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## Part 36

# ENGINEERING CERTIFICATION REPORT

## February 7, 2020

# Engineering Certification Report

## FOR LANDFILL CELL 1A CONSTRUCTION

**OWL Landfill Services, LLC**
**Lea County, New Mexico**



02/07/2020

**CHARLES W. FIEDLER, NEW MEXICO P.E. NO. 19731**

**Submitted To:**

**New Mexico Oil Conservation Division**
**Environmental Bureau**
**1220 South St. Francis Dr. #3**
**Santa Fe, New Mexico 87505**

**Prepared For:**

**OWL Landfill Services, LLC**
**Lea County, New Mexico**

**Prepared By:**

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February 2020

Gordon/PSC Project #: 01056019

GORDON ENVIRONMENTAL PSC

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February 07, 2020

Mr. Jim Griswold
Environmental Bureau Chief
Oil Conservation Division
NM Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

**Re: OWL Landfill Services, LLC Engineering Certification Report: Landfill Cell 1A Construction [01056019]**

Dear Mr. Griswold:

This submittal is provided as engineering certification for the construction of the Landfill Cell 1A at OWL Landfill Services, LLC (OWL). located in Lea County, New Mexico. Specifically, this Certification Report demonstrates that the double containment liner and leak detection system for Cell 1A have been installed in compliance with the following applicable documents and regulatory requirements:

- Approved Construction Quality Assurance (CQA) Plan October 2016.
- Construction Plans and Project Technical Specifications (April 2019) for Landfill Cell 1A Construction, OWL Landfill Services, LLC.
- New Mexico Energy, Minerals and Natural Resources Department Regulations (19.15.36.1-19.15.36.20).
- Approved Permit and Permit Conditions (August 2017)
- Geosynthetic Research Institute (GRI) and American Society of Testing Materials (ASTM) and Industry Standards.

Per Condition of the Permit, the Division was notified “at least 30 days prior to the start of construction of the landfill cell…”; (**Appendix F.1**) and “at least 72 hours prior to liner installation” in advance of construction activities (**Appendix F.2**). The following Certification Report describes the activities and procedures performed during the construction of Cell 1A to document compliance with the approved Engineering Design Plans, Project Specifications, and the CQA Plan.We appreciate the opportunity to work with the OCD regarding the construction quality

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assurance for the construction of Cell 1A at OWL Landfill Services, LLC. Please contact us with your questions and comments regarding this Engineering Certification Report. (cking@team-psc.com; 505-867-6990)

Very truly yours,
**Gordon Environmental/PSC**

Carl R. King, P.E.
Senior Project Manager

Charles W. Fiedler, P.E.
Principal

cc: Timothy Shreve, Director of Landfill Operation, OWL Landfill Services, LLC

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G.4. Don Gray, Engineering Technician, Project Technologist

G.5. Andy Yuhas, Engineering Technician, Project Technologist

G.6. Diego Ramirez, Engineering Technician, Project Technologist

## 1.0 INTRODUCTION

This Engineering Certification Report describes the Construction Quality Assurance (CQA) activities and procedures applied during the construction of Landfill Cell 1A, henceforth known as *"Cell 1A"*, at OWL Landfill Services, LLC (OWL) located in Lea County, New Mexico. The CQA activities performed document Cell 1A was constructed in accordance with the approved Construction Plans, Project Technical Specifications, 2016 CQA Plan, Geosynthetic Research Institute (GRI) and American Society of Testing Materials (ASTM) Industry Standards, and New Mexico Energy, Minerals and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) regulatory standards.

### 1.1 EMNRD OCD Notification

The EMNRD OCD was notified prior to Cell 1A construction and provided a Major Milestone Schedule dated September 16, 2019 included in this report in **Appendix F.1**. Additionally, EMNRD OCD was notified prior to Cell 1A liner installation and provided an updated Major Milestone Schedule dated November 18, 2019 included in this report in **Appendix F.2.** Site development activities and landfill clearing initially began on April 18, 2019 with initial landfill perimeter berm construction continuing into early May 2019. At the Owner's initiative, all site development and landfill work were suspended for approximately three months and began in earnest in September 2019. This Engineering Certification Report satisfies the requirements of the applicable Permit Conditions.

### 1.2 Project Description

The OWL Landfill is located approximately 1.5 miles east of the intersection of Delaware Basin Rd. and NM highway 128 at mile marker 31, as shown on the Site Location Map **(Figure 1)**. Mass excavation was performed by T-5 Construction (T-5), a subcontractor to High Roller EPC (HR), with the excavation of soils, placement and compaction of perimeter berm soils, and subgrade fine grading and compaction, performed from April 18, 2019 through November 27, 2019. Anchor trench excavation, Geosynthetic Clay Liner (GCL), Secondary Flexible Membrane Liner (FML), Geonet, Leak Detection System, Primary FML, and Geosynthetic Cushion/Drainage Layer installation activities were performed by Mustang Extreme Environmental Services (MEES), also a subcontractor to HR, from December 3, 2019 through January 9, 2020.

### 1.3 Project Overview

From April 18, 2019 through January 28, 2020, Landfill Cell 1A was constructed at Oilfield Water Logistics Services, LLC, (OWL), located in Lea County, New Mexico. Gordon/PSC developed Cell 1A, Project Technical Specifications and the CQA Plan (October 2016); and performed on-site CQA activities. The primary construction activities for Cell 1A are as listed in **Table 1**.

**TABLE 1 - Primary Construction Activities**

| Activity Number | Construction Activity |
|---|---|
| 1 | Mass Excavation |
| 2 | Construction of perimeter berms |
| 3 | Fine Grading |
| 4 | Compaction |
| 5 | Installation of the Geosynthetic Clay Liner (GCL) |
| 6 | Installation of the Secondary Flexible Membrane Liner (FML) |
| 7 | Installation of Geonet and Geocomposite Leak Detection System |
| 8 | Installation of the Primary Flexible Membrane Liner (FML) |
| 9 | Installation of the Geocomposite Cushion/Drainage Layer |
| 10 | Installation of the protective soil layer (PSL) |
| 11 | Construction of the Landfill stormwater management system |

Mass excavation; placement and compaction of structural fill soils for the perimeter berms; fine grading and compaction to the design base grades were completed by T-5 under observation and soil density testing of Gordon/PSC, Site CQA Engineer, (**Figure 2**). Upon review and approval of the subgrade by the Gordon/PSC Site CQA Engineer and the geosynthetic installation contractor, the Gordon/PSC Site CQA Engineer was on-site during geosynthetics installation to observe, inspect, and record GCL, secondary FML (HDPE), geosynthetic leak detection, (geonet and geocomposite), primary FML (HDPE), geosynthetic cushion/drainage (geocomposite), protective soils (PSL), and rain flap stormwater management system (HDPE), leak detection system installation procedures. The purpose of the CQA work is to document that construction activities performed at OWL comply with the Cell 1A Construction Plans, Project Technical Specifications, 2016 CQA Plan, Geosynthetic Research Institute (GRI) and American Society of Testing Materials

(ASTM) Industry Standards, and EMNRD OCD regulatory requirements. The OWL Cell 1A Construction Plans, Project Technical Specifications, 2016 CQA Plan, field observations, and tests were used to provide quantitative criteria with which to evaluate construction.

