fresh-water marsh in wet season, and well-stabilized sand dunes with dense live-oak mottes and scrub; "moderate to very high permeability, low to moderate water-holding capacity, low compressibility, low shrink-swell potential, good to fair drainage, high shear strength, low plasticity, shallow water table"*

Sand sheet deposits, Qs, *no relict grain, sparse grass; physical properties similar to those of "Stabilized sand dune deposits"*

Silt sheet deposits, Qsi, *silt and fine sand in thin, locally discontinuous sheet winnowed from other "Windblown deposits," brush and grass covered, rests on various Pleistocene deposits; has physical properties similar to those of other "Windblown deposits," but because of its thinness engineering plans should consider the nature of the underlying materials*

QUATERNARY

Qt

Fluviatile terrace deposits

Gravel, sand, silt, and clay; composed of materials similar to those present in contiguous alluvium; contiguous terraces are separated by a solid line

Pleistocene

Qb

Beaumont Formation

Clay, silt, sand, and gravel; includes mainly stream channel, point bar, natural levee, and backswamp deposits; concretions and massive accumulations of calcium carbonate (caliche) and concretions of iron oxide and iron-manganese oxides in zone of weathering; lower part only present

The stippled overprint shows areas that are "dominantly clay and mud of low permeability, high water-holding capacity, high compressibility, high to very high shrink-swell potential, poor drainage, level to depressed relief, low shear strength, and high plasticity; geologic units include interdistributary muds, abandoned channel-fill muds, and fluvial overbank muds." The nonstippled areas are "dominantly clayey sand and silt of low-moderate permeability, moderate drainage, level relief with local mounds and ridges, and high shear strength; geologic units include meanderbelt, levee, crevasse splay, and distributary sands"

Ql

Lissie Formation

Sand, silt, clay, and minor amount of gravel; iron oxide and iron-manganese nodules common in zone of weathering, in upper part locally calcareous, some concretions of calcium carbonate; surface fairly flat and featureless except for numerous rounded shallow depressions and pimple mounds, lower part very gently rolling; characterized by "moderate permeability, moderate drainage, and high shear strength; geologic units include meanderbelt, levee, crevasse splay, and distributary sands and floodbasin mud over meanderbelt sand;" thickness 200± feet

Pleistocene or Pliocene

QUATERNARY or TERTIARY

T-Qu

Uvalde Gravel

Chert, well-rounded pebbles and cobbles; occupies divide areas; thickness up to about 20 feet

Pg

Goliad Formation

Clay, sand, sandstone, marl, caliche, limestone, and conglomerate; clay, commonly light shades of pink and green, calcareous concretions; sand and sandstone, medium to very coarse grained, in part crossbedded, mostly quartz, some black and red chert; conglomerate, black chert and dark siliceous granules and pebbles in calcareous (caliche) matrix; sandstone and conglomerate locally well bedded; marl and limestone poorly bedded or massive; Tertiary vertebrate and reworked Cretaceous invertebrate fossils fairly common; thickness up to about 300 feet

Pliocene

TERTIARY

Miocene

Mfo

Fleming Formation and Oakville Sandstone undivided

Clay and sandstone; clay, calcareous, yellowish gray; sandstone, medium grained, calcareous, light yellowish gray to light gray, thick bedded, some crossbedding, locally contains quartz and chert gravel, fossil wood, and vertebrate fossils; forms cuesta of smoothly rounded hills; thickness about 500 feet

Miocene and Oligocene

Mcc
Mcs
Mcf
Mϕcf
ϕf

Catahoula and Frio Formations

In northern part of sheet, Chusa Tuff Member, Mcc, *Soledad Volcanic Conglomerate Member,* Mcs, *and Fant Tuff Member,* Mcf, *of the Catahoula Formation and Frio Formation,* ϕf, *mapped separately. Elsewhere, Catahoula and Frio Formations undivided,* Mϕcf

Chusa Tuff Member, Mcc, *mudstone and clay, tuffaceous, contains clay balls(?) up to one-half inch in size, light gray to pink, massive to irregularly bedded; thickness 160 to 200 feet*

Soledad Volcanic Conglomerate Member, Mcs, *abundant pebbles, cobbles, and boulders up to a foot in size, of rhyolitic, trachytic, and trachyandesitic composition, loosely to moderately cemented, mottled gray; thickness up to 75 feet*