Gordon/PSC personnel were responsible for the full range of CQA activities as listed in **Table 2.**

**TABLE 2 - Gordon/PSC CQA Activities**

| Activity Number | Gordon/PSC CQA Activity |
|---|---|
| 1 | Collect select on-site soils to perform laboratory moisture/density tests, hydraulic conductivity tests, and grain size analyses |
| 2 | Review surveying results to confirm that the subgrade met design elevations and slope |
| 3 | Provide field density testing of compacted berm soil fill and subgrade soils |
| 4 | Review manufacturer's quality assurance and manufacturer's quality control testing results for geosynthetics |
| 5 | Review conformance testing results for FML, GCL, Geonet, and Geocomposite |
| 6 | Inspect delivered FML, GCL, Geonet, Geocomposite, and leachate collection pipe |
| 7 | Observe GCL, secondary FML, Leak Detection System, primary FML, and Geocomposite installation procedures |
| 8 | Observe GCL secondary FML, Leak Detection System, primary FML, and Geocomposite material seaming and testing procedures |
| 9 | Review documentation, including laboratory and field test results |
| 10 | Complete and submit this Engineering Certification Report of completed construction to OCD |

## 1.4 Report Organization

This Certification Report describes the CQA activities and procedures performed during the construction of Cell 1A at OWL. The attached figures, appendices, photographs and daily logs provide appropriate quantitative and qualitative documentation. Cross-reference to the Figures and Attachments are in **bold** type to facilitate the Division's review.

## 1.5 Qualifications

### *1.5.1 Mr. Charles W. Fiedler, P.E., Engineer-of-Record*

Mr. Charles W. Fiedler, P.E. is the Engineer-of-Record for OWL. He has over 40 years of directly applicable experience in solid waste engineering. Mr. Fiedler is a registered professional engineer in New Mexico and Texas. Mr. Fiedler has supervised construction plans, bid documents, and CQA for over 1,800 acres of landfill development, including 30 Subtitle D landfill cells in New Mexico and Texas. The current resumé for Mr. Fiedler is included in the **Resumés** section (**Appendix G.1**).

### *1.5.2 Mr. Carl R. King, P.E., Senior Project Manager, Site CQA Engineer*

Mr. Carl R. King, P.E. is the Site CQA Engineer for OWL. He has over thirty years of experience developing and constructing lined landfill cells, geosynthetic impoundments, transfer and material recovery facilities and waste-to-energy facilities. Mr. King has served as a Site Construction Quality Assurance (CQA) Engineer for over 1,280 acres of Subtitle D municipal solid waste landfill cells and Subtitle C hazardous waste landfill cells in Arizona, New Mexico, Oklahoma and Texas. Components included construction plan development, project technical specification development, CQA Plan development and updating, soil liner installation, GCL installation, HDPE geomembrane installation, leachate collection system installation, protective soil layer evaluation and installation and construction management. Mr. King's site CQA Engineer duties included assessment and equivalency evaluation and calculations for liner and leak detection system components in compliance with the Construction Plans, CQA Plan and Project Technical Specifications. The current resumé for Mr. King is included in the **Resumés** section (**Appendix G.2**).

### *1.5.3 Mr. Braden Belliveau, EIT, Site CQA Engineer/Manager*

Mr. Braden Belliveau is a Site CQA Engineer/Manager for the OWL Cell 1A project. He serves as the Site CQA Engineer/Manager for Gordon/PSC, and is trained and certified on field instrumentation, industry standards, health and safety, etc. Mr. Belliveau is an EIT and has served as a Site CQA Engineer/Manager at various Subtitle D municipal solid waste landfills in New Mexico. Mr. Belliveau's primary duties are field CQA for cell subgrade soil testing and certification, observation and documentation of geosynthetics installation. The current resumé for Mr. Belliveau is included in the **Resumés** section (**Appendix G.3**).

### *1.5.4 Mr. Don Gray, Engineering Technician, Project Technologist*

Mr. Don Gray is the Site CQA Engineer/Manager for the OWL Cell 1A project. He serves as the Site CQA Engineer/Manager for Gordon/PSC, and is trained and certified on field instrumentation, industry standards, health and safety, etc. Mr. Gray is an Engineering Technician and has served as a Site CQA Engineer/Manager for over 150 acres of Subtitle D municipal solid waste landfills and impoundments in New Mexico. Mr. Gray's primary duties are field CQA for cell subgrade soil testing and certification, observation and documentation for geosynthetics installation, leachate collection system installation, and PSL testing and installation. The current resumé for Mr. Gray is included in the **Resumés** section (**Appendix G.4**).

### *1.5.5 Mr. Andy Yuhas, Engineering Technician, Project Technologist*

Mr. Andy Yuhas is an Engineering Technologist for the OWL Cell 1A project. He serves as an Engineering Technologist for Gordon/PSC, and is trained and certified on field instrumentation, industry standards, health and safety, etc. Mr. Yuhas is a trained geologist and has served as a Site CQA Engineering Technologist at various Subtitle D municipal solid waste landfills in New Mexico. Mr. Yuhas's primary duties are field CQA for cell subgrade soil testing and certification, observation and documentation of geosynthetics installation. The current resumé for Mr. Yuhas is included in the **Resumés** section (**Appendix G.3**).

### *1.5.6 Mr. Diego Ramirez, Engineering Technician, Project Technologist*

Mr. Diego Y. Ramirez is the Site CQA Engineer/Manager for the OWL Cell 1A project. He serves as a Site CQA Engineer/Manager for Gordon/PSC, and is trained and certified on field instrumentation, industry standards, health and safety, etc. Mr. Ramirez's primary duties are field CQA for cell subgrade soil testing and certification, observation and documentation of geosynthetics installation. The current resumé for Mr. Ramirez is included in the **Resumés** section (**Appendix G.6**).

## 2.0 LANDFILL CELL 1A CONSTRUCTION

### 2.1 Summary

The OWL Landfill is a new facility located in Lea County, New Mexico, and will be complemented with process equipment, administrative offices, drying pads, evaporation ponds, and additional landfill cells. The total double lined project area, Cell 1A, is approximately 10 acres in size as shown on the Subgrade Design Grades (**Figure 2**).

Mass excavation, berm construction, and fine-grading was conducted by T-5; and MEES performed the installation of the GCL, Secondary FML, Leak Detection System, Primary FML, and a Geocomposite Cushion/Drainage each as a subcontractor to HR. Conformance testing of geosynthetics was performed by TRI Environmental, while documentation and quality assurance were performed by Gordon/PSC. **Tables 3** and **4** summarize these construction activities.

T-5 Construction of Garrison, Texas, as subcontractor to High Roller EPC of Houston, Texas, performed the construction activities listed **Table 3**.

**TABLE 3 – T-5 Construction Activities**

| Activity Number | T-5 Construction Activity |
|---|---|
| 1 | Mass excavation to overall design grades |
| 2 | Installation of perimeter berms |
| 3 | Fine grading of the cell floor, transition zone, and berms |
| 4 | Compaction of the landfill cell, surrounding areas, and berms |
| 5 | Construction of the site stormwater management system and site protection berms |
| 6 | Installation of protective soil layer |

Mustang Extreme Environmental Services of Fort, Worth Texas, as subcontractor to High Roller EPC of Houston Texas, performed the construction activities listed **Table 4**.

**TABLE 4 – MEES Construction Activities**

| Activity Number | MEES Construction Activity |
|---|---|
| 1 | Excavation, backfill and compaction of liner anchor trenches |
| 2 | Installation of Geosynthetic Clay Liner (GCL) |
| 3 | Installation of 60-mil Secondary HDPE FML |
| 4 | Installation of the HDPE Geonet and Geocomposite material (Leak Detection Layer) |
| 5 | Installation of 60-mil Primary HDPE FML |
| 6 | Installation of the Geocomposite material (Geosynthetic Cushion/Drainage Layer) |
| 7 | Installation of Leachate Collection System (HDPE pipe, drainage aggregate, and geotextile |
| 8 | Installation of 40-mil smooth HDPE FML stormwater flap |

Surveying services for the Contractor, as defined in the Contract Documents, were provided by Transglobal Services, LLC (Transglobal) under High Roller EPC. Transglobal is a licensed land surveyor in the State of New Mexico, and survey support activities are listed in **Table 5**.

**TABLE 5 - Surveying Support Activities**

| Licensed Land Surveyor | Support Activity |
|---|---|
| Transglobal Services, LLC | Record Surveying Services to High Roller EPC including:<br>• Final grades of the Landfill Cell 1A<br>• Top of all berms surrounding the project<br>• Leachate extraction line<br>• Edge of liner system<br>• Thickness conformation of PSL (Protective Soil Layer) |

## 2.2 Subgrade Preparation

The following sections describe the activities performed during mass excavation, compacted berm soil fill placement, subgrade preparation, and CQA soil testing.

### *2.2.1 Clearing, Grubbing and Mass Excavation*

T-5 performed the clearing and grubbing, mass excavation, subgrade fine grading and compaction in addition to placing and compacting perimeter berm soils using select materials from excavation activities. Perimeter berms located on the north, and east were constructed to the design grades shown on the Construction Plans. Once design grades were attained and density testing was complete, HR's surveyor, Transglobal, performed record certification surveys to document that the subgrade, berm elevations and slopes met the design requirements shown on the Construction Plans and as set forth in the Project Technical Specifications and 2016 CQA Plan.

### *2.2.2 Coordinate System*

The project area was surveyed in a grid pattern so that the locations of sample and testing points used during construction were readily discernible by the Site CQA Engineer/Manager. The survey grid, shown on **Figure 3**, was established by HR's Surveyor, Transglobal, for use during construction and testing.

### *2.2.3 Subgrade and Berm Compaction*

During excavation, perimeter berms were constructed to surround Cell 1A on the permanent north and east perimeter using excavated soils. Soils were placed in maximum one-foot thick lifts and compacted to 90% of Standard Proctor Dry Density as verified by field density tests. After berm construction, mass excavation, and fine grading to the elevations shown on **Figure 2** were completed,

the floor soils were compacted using a vibratory roller. The in-place density was measured at a minimum frequency of 4 tests per acre, using a InstroTek 3500 Xplorer®, requiring 40 tests for the 10-acre± footprint of Cell 1A, and approximately 356 tests for berm construction (**Figure 4**). All results passed the required specification of 90%, or higher, of the Reference Standard Proctor. The results for the Standard Proctor laboratory tests used as references are provided in **Appendix A.1,** and field compaction testing results are tabulated in **Appendix A.2** for Cell 1A floor and north sidewall, and **Appendix A.3** for Cell 1A perimeter berms. The Reference Maximum Dry Density for Cell 1A and berms ranged from 111.8 lb/ft$^3$ to 116.3 lb/ft$^3$ depending on soils encountered during construction activities. The type of soil encountered and stockpiled produced a composite soil that was placed for initial berm construction. As the project continued, berms were constructed either from the stockpile composite or direct placement from subgrade excavation. The maximum density references are labeled in **Appendix A.2 and A.3.**

### *2.2.4 Subgrade Acceptance*

Upon completion of subgrade construction, Cell 1A was surveyed by Transglobal. The topography of the subgrade was then verified and accepted by the Gordon/PSC CQA Engineer/Manager prior to geosynthetic liner deployment. **Figure 2** shows the design grades, and **Figure 3** provides the as-built grades for the finished subgrade surface.

The Gordon/PSC Site CQA Engineer/Manager and MEES Field Installation Superintendent (FIS) conducted daily inspections of the subgrade surface prior to liner installation activities for the anticipated liner deployment area. The subgrade surface was found to be in good condition and free from sticks, sharp stones, vegetation and other deleterious material after each daily inspection. The Gordon/PSC CQA Engineer/Manager and the FIS continued to inspect the subgrade surface during liner installation in areas immediately ahead of deployment to identify and remove any large or angular particles, sharp objects, etc. T-5 provided continual moisture conditioning and rolling of the subgrade ahead of the liner installation as requested by MEES's FIS and the Gordon/PSC Site CQA Engineer/Manager.

## 2.3 Geosynthetic Clay Liner

In accordance with the Construction Plans, Project Technical Specifications and 2016 CQA Plan, the Geosynthetic Clay Liner (GCL) was placed in direct contact with the prepared subgrade. The following sections describe the procedures and activities performed during the GCL installation, observation, and CQA testing to confirm compliance with the Project Specifications.

### *2.3.1 Geosynthetic Clay Liner Product*

Approximately 417,900 $ft^2$ of Bentoliner NSL, the reinforced GCL material manufactured by GSE Environmental, Houston, Texas, was used in the construction of Cell 1A. Per Project Technical Specifications, granular bentonite was required to be placed between horizontal and longitudinal seams of deployed GCL panels. Copies of the manufacturer's quality assurance (MQA) and manufacturer's quality control (MQC) test results and certifications are included in **Appendix B.1** for the delivered GSE Environmental Bentoliner NSL GCL.

### *2.3.2 Geosynthetic Clay Liner Installation*

The guidelines specified in the Project Technical Specifications, 2016 CQA Plan, Construction Plans, and industry standards for GCL installation procedures were strictly followed during lining of Cell 1A. Each roll of GCL was carefully transported from the Contractor's Staging Area to Cell 1A using a rubber-tired forklift; as verified by the Gordon/PSC Site CQA Engineer/Manager. As each roll was moved, the manufacturer's identification label was removed and submitted to the Gordon/PSC Site CQA Engineer/Manager for documentation in the *GCL Deployment Log* (**Appendix C.6**) and the GCL Layout Drawing (**Figure 5**). These labels were compared with the shipping invoice to verify that the GCL delivered to OWL corresponded with GCL subjected to MQC and MQA (manufacturer) testing (see Section 2.3.3). Each GCL roll was placed in direct contact with the prepared subgrade with the nonwoven geotextile facing upward. GCL was not placed in standing water or deployed during rainfall.

After each roll had been deployed, adjoining rolls were positioned maintaining the minimum overlap used for the on-site GCL of nine (9) inches on the longitudinal seams and twelve (12) inches on the end seams as specified in the Project Technical Specifications and 2016 CQA Plan. Free bentonite was applied on each longitudinal and perpendicular seam at a minimum of 0.25 lbs per linear foot of seam. Material placement was observed by the Gordon/PSC Site CQA Engineer/Manager and FIS for potential damage due to handling or installation. On 12/09/19 approximately 2,000 $ft^2$ of GCL were damaged on the south end of the landfill due to a heavy rain the previous night. The Gordon/PSC Site CQA Engineer/Manager recommended removal and replacement of the damaged GCL and the installers FIS agreed with the assessment. On 12/12/19 the damaged GCL was removed and replaced with replacement panels R1 through R4. No additional damages were observed by the Gordon/PSC Site CQA Engineer/Manager or the installers FIS.

### *2.3.3 Geosynthetic Clay Liner Testing*

GCL testing included manufacturing quality control (MQC), manufacturing quality assurance (MQA), third-party conformance testing, construction quality control (CQC) and construction quality assurance (CQA). Each type of testing is described in the following sections.

#### *2.3.3.1 Geosynthetic Clay Liner Manufacturing Quality Control (MQC) and Manufacturing Quality Assurance (MQA)*

MQC and MQA testing of the bentonite and geotextile components, as well as the finished GCL, were performed by the manufacturer prior to shipment of the GCL to OWL. Random samples of the finished GCL were collected from each day's production and tested for the properties listed in **Table 6.**

**TABLE 6 - GSE Environmental Bentoliner NSL GCL - MQC/MQA Testing**

| **Bentoliner NSL GCL Property** | **ASTM Method** |
|---|---|
| Free swell | ASTM D5890 |
| Fluid loss | ASTM D5891 |
| Mass per unit area | ASTM D5993 |
| Grab strength | ASTM D6768 and ASTM D4632, Modified |
| Peel strength | ASTM D6496 and ASTM D4632, Modified |
| Moisture content | ASTM D2216 |
| **Nonwoven and Woven Geotextile Encapsulating Bentonite** | **ASTM Method** |
| Grab strength | ASTM D4632 |
| Mass per unit area | ASTM D5261 |

The GCL quality control certification and GCL property values and testing frequencies for the on-site material delivered to OWL are provided in **Appendix B.1**.