Fant Tuff Member, Mcf, *tuff, claystone, and sandstone; tuff, grayish white, massively bedded, moderately well indurated, lumpy pisolitic texture; claystone, silty, pale olive, brown; sandstone, varicolored grains, in part interlaminated with pale-brown clay; thickness about 600 feet*

Frio Formation, ϕf, *dark greenish-gray clay, massive, some gypsum and calcareous concretions, thickness about 200 feet*

Ej

Jackson Group

Sandstone and clay; mostly sandstone, fine to coarse grained, friable to quartzitic, commonly laminated and crossbedded, white, gray, greenish brown, light brownish yellow, fossiliferous; clay, sandy, calcareous, greenish gray, pink, red, silicified wood abundant; some beds of white volcanic ash; large, dark limestone concretions composed of calcite crystals common; thickness about 360 feet

Ey

Yegua Formation

Clay and sandstone; mostly clay, lignitic, sandy, bentonitic, silty, mostly well laminated, chocolate brown to reddish brown, lighter colored upward, produces dark-gray soil; sandstone, mostly quartz, some chert, fine grained, indurated to friable, calcareous, glauconitic, massive, laminated, crossbedded, weathers to loose, ferruginous, yellow-orange and reddish-brown soil; some fossil wood; thickness about 400 feet

Eocene

El

Laredo Formation

Sandstone and clay; thick sandstone members in upper and lower part, very fine to fine grained, in part glauconitic, micaceous, ferruginous, crossbedded, dominantly red and brown; clay in middle, weathers orange-yellow; dark-gray limestone concretions common, some fossiliferous; marine megafossils abundant. thickness about 620 feet

Eep

El Pico Clay

Clay, sandstone, and coal; mostly clay, in part gypsiferous, medium gray to brown; sandstone, mostly fine grained, some medium to coarse, argillaceous, silty, in part glauconitic, gray to brown, thin bedded to massive, friable to indurated; aphanitic septarian concretions common; thickness 900-1,150 feet

Eb

Bigford Formation

Clay, sandstone, and lignite; clay, calcareous, selenitic, varicolored, contains subordinate amount of brown sandy clay and sandstone; sandstone in part thin bedded, intercalated with fissile shale, in part thick bedded, coarse grained, crossbedded; some concretions of yellow limestone, a few thin beds of hematite thickness about 650 feet