#### *2.3.3.2 Conformance Testing*

Conformance sampling for GCL material was performed by TRI/Environmental, Inc. (TRI), Austin, Texas at the manufacturer's facility prior to shipment of the GCL to OWL. TRI collected samples approximately two feet long from the entire roll width and performed conformance testing at the TRI laboratory in Austin, Texas. Conformance samples were collected at a frequency of at least one (1) per 100,000 $ft^2$ of GCL installed to verify that the GCL delivered to OWL met the minimum properties listed in the Project Technical Specifications and 2016 CQA Plan. Including the repairs

to rain damaged GCL on 12/12/19, approximately 417,900 $ft^2$ of GCL material was deployed within the Landfill Cell 1A, requiring a minimum of five (5) samples. Five (5) samples were tested by TRI for the properties listed in **Table 7**; as specified in the Project Technical Specifications and 2016 CQA Plan.

**TABLE 7 - GSE Environmental Bentoliner NSL GCL – Conformance Testing**

| Bentoliner NSL GCL Property | ASTM Method |
|---|---|
| Mass per unit area | ASTM D5993 |
| Mass per unit area | ASTM D5261 |
| Peel Strength | ASTM D6496 |
| Index Flux | ASTM D5887 |
| Bentonite – Fluid Loss | ASTM D5891 |
| Bentonite – Swell Index | ASTM D5890 |

Conformance test results were reviewed by the Gordon/PSC CQA Engineer and accepted in accordance with Project Technical Specifications and 2016 CQA Plan. The conformance test results indicate that the GCL meets the minimum property requirements specified in the Project Technical Specifications and 2016 CQA Plan. The conformance test results for the five (5) samples are included in **Appendix B.2.**

#### *2.3.3.3 Construction Quality Control (CQC) for Geosynthetic Clay Liner*

The CQC procedures specified in the Project Technical Specifications and 2016 CQA Plan were strictly followed in order to provide a method to measure and regulate the quality of GCL installation. The Gordon/PSC Site CQA Engineer/Manager and FIS observed and documented GCL panel placement activities to verify that the deployment and seaming procedures were performed in accordance with the Project Technical Specifications and 2016 CQA Plan, including subgrade inspection, seam overlap, application of free bentonite, and precautions against potential GCL damage.

#### *2.3.3.4 Construction Quality Assurance (CQA) for Geosynthetic Clay Liner*

The Gordon/PSC Site CQA Engineer/Manager and the FIS inspected each roll of GCL transported to Cell 1A from the staging area. The GCL was inspected for potential damage and uniformity. The roll identification labels were compared with the shipping invoice to verify that the GCL delivered to OWL corresponded with GCL subjected to manufacturers' quality control and quality assurance testing (see Sections 2.3.3.1.).

The Gordon/PSC Site CQA Engineer/Manager and the FIS visually inspected GCL rolls for potential damage during deployment. Any damaged portions of the GCL deployed were repaired by covering the defect with a GCL patch that provided a minimum twelve (12)-inch overlap on all sides of the defect with bentonite powder applied to the edges of the patch as specified in the Project Technical Specifications and 2016 CQA Plan.

#### *2.3.4 Geosynthetic Clay Liner Deployment Records*

Documentation of the GCL deployment and inspection of each panel for damage was required prior to approval and acceptance. The GCL installation was not accepted until the deployment records (**Appendix C.6**), manufacturer's certification reports (**Appendix B.1**) and conformance test results (**Appendix B.2**) were submitted to and approved by the Gordon/PSC Site CQA Engineer. The Cell 1A GCL Layout is shown on **Figure 5**. The Daily Summary Reports and documentation of GCL panel placement was recorded throughout each construction day. Copies of the Daily Summary Reports, the day's GCL panel deployment approval, and photographs documenting GCL panel placement activities are provided in the **Field Logs** and **Photographs** section of this Report.

### 2.4 60-mil Secondary Flexible Membrane Liner

The Secondary FML was installed in direct contact above the GCL in accordance with the engineering design drawings, project specifications, and the 2016 CQA Plan. The following sections describe the procedures and activities performed during FML installation, observation, and CQA testing.

#### *2.4.1 Flexible Membrane Liner Product*

The FML utilized in Cell 1A construction was 60-mil, high-density polyethylene (HDPE), manufactured by GSE Environmental of Houston, Texas. Textured FML was designated for the berms/sideslopes and smooth FML was designated for the cell floor lining of Cell 1A, and was delivered to OWL in rolls twenty-two and a half (22.5) feet wide by five hundred and sixty (560) feet long and five hundred twenty (520) feet long for smooth and textured liner, respectively. The FML was stored in the Contractor's Staging Area and in accordance with the Project Technical Specifications and the 2016 CQA Plan. The stored FML was not stacked more than two (2) rolls high. The Gordon/PSC Site CQA Engineer/Manager compared roll identification labels with shipping invoices to verify that the FML delivered to OWL corresponded with FML subjected to manufacturer's quality control and quality assurance testing (Section 2.4.3).

### *2.4.2 Flexible Membrane Liner Installation*

The FML installation activities were performed in accordance with the guidelines specified in the Construction Plans, Project Technical Specifications and 2016 CQA Plan; and industry standards for FML handling, placement, and testing. Each roll of FML was carefully moved from the Contractor's Staging Area southwest of Cell 1A using a rubber-tired forklift, and FML was not placed in standing water or deployed during rainfall. Upon deployment, each roll identification label was removed and submitted to the Gordon/PSC Site CQA Engineer/Manager and then compared with the shipping invoices to verify that the FML delivered to OWL corresponds with FML subjected to manufacturers' quality control and quality assurance testing. FML being deployed was documented in the *Secondary FML Deployment Log* (**Appendix C.7**) and the Secondary 60-Mil Liner Panel Layout drawing (**Figure 6**).

After each FML panel had been deployed, adjoining panels were positioned with a four (4) to six (6) -inch longitudinal overlap required for hot-wedge fusion welding. The overlap distance is required for proper seaming, and to allow peel and shear tests to be performed on the seams. Seams were oriented at approximately forty-five (45) degrees to the line of prevailing base grade slope on the Cell 1A floor, and parallel to the Cell 1A sideslopes, per the Project Technical Specifications and 2016 CQA Plan (see Secondary 60-Mil Liner Panel Layout, **Figure 6**).

### *2.4.3 Flexible Membrane Liner Testing*

FML testing included manufacturer's quality control (MQC) and manufacturer's quality assurance (MQA), conformance testing, construction quality control (CQC), CQA, and seam testing. Each type of testing methodology is discussed in the following sections.

#### *2.4.3.1 Manufacturer's Quality Control (MQC)*

Formosa Plastics Corporation, Texas performed resin testing on the raw materials used in the manufacturing of the FML. These test results and written certifications verified that the FML delivered to OWL has been extruded from an acceptable resin meeting the properties specified in GRI-GM 13, *"Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes"*, are included in **Appendix B.3**.