U
D

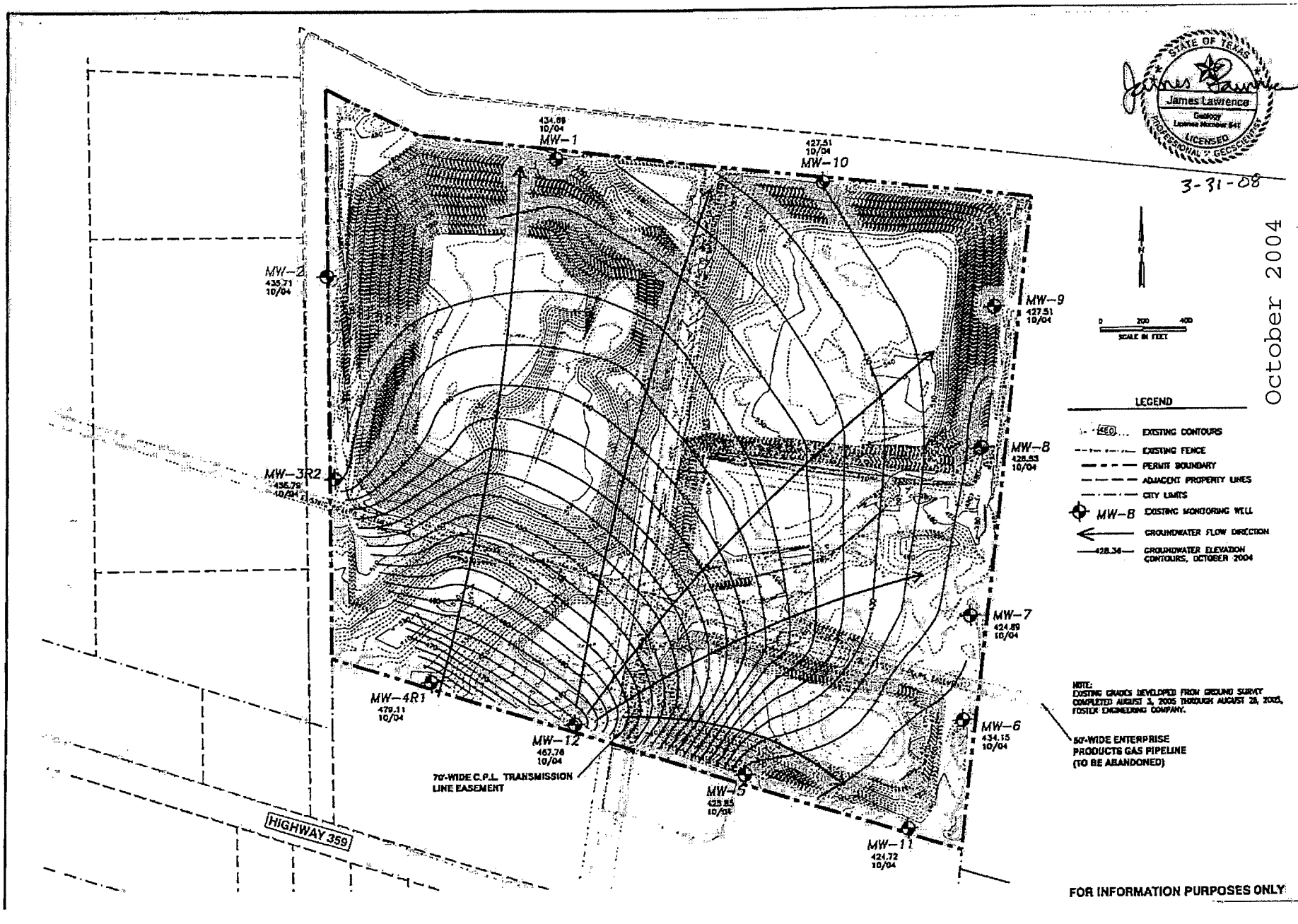
Fault

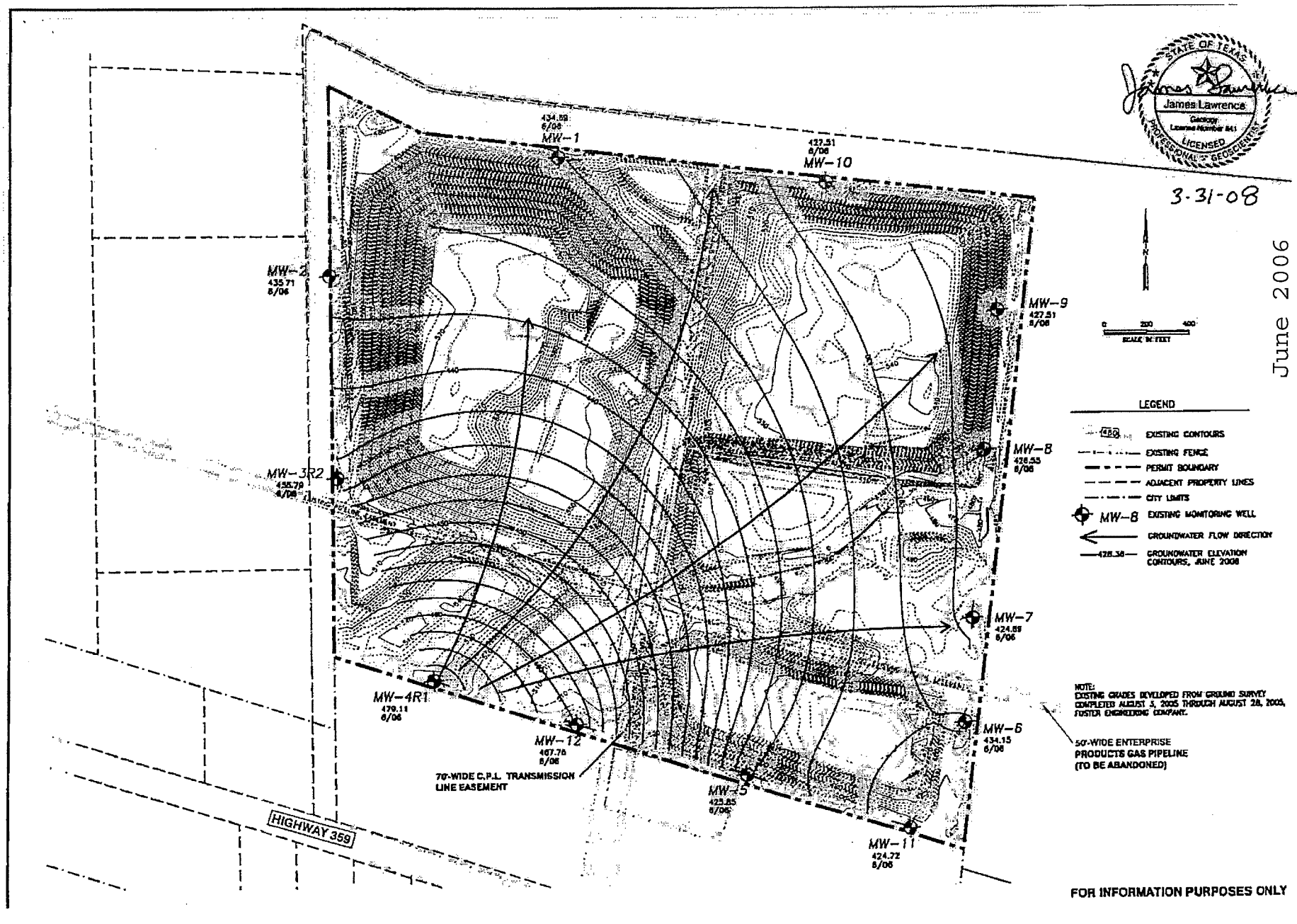
U, *upthrown side;* D, *downthrown side; dashed where inferred*

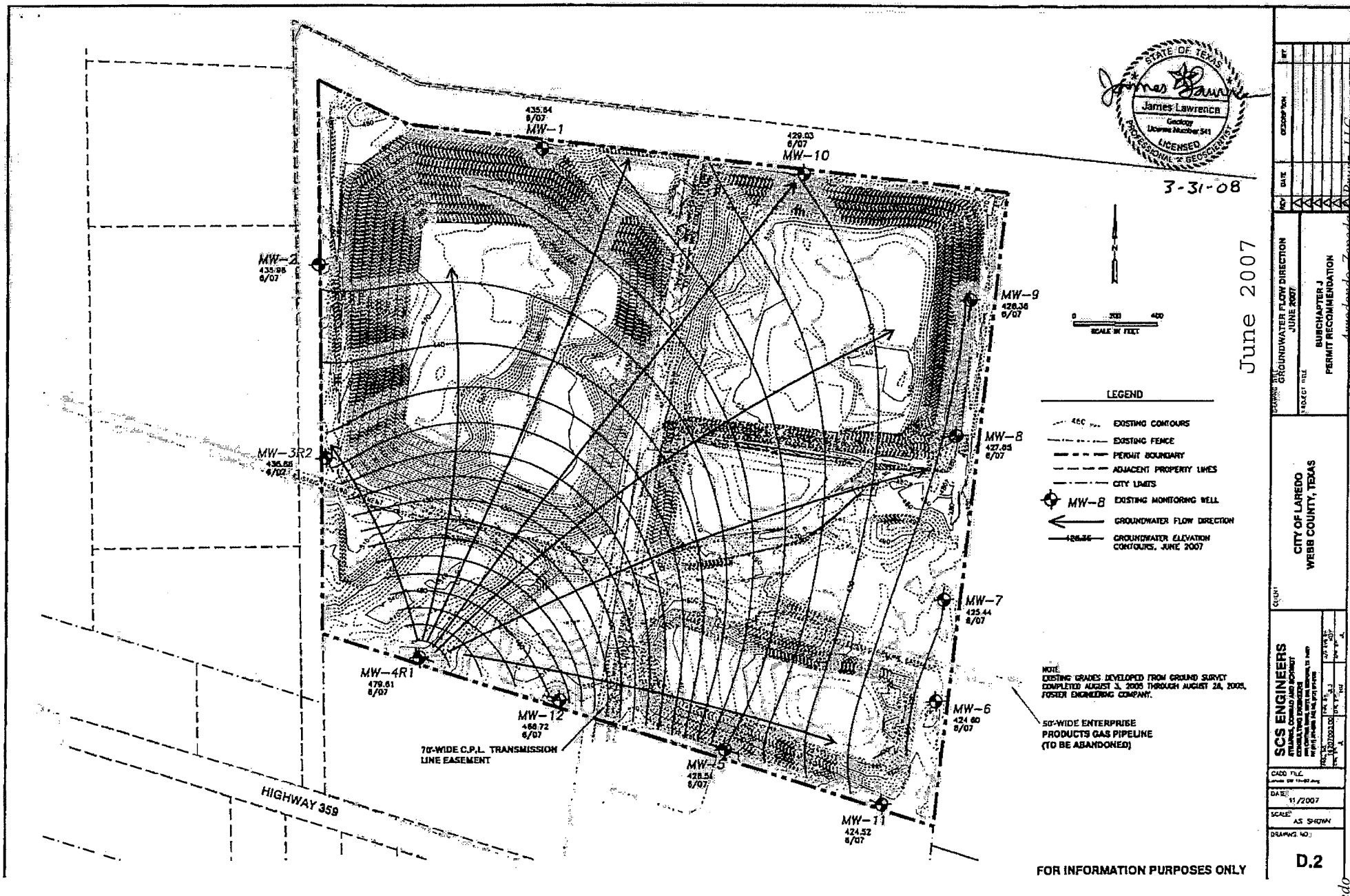
PART III, ATTACHMENT 5, APPENDIX 4

SCS ENGINEERS

GROUNDWATER FLOW DIRECTION MAPS


MW-1
434.69
10/04
MW-10
427.51
10/04
MW-2
435.71
10/04
MW-9
427.51
10/04
MW-8
428.53
10/04
MW-3R2
436.79
10/04
MW-7
424.89
10/04
MW-4R1
479.11
10/04
MW-12
467.76
10/04
MW-6
434.15
10/04
MW-5
425.85
10/04
MW-11
424.72
10/04
70'-WIDE C.P.L. TRANSMISSION LINE EASEMENT
HIGHWAY 359
0 200 400
SCALE IN FEET
LEGEND
EXISTING CONTOURS
EXISTING FENCE
PERMIT BOUNDARY
ADJACENT PROPERTY LINES
CITY LIMITS
MW-8 EXISTING MONITORING WELL
GROUNDWATER FLOW DIRECTION
428.36 GROUNDWATER ELEVATION CONTOURS, OCTOBER 2004
NOTE:
EXISTING GRADES DEVELOPED FROM GROUND SURVEY COMPLETED AUGUST 3, 2005 THROUGH AUGUST 28, 2005, FOSTER ENGINEERING COMPANY.
50'-WIDE ENTERPRISE PRODUCTS GAS PIPELINE (TO BE ABANDONED)
FOR INFORMATION PURPOSES ONLY
STATE OF TEXAS
James Lawrence
Geology
License Number 641
LICENSED
PROFESSIONAL GEOSCIENTIST
3-31-08
October 2004
GROUNDWATER FLOW DIRECTION OCTOBER 2004
SUBCHAPTER J PERMIT RECOMMENDATION
CITY OF LAREDO
WEBB COUNTY, TEXAS
SCS ENGINEERS
CADD FILE:
DATE: 11/2007
SCALE: AS SHOWN
D.4


MW-1
434.89
6/06
MW-10
427.51
6/06
MW-2
435.71
6/06
MW-9
427.51
6/06
MW-8
426.55
6/06
MW-3R2
435.79
6/06
MW-7
424.89
6/06
MW-4R1
479.11
6/06
MW-12
467.76
6/06
MW-6
434.15
6/06
MW-5
423.85
6/06
MW-11
424.72
6/06
HIGHWAY 359
70'-WIDE C.P.L. TRANSMISSION LINE EASEMENT
50'-WIDE ENTERPRISE PRODUCTS GAS PIPELINE (TO BE ABANDONED)
0 200 400
SCALE IN FEET
LEGEND
EXISTING CONTOURS
EXISTING FENCE
PERMIT BOUNDARY
ADJACENT PROPERTY LINES
CITY LIMITS
MW-8 EXISTING MONITORING WELL
GROUNDWATER FLOW DIRECTION
428.38 GROUNDWATER ELEVATION CONTOURS, JUNE 2006
NOTE:
EXISTING GRADES DEVELOPED FROM GROUND SURVEY COMPLETED AUGUST 5, 2005 THROUGH AUGUST 28, 2005, FOSTER ENGINEERING COMPANY.
FOR INFORMATION PURPOSES ONLY
James Lawrence
Geology
License Number 841
LICENSED
PROFESSIONAL GEOSCIENTIST
STATE OF TEXAS
3-31-08
June 2006
DRAWING TITLE: GROUNDWATER FLOW DIRECTION JUNE 2006
PROJECT TITLE: SUBCHAPTER J PERMIT RECOMMENDATION
CLIENT: CITY OF LAREDO WEBB COUNTY, TEXAS
SCS ENGINEERS
DATE: 11/2007
SCALE: AS SHOWN
DRAWING NO.: D.3