#### *2.4.3.2 Manufacturer's Quality Assurance (MQA)*

As a part of the MQA testing, specific performance and characterization properties were evaluated on random samples collected from the manufactured FML rolls prior to their delivery to OWL as listed in **Table 8.**

**TABLE 8 - GSE Environmental HDPE FML - MQA Testing**

| 60-mil HDPE Smooth/Textured HDPE FML Property | ASTM Method |
|---|---|
| Thickness | ASTM D5994 |
| Asperity Height (Textured) | ASTM D7466 |
| Density | ASTM D1505 |
| Mass per unit area | ASTM D5993 |
| Melt Flow Index | ASTM D1238, Condition E |
| Tensile Properties | ASTM D6693 and ASTM D 6693, Modified |
| Tear Resistance | ASTM D1004, Modified |
| Puncture Resistance | ASTM D4833, Modified |
| Carbon Black Content | ASTM D4218 |
| Carbon Black Dispersion | ASTM D5596 |
| Environmental Stress Crack Resistance using Notched Constant Tensile Load | ASTM D5397 |

MQA test results are included in **Appendix B.3**. These results were reviewed by the Gordon/PSC Site CQA Engineer and confirmed against the Project Technical Specifications and 2016 CQA Plan requirements. MQA testing results met the requirements set forth in the Project Technical Specifications and 2016 CQA Plan.

#### *2.4.3.3 Conformance Testing*

Conformance sampling for FML material was performed by TRI, Austin, Texas at the manufacturer's facility prior to shipment of the FML to OWL. TRI collected samples approximately two feet long from the entire roll width and performed conformance testing at the TRI laboratory in Austin, Texas. Conformance samples were collected at a frequency of at least one (1) per 100,000 $ft^2$ of FML installed to verify that the FML delivered to OWL met the minimum properties listed in the Project Technical Specifications and 2016 CQA Plan. Approximately 419,800 $ft^2$ of HDPE Secondary FML was installed in the Landfill; requiring a minimum of five (5) conformance samples. A total of thirteen (13) samples of 60 mil HDPE FML were tested by TRI for conformance.

TRI tested the thirteen (13) FML samples for the properties listed in **Table 9**; as specified in the Project Technical Specifications and 2016 CQA Plan.

**TABLE 9 - GSE Environmental HDPE FML – Conformance Testing**

| 60-mil HDPE (Smooth/Textured) FML Property | ASTM Method |
|---|---|
| Thickness | ASTM D5994 |
| Density | ASTM D1505 |
| Tensile Properties | ASTM D6693 and ASTM D 6693, Modified |
| Tear Resistance | ASTM D1004, Modified |
| Carbon Black Content | ASTM D6693, Modified 4218 |
| Carbon Black Dispersion | ASTM D5596 |

The conformance test results were reviewed by the Gordon/PSC Site CQA Engineer and accepted in accordance with Project Technical Specifications and 2016 CQA Plan. The conformance test results indicated that the FML met the minimum property requirements specified in the Project Technical Specifications and 2016 CQA Plan. The conformance testing results for the thirteen (13) samples are included in **Appendix B.4**.

#### *2.4.3.4 Construction Quality Control (CQC)*

The quality control procedures specified in the Project Technical Specifications, 2016 CQA Plan; and industry standards were strictly followed in order to provide a method to measure and regulate the quality of Secondary FML installation. These procedures included such activities as start-up trial welds, destructive and non-destructive seam testing, and verification that the deployment and seaming procedures were performed in accordance with the Project Technical Specifications, 2016 CQA Plan and industry standards.

Trial welds were performed at the start and midpoint of each workday; after each break in seaming of one hour or more; and after any equipment shutdown. The trial welds were a minimum of ten (10) feet in length for fusion welders; and a minimum of three (3) feet in length for extrusion fillet welders. One-inch-wide cutouts of the trial welds were field-tested for shear and peel strength using an on-site tensiometer (MEES's tensiometer calibration certificate is provided in **Appendix C.18**) and testing was performed in the presence of the Gordon/PSC Site CQA Engineer/Manager. If the results of the trial weld testing did not comply with the Project Technical Specifications and 2016 CQA Plan, the welder was not permitted to continue seaming until the deficiencies were corrected and an additional trial weld was performed which passed the field-testing requirements. Trial weld documentation is included in **Appendix C.8**.

The seam testing protocol for the Cell 1A deployed FML included peel and shear testing on mathematically random samples cut from the installed FML (destructive samples) and non-destructive testing (air pressure and/or vacuum box testing) on field seams. The seam-testing program is detailed in Section 2.4.3.5 of this report.

The Gordon/PSC Site CQA Engineer/Manager and FIS observed FML placement activities to verify that the deployment and seaming procedures were performed in accordance with the Project Technical Specifications and 2016 CQA Plan; which included the underlying GCL inspection and approval, seam cleaning, and precautions against potential FML damage during deployment and seaming.

#### *2.4.3.5 Construction Quality Assurance (CQA)*

The Gordon/PSC Site CQA Engineer/Manager and FIS visually inspected FML material for manufacturing and installation defects as the FML was deployed. No manufacturing flaws were observed in the deployed FML. The Gordon/PSC Site CQA Engineer/Manager inspected seamed and non-seamed areas of the FML for wrinkles, defects, holes, blisters, etc. After each panel was deployed, the Gordon/PSC Site CQA Engineer/Manager and FIS walked the length of each panel and identified any suspect areas (e.g., defects or blemishes) by marking these areas for repair with a highly visible paint.

#### *2.4.3.6 Seam Testing*

In accordance with the Project Technical Specifications and 2016 CQA Plan, the field seam verification program consisted of both destructive and non-destructive testing. Sampling and field-testing was performed by the FML installer (MEES) in the presence of the Gordon/PSC Site CQA Engineer/Manager. In addition to field-testing, destructive samples were sent to an independent quality assurance laboratory (TRI/Environmental, Inc., Austin, Texas) for peel and shear strength testing.

A. Destructive Seam Testing

In accordance with the Project Technical Specifications and 2016 CQA Plan, a minimum of one (1) destructive test for every five hundred (500) linear feet of welded seam (an average taken throughout the entire project) was performed on the FML. There were approximately 18,700 lineal feet of welded seam during installation of the secondary liner, requiring a minimum of thirty-eight (38) destructive tests (SDT prefix tests). Forty-four (44) destructive test samples were collected and evaluated in accordance with the Project Technical Specifications and 2016 CQA Plan.

Each destructive test sample was divided into three segments. The first segment was tested in the field for peel and shear strength by the installer using an on-site tensiometer. The second segment was shipped to an independent quality assurance laboratory (TRI/Environmental, Inc., Austin, Texas) for laboratory testing. The third sample segment was retained by the Gordon/PSC Site CQA Engineer/Manager and delivered to OWL to be archived in the Facility Operating Record. Results of the field destructive tests are provided in **Appendix C.11**; and the independent quality assurance laboratory test results (TRI/Environmental, Inc.) are included in **Appendix D.1**. The field destructive test results, and the independent quality assurance laboratory test results were reviewed by the Gordon/PSC Site CQA Engineer/Manager for conformance with the Project Technical Specifications and 2016 CQA Plan. All peel and shear test results met the requirements of the Project Technical Specifications and 2016 CQA Plan.

B. Non-Destructive Seam Testing

Air pressure testing was performed on double-wedge fusion welded seams except where a channel blockage occurred. Where channel blockages occurred, the seam was air tested on either side of the area that was extrusion-welded and vacuum box tested. An additional patch was extrusion welded over the repaired area and vacuum box tested. Vacuum box testing was performed on all extrusion-welded portions of seams and patches. Test results are documented on the *Secondary FML Seam Pressure Test Log* (**Appendix C.10**) and the *FML Seam Vacuum Test and Defect-Repair Log* (**Appendix C.16**). Seams and repairs were required to pass the non-destructive testing specifications outlined in the Project Technical Specifications, GRI test method GM-6, and the 2016 CQA Plan before being accepted by the Gordon/PSC Site CQA Engineer/Manager.

### *2.4.4 FML Deployment Records*

Documentation for Secondary FML deployment and testing for each panel deployed was required prior to FML approval and acceptance. CQA documentation for the FML deployed in Cell 1A is listed in **Table 10**.

**TABLE 10 - HDPE FML Deployment CQA Documentation**

| HDPE FML Deployment CQA Documentation | Certification Report Appendix Location |
|---|---|
| Secondary FML Deployment Log | Appendix C.7 |
| Secondary and Primary FML Pre-Weld Qualification Test Record | Appendix C.8 |
| Secondary FML Seaming Log | Appendix C.9 |
| Secondary FML Seam Pressure Test Log | Appendix C.10 |
| FML Seam Field Destructive Test Log | Appendix C.11 |
| FML Seam Vacuum Test and Defect-Repair Log | Appendix C.16 |
| Demtech Tensiometer Calibration Certification | Appendix C.18 |

The FML installation was accepted after the data listed in **Table 10** was submitted to, reviewed by, and approved by the Gordon/PSC Site CQA Engineer. The Cell 1A As-built Secondary FML Panel Layout is included as **Figure 6**. Daily Summary Reports were completed after each construction day, and photo documentation recorded the FML placement activity on the Landfill floor and sideslopes. The Daily Summary Reports and forms indicating approval of the previous day's FML installation and project photographs are provided in the **Field Logs** and **Photographs** Section.

## 2.5 Leak-Detection Zone

Leak-detection zone material was installed directly above the Secondary FML in accordance with the engineering design drawings, project specifications, and 2016 CQA Plan. This zone consists of a double sided Geocomposite for the sideslopes and a Geonet for the floor. The following sections describe the procedures and activities performed during the drainage layer installation, observation, and CQA testing.

### *2.5.1 Leak-Detection Zone Product*

The Geocomposite utilized in Cell 1A construction is a 200-mil, high-density polyethylene (HDPE) encapsulated by Nonwoven Geotextile, manufactured by GSE Environmental of Houston, Texas. The Geonet utilized in Cell 1A construction is a 200-mil, high-density polyethylene (HDPE), manufactured by GSE Environmental of Houston, Texas. The leak-detection zone is specified to encompass the entire double lined system and materials were delivered on-site in rolls 15 feet wide by 288 feet long for the Geocomposite and 15 feet wide by 290 feet long for the Geonet. Rolls were staged along the western perimeter of Cell 1A to provide easy access, and to minimize handling of the material. In accordance with the CQA Plan and project specifications, material was not stacked more than two rolls high. The labels were compared with the shipping invoice to verify that the

materials received corresponded with materials subjected to manufactures quality control/manufactures quality assurance testing (see Section 2.6.3). The material was also inspected for damage during off-loading and staging.

### *2.5.2 Leak-Detection Zone Material Installation*

The leak detection zone material installation activities were performed in accordance with the guidelines stipulated in the 2016 CQA Plan, project specifications, the engineering design drawings, and industry standards for handling, and placement. Each roll was carefully moved from the staging area to Cell 1A using a rubber-tired extendable forklift. The forklift was not permitted on the Secondary FML, and the material was placed by hand. Upon deployment, each roll label was removed and submitted to the Gordon/PSC Site CQA Engineer/Manager, and panel location documented (see **Figure 7**).

After each panel had been placed, adjoining panels were positioned with a 4 to 6-inch overlap. The overlap distance is required for proper attachment using zip ties placed at 5 feet and 6 inches, longitudinally and end-to-end seams respectively. The Geotextile encapsulating the Geonet core of the Geocomposite were then fused together from panel to panel using industry standard heat tacking methods. Seams were oriented at approximately 45 degrees to the line of prevailing base grade slope, and perpendicular to the sideslopes.

### *2.5.3 Leak-Detection Zone Testing*

Material testing included manufacturer's quality control (MQC) and quality assurance (MQA), conformance testing, construction quality control (CQC), CQA, and seam testing. Each type of testing is discussed in the following sections.

#### *2.5.3.1 Manufacturer's Quality Control (MQC)*

Formosa Plastics Corporation, Texas performed resin testing on the raw materials used in the manufacturing of the Geocomposite and Geonet. These test results and written certifications that the product delivered has been extruded from an acceptable resin are included in **Appendix B.5** and **B.7**.

#### *2.5.3.2 Manufacturer's Quality Assurance (MQA)*

As required by the Project Technical Specifications and 2016 CQA Plan, the manufacturer (GSE) performed the Geocomposite and Geonet property testing listed in **Table 11** prior to delivery of the materials to the site.

**TABLE 11 – GSE Environmental Geocomposite and Geonet – MQC Testing**

| Geocomposite | Geonet | Test Property | ASTM Method |
|---|---|---|---|
| ✓ | ✓ | Thickness | ASTM D5199 |
| ✓ | ✓ | Density | ASTM D1505 |
| | ✓ | Melt Index | ASTM D1238 |
| ✓ | ✓ | Carbon Black Content | ASTM D4218 |
| ✓ | ✓ | Tensile Strength | ASTM D7179 |
| ✓ | | Peel Strength | ASTM D7005 |
| ✓ | ✓ | Mass Per Unit Area | ASTM D5261 |
| ✓ | ✓ | Transmissivity (loaded) | ASTM D4716 |

The Geocomposite and Geonet quality control certifications, property values and testing frequencies for the on-site material delivered to OWL are provided in **Appendix B.5** and **B.7**.

#### *2.5.3.3 Conformance Testing*

Conformance sampling for the Geocomposite and Geonet material was performed by TRI, Austin, Texas at the manufacturer's facility prior to shipment of the materials to OWL. TRI collected a sample approximately two feet long from the entire roll width and performed conformance testing at the TRI laboratory in Austin, Texas. Conformance samples were collected at a frequency of at least one (1) per 100,000 $ft^2$ of material installed to verify that the Geocomposite and Geonet delivered to the OWL met the minimum properties listed in the Project Technical Specifications and 2016 CQA Plan. Approximately 143,500 $ft^2$ of Geocomposite and approximately 273,800 $ft^2$ of Geonet material was installed in the Cell 1A leak detection layer, requiring a minimum of two (2) Geocomposite and three (3) Geonet samples. TRI tested four (4) Geocomposite and fifteen (15) Geonet conformances samples for the properties listed in **Table 12**; as specified in the Project Technical Specifications and 2016 CQA Plan.

**Table 12 – GSE Environmental Geocomposite and Geonet – Conformance Testing**

| Geocomposite | Geonet | Test Property | ASTM Method |
|---|---|---|---|
| | ✓ | Thickness | ASTM D1777 |
| ✓ | ✓ | Density | ASTM D1505 |
| | ✓ | Wide Width Tensile Properties | ASTM D4595 |
| | ✓ | Mass Per Unit Area | ASTM D3776 |
| | ✓ | Carbon Black | ASTM D1603 |
| | ✓ | Melt Index | ASTM D1238 |
| ✓ | | Transmissivity | ASTM D4716 |
| ✓ | | Peel Strength | ASTM D7005 |
| ✓ | | Tensile Strength | ASTM D7179 |

**Appendix B.6** and **B.8** provides the independent quality assurance laboratory test results. The results were reviewed by the Gordon/PSC CQA Engineer and compared with the Project Technical Specifications and 2016 CQA Plan for geonet. The properties of the Geocomposite and geonet meet or exceed the Project Technical Specifications and 2016 CQA Plan requirements.

#### *2.5.3.4 Construction Quality Control (CQC)*

The quality control procedures specified in the project documents were strictly followed in order to provide a method to measure and regulate the quality of Geocomposite and geonet installation. These procedures included such activities as proper overlap and correct zip-tie spacing on the floor and slopes.

Both the Gordon/PSC Site CQA Engineer/Manager and FIS observed placement activities to verify that the deployment and seaming procedures were performed in accordance with the CQA Plan and project specifications.