MW-1
435.84
6/07
MW-10
429.03
6/07
MW-2
435.95
6/07
MW-9
426.36
6/07
MW-3R2
436.88
6/02
MW-8
427.85
6/07
MW-7
425.44
6/07
MW-4R1
479.61
6/07
MW-12
468.72
6/07
MW-6
424.60
6/07
MW-5
428.54
6/07
MW-11
424.52
6/07
HIGHWAY 359
70'-WIDE C.P.L. TRANSMISSION LINE EASEMENT
50'-WIDE ENTERPRISE PRODUCTS GAS PIPELINE (TO BE ABANDONED)
NOTE:
EXISTING GRADES DEVELOPED FROM GROUND SURVEY COMPLETED AUGUST 3, 2005 THROUGH AUGUST 28, 2005, FOSTER ENGINEERING COMPANY.
LEGEND
EXISTING CONTOURS
EXISTING FENCE
PERMIT BOUNDARY
ADJACENT PROPERTY LINES
CITY LIMITS
MW-8 EXISTING MONITORING WELL
GROUNDWATER FLOW DIRECTION
GROUNDWATER ELEVATION CONTOURS, JUNE 2007
0 200 400
SCALE IN FEET
N
June 2007
3-31-08
STATE OF TEXAS
James Lawrence
Geology
License Number 341
LICENSED
PROFESSIONAL GEOSCIENTIST
FOR INFORMATION PURPOSES ONLY
DRAWING TITLE
GROUNDWATER FLOW DIRECTION
JUNE 2007
PROJECT TITLE
SUBCHAPTER J
PERMIT RECOMMENDATION
CLIENT
CITY OF LAREDO
WEBB COUNTY, TEXAS
SCS ENGINEERS
CADD FILE
DATE
11/2007
SCALE
AS SHOWN
DRAWING NO.
D.2