#### *2.5.3.5 Construction Quality Assurance (CQA)*

The Gordon/PSC Site CQA Engineer/Manager and FIM visually inspected all material for manufacturing and installation defects. No manufacturing flaws were observed in the installed Geocomposite and Geonet. The Gordon/PSC Site CQA Engineer/Manager inspected all seamed and non-seamed areas of the material for wrinkles, defects, etc. After each panel was deployed, the Gordon/PSC Site CQA Engineer/Manager and FIS walked the length of each panel to identify any suspect areas (e.g., defects or tears) by marking these areas for repair with a highly visible paint. No suspect areas were found.

### *2.5.4 Leak Detection Zone Deployment Records*

Documentation for the Leak Detection Zone material deployment was required prior to approval and acceptance. Deployment documentation for the materials deployed in Cell 1A are provided in **Appendices C.12 and C.17**.

The Leak Detection Zone material installation was accepted after the above-listed data was submitted to, reviewed, and approved by the Gordon/PSC CQA Engineer. The Leak Detection Zone Panel As-built for Cell 1A is included as **Figure 7**. Daily Summary Reports were logged during each construction day, and photographs were taken showing the panel placement activity. The Daily Summary Reports and project photographs are provided in the **Field Logs** and **Photographs** Section.

## 2.6 60-Mil Primary Flexible Membrane Liner

The Primary FML was installed in direct contact above the Leak Detection Zone materials in accordance with the Construction Plans, Project Technical Specifications, and 2016 CQA Plan. The following sections describe the procedures and activities performed during Primary FML installation, observation, and CQA testing.

### *2.6.1 Flexible Membrane Liner Product*

The Primary FML utilized in Cell 1A construction was 60-mil, high-density polyethylene (HDPE), manufactured by GSE Environmental of Houston, Texas. Smooth FML was designated for the floor and textured FML was designated for the sideslopes of Cell 1A. The material was delivered to OWL in rolls twenty-two and a half (22.5) feet wide with by five hundred-sixty (560) feet long for the smooth and five hundred-twenty (520) feet long for the textured FML. The FML was stored in the Contractor's Staging Area and in accordance with the Project Technical Specifications and 2016 CQA Plan. The stored FML was not stacked more than two (2) rolls high. The Gordon/PSC Site CQA Engineer/Manager compared roll identification labels with shipping invoices to verify that the FML delivered to OWL corresponded with FML subjected to manufacturer's quality control and quality assurance testing (Section 2.6.3).

### *2.6.2 Flexible Membrane Liner Installation*

The FML installation activities were performed in accordance with the guidelines specified in the Construction Plans, Project Technical Specifications and 2016 CQA Plan; and industry standards for FML handling, placement, and testing. Each roll of FML was carefully moved from the Contractor's Staging Area at the west end of OWL using a rubber-tired forklift; and FML was not placed in standing water or deployed during rainfall. The forklift was not allowed on the Leak Detection Zone materials, the Primary HDPE Liner was placed by hand and aided with the use of wire rope and pulling equipment. Upon deployment, each role identification label was removed and submitted to the Gordon/PSC Site CQA Engineer/Manager and were compared with the shipping invoices to verify that the FML delivered to OWL corresponded with FML subjected to manufacturers' quality control and quality assurance testing. FML being deployed was documented in the *Primary FML Deployment Log* (**Appendix C.13**) and Cell 1A 60-Mil Primary Liner Panel Layout drawing (**Figure 8**). After each FML panel had been deployed, adjoining panels were positioned with a four (4) to six (6) inch longitudinal overlap required for hot-wedge fusion welding. The overlap distance is required for proper seaming, and to allow peel and shear tests to be

performed on the seams. Seams were oriented at approximately forty-five (45) degrees to the line of prevailing base grade slope on the Cell 1A floor, and parallel to the Cell 1A sideslopes, per the Project Technical Specifications and 2016 CQA Plan (see 60-Mil Primary Liner Panel Layout, **Figure 8**).

### *2.6.3 Flexible Membrane Liner Testing*

FML testing included manufacturer's quality control (MQC) and manufacturer's quality assurance (MQA), conformance testing, construction quality control (CQC), CQA, and seam testing. Each type of testing methodology is discussed in the following sections.

#### *2.6.3.1 Manufacturer's Quality Control (MQC)*

Formosa Plastics Corp, Texas performed resin testing on the raw materials used in the manufacturing of the smooth, and textured FML. These test results and written certifications verified that the FML delivered to OWL has been extruded from an acceptable resin meeting the properties specified in GRI-GM 13, *"Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes"*, are included in **Appendix B.4**.

#### *2.6.3.2 Manufacturer's Quality Assurance (MQA)*

As a part of the MQA testing, specific performance and characterization properties were evaluated on random samples collected from the manufactured FML rolls prior to their delivery to OWL as listed in **Table 13.**

**TABLE 13 - GSE Environmental HDPE FML - MQA Testing**

| **60-mil HDPE Double-Sided Textured and Smooth HDPE FML Property** | **ASTM Method** |
|---|---|
| Thickness | ASTM D5994 |
| Asperity Height (Textured) | ASTM D7466 |
| Density | ASTM D1505 |
| Mass per unit area | ASTM D5993 |
| Melt Flow Index | ASTM D1238, Condition E |
| Tensile Properties | ASTM D6693 and ASTM D 6693, Modified |
| Tear Resistance | ASTM D1004, Modified |
| Puncture Resistance | ASTM D4833, Modified |
| Carbon Black Content | ASTM D4218 |
| Carbon Black Dispersion | ASTM D5596 |
| Environmental Stress Crack Resistance using Notched Constant Tensile Load | ASTM D5397 |

MQA test results are included in **Appendix B.3**. These results were reviewed by the Gordon/PSC Site CQA Engineer and confirmed against the Project Technical Specifications and 2016 CQA Plan requirements. MQA testing results met the requirements set forth in the Project Technical Specifications and 2016 CQA Plan.

#### *2.6.3.3 Conformance Testing*

Conformance sampling for FML material was performed by TRI, Austin, Texas at the manufacturer's facility prior to shipment of the FML to OWL. TRI collected samples approximately two feet long from the entire roll width and performed conformance testing at the TRI laboratory in Austin, Texas. Conformance samples were collected at a frequency of at least one (1) per 100,000 $ft^2$ of FML installed to verify that the FML delivered to the OWL met the minimum properties listed in the Project Technical Specifications and 2016 CQA Plan. Approximately 419,600 $ft^2$ of primary HDPE FML were installed during Cell 1A construction; requiring a minimum of five (5) HDPE FML conformance samples. Thirteen (13) samples of the HDPE FML were tested by TRI for conformance.

TRI tested the FML samples for the properties listed in **Table 14**; as specified in the Project Technical Specifications and 2016 CQA Plan.

**TABLE 14 - GSE Environmental HDPE FML – Conformance Testing**

| **60-mil HDPE Smooth and Double-sided Textured FML Property** | **ASTM Method** |
|---|---|
| Thickness | ASTM D5994 |
| Density | ASTM D1505 |
| Mass per unit area | ASTM D5993 |
| Tensile Properties | ASTM D6693 and ASTM D 6693, Modified |
| Tear Resistance | ASTM D1004, Modified |
| Carbon Black Content | ASTM D4218 |
| Carbon Black Dispersion | ASTM D5596 |

The conformance test results were reviewed by the Gordon/PSC Site CQA Engineer and accepted in accordance with Project Technical Specifications and 2016 CQA Plan. The conformance test results indicated that the FML met the minimum property requirements specified in the Project Technical Specifications and 2016 CQA Plan. The conformance testing results for the thirteen (13) samples are included in **Appendix B.4.**

#### *2.6.3.4 Construction Quality Control (CQC)*

The quality control procedures specified in the Project Technical Specifications, 2016 CQA Plan; and industry standards were strictly followed in order to provide a method to measure and regulate the quality of FML installation. These procedures included such activities as start-up trial welds, destructive and non-destructive seam testing, and verification that the deployment and seaming procedures were performed in accordance with the Project Technical Specifications, 2016 CQA Plan and industry standards.