PART III, ATTACHMENT 5, APPENDIX 5

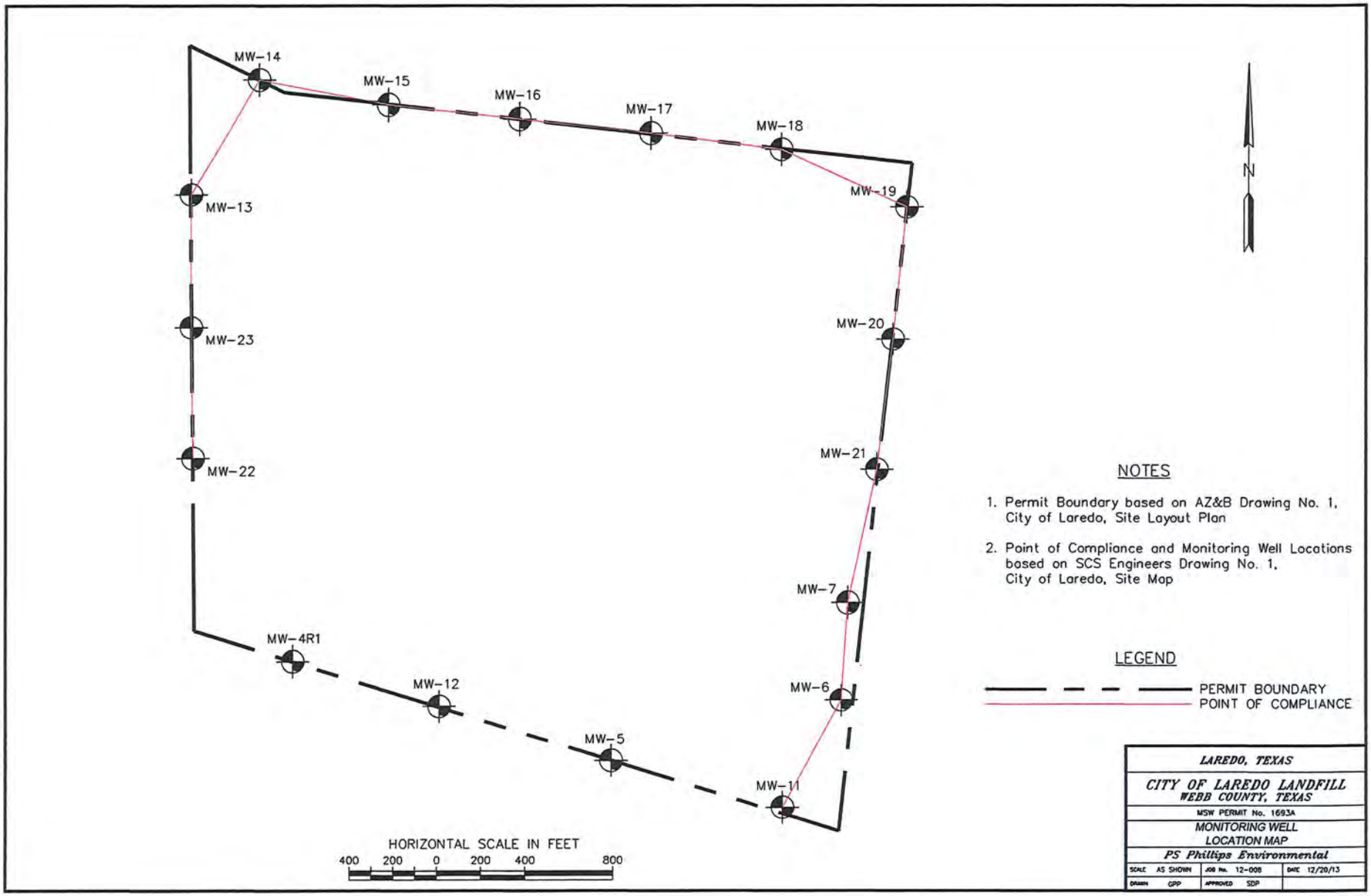
GROUNDWATER ELEVATIONS

PART III, ATTACHMENT 5, APPENDIX 5

GROUNDWATER ELEVATIONS

Location	June 2007	November 2011	November 2012
	Elevations in feet (MSL)		
MW-1	435.64	Plugged	
MW-2	435.96	Plugged	
MW-3R2	435.88	Plugged	
MW-4R1 (U)	479.61	483.00	483.05
MW-5 (D)	426.51	436.32	437.67
MW-6 (D)	424.60	429.92	431.04
MW-7 (D)	425.44	430.69	431.84
MW-8	427.65	Plugged	
MW-9	428.36	Plugged	
MW-10	429.03	Plugged	
MW-11 (D)	424.52	428.09	429.14
MW-12 (U)	466.72	471.78	451.18
MW-13 (D)		436.57	439.07
MW-14 (D)		438.90	440.10
MW-15 (D)		440.31	441.94
MW-16 (D)		436.61	437.41
MW-17 (D)		433.03	433.74
MW-18 (D)		432.60	433.35
MW-19 (D)		431.98	432.58
MW-20 (D)		432.00	432.66
MW-21 (D)		431.61	432.33
MW-22 (D)		436.91	437.31
MW-23 (D)		437.63	438.23

PART III, ATTACHMENT 5, APPENDIX 6
GROUNDWATER MONITORING SYSTEM MAP


MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
MW-13
MW-23
MW-22
MW-20
MW-21
MW-7
MW-4R1
MW-12
MW-6
MW-5
MW-11
N
HORIZONTAL SCALE IN FEET
400 200 0 200 400 800
NOTES
1. Permit Boundary based on AZ&B Drawing No. 1, City of Laredo, Site Layout Plan
2. Point of Compliance and Monitoring Well Locations based on SCS Engineers Drawing No. 1, City of Laredo, Site Map
LEGEND
PERMIT BOUNDARY
POINT OF COMPLIANCE
LAREDO, TEXAS
CITY OF LAREDO LANDFILL
WEBB COUNTY, TEXAS
MSW PERMIT No. 1693A
MONITORING WELL LOCATION MAP
PS Phillips Environmental
SCALE AS SHOWN
JOB No. 12-008
DATE 12/20/13
DRAWN GPP
APPROVED SDP