Trial welds were performed at the start and midpoint of each workday; after each break in seaming of one hour or more; and after any equipment shutdown. The trial welds were a minimum of ten (10) feet in length for fusion welders; and a minimum of three (3) feet in length for extrusion fillet welders. One-inch-wide cutouts of the trial welds were field-tested for shear and peel strength using an on-site tensiometer (MEES's tensiometer calibration certificate is provided in **Appendix C.18**) and testing was performed in the presence of the Gordon/PSC Site CQA Engineer/Manager. If the results of the trial weld testing did not comply with the Project Technical Specifications and 2016 CQA Plan, the welder was not permitted to continue seaming until the deficiencies were corrected and an additional trial weld was performed which passed the field-testing requirements. Primary trial weld documentation is included in **Appendix C.8**.

The seam testing protocol for the deployed FML included peel and shear testing on mathematically random samples cut from the installed FML (destructive samples) and non-destructive testing (air pressure and/or vacuum box testing) on field seams. The seam-testing program is detailed in Section 2.7.3.6 of this report.

The Gordon/PSC Site CQA Engineer/Manager and FIS observed FML placement activities to verify that the deployment and seaming procedures were performed in accordance with the Project Technical Specifications and 2016 CQA Plan; which included the underlying Leak Detection Zone materials inspection and approval, seam cleaning, and precautions against potential FML damage during deployment and seaming.

#### *2.6.3.5. Construction Quality Assurance (CQA)*

The Gordon/PSC Site CQA Engineer/Manager and FIS visually inspected FML material for manufacturing and installation defects as the FML was deployed. No manufacturing flaws were observed in the deployed FML. The Gordon/PSC Site CQA Engineer/Manager inspected seamed and non-seamed areas of the FML for wrinkles, defects, holes, blisters, etc. After each panel was

deployed, the Gordon/PSC Site CQA Engineer/Manager and FIS walked the length of each panel and identified any suspect areas (e.g., defects or blemishes) by marking these areas for repair with a highly visible paint.

#### *2.6.3.6 Seam Testing*

In accordance with the Project Technical Specifications and 2016 CQA Plan, the field seam verification program consisted of both destructive and non-destructive testing. Sampling and field-testing was performed by the FML installer (MEES) in the presence of the Gordon/PSC Site CQA Engineer/Manager. In addition to field-testing, destructive samples were sent to an independent quality assurance laboratory (TRI/Environmental, Inc., Austin, Texas) for peel and shear strength testing.

A. Destructive Seam Testing

In accordance with the Project Technical Specifications and 2016 CQA Plan, a minimum of one (1) destructive test for every five hundred (500) linear feet of welded seam (an average taken throughout the entire project) was performed on the FML. There were approximately 19,700 lineal feet of welded seam in the Primary Liner requiring a minimum of forty (40) destructive tests. Forty-four (44) destructive test samples were collected and evaluated in accordance with the Project Technical Specifications and 2016 CQA Plan.

Each destructive test sample was divided into three segments. The first segment was tested in the field for peel and shear strength by the installer using an on-site tensiometer. The second segment was shipped to an independent quality assurance laboratory (TRI/Environmental, Inc., Austin, Texas) for laboratory testing. The third sample segment was retained by the Gordon/PSC Site CQA Engineer/Manager and delivered to OWL to be archived in the Facility Operating Record. Results of the field destructive tests are provided in **Appendix C.11**; and the independent quality assurance laboratory test results (TRI/Environmental, Inc.) are included in **Appendix D.2** . The field destructive test results, and the independent quality assurance laboratory test results were reviewed by the Gordon/PSC Site CQA Engineer/Manager for conformance with the Project Technical Specifications and 2016 CQA Plan. All peel and shear test results met the requirements of the Project Technical Specifications and 2016 CQA Plan.

B. Non-Destructive Seam Testing

Air pressure testing was performed on all double-wedge fusion welded seams in accordance with GRI GM6 “Practice for Pressurized Air Channel Test for Dual Seamed Geomembranes”, except

where a channel blockage occurred. Where channel blockages occurred, the seam was air tested on either side of the area was extrusion-welded and vacuum box tested. An additional patch was extrusion welded over the repaired area and vacuum box tested. Vacuum box testing was performed on all extrusion-welded portions of seams and patches. Test results are documented on the *Primary FML Seam Pressure Test Log* (**Appendix C.15**) and the *FML Seam Vacuum Test and Defect-Repair Log* (**Appendix C.16**). Seams and repairs were required to pass the non-destructive testing specifications outlined in the Project Technical Specifications, GRI Test Method GM-6, and 2016 CQA Plan before being accepted by the Gordon/PSC Site CQA Engineer/Manager.

### *2.6.4 FML Deployment Records*

Documentation for FML deployment and testing for each panel deployed was required prior to FML approval and acceptance. CQA documentation for the FML deployed in Cell 1A are listed in **Table 15**.

**TABLE 15 - HDPE Primary FML Deployment CQA Documentation**

| HDPE FML Deployment CQA Documentation | Certification Report Appendix Location |
|---|---|
| Secondary and Primary FML Pre-Weld Qualification Test Log | Appendix C.8 |
| Primary FML Deployment Log | Appendix C.13 |
| Primary FML Seaming Log | Appendix C.14 |
| Primary FML Seam Pressure Test Log | Appendix C.15 |
| FML Seam Vacuum Test and Defect-Repair Log | Appendix C.16 |
| Demtech Tensiometer Calibration Certification | Appendix C.18 |

The FML installation was accepted after the data listed in **Table 15** was submitted to, reviewed by, and approved by the Gordon/PSC Site CQA Engineer. The Cell 1A As-built FML Panel Layout is included as **Figure 8**. Daily Summary Reports were completed after each construction day, and photo documentation recorded the FML placement activity on the Cell 1A floor and sideslopes.

## 2.7 Geosynthetic Cushion/Drainage Layer

Geosynthetic Cushion/Drainage Layer was installed directly above the primary FML in accordance with the engineering design drawings, project specifications, and 2016 CQA Plan. This layer consists of a double sided Geocomposite for the sideslopes and a single-sided Geocomposite for

the floor. The following sections describe the procedures and activities performed during the drainage layer installation, observation, and CQA testing.

### *2.7.1 Geosynthetic Cushion/Drainage Layer Product*

The Geocomposite utilized in Cell 1A construction is a 200-mil, high-density polyethylene (HDPE) encapsulated on both sides for double-sided and one side for a single-sided Geocomposite, manufactured by GSE Environmental of Houston, Texas. The Cushion/Drainage Layer material is specified to encompass the entire double lined system and were delivered on-site in rolls 15 feet wide by 288 feet long for single-sided Geocomposite and 15 feet wide by 200 feet long for double-sided Geocomposite. Rolls were staged along the western perimeter of Cell 1A to provide easy access, and to minimize handling of the material. In accordance with the CQA Plan and project specifications, material was not stacked more than two rolls high. The labels were compared with the shipping invoice to verify that the materials received corresponded with materials subjected to manufactures quality control/manufactures quality assurance testing (see Section 2.7.3). The material was also inspected for damage during off-loading and staging.

### *2.7.2 Geosynthetic Cushion/Drainage Layer Material Installation*

The Cushion/Drainage Layer material installation activities were performed in accordance with the guidelines stipulated in the 2016 CQA Plan, project specifications, the engineering design drawings, and industry standards for handling, and placement. Each roll was carefully moved from the staging area to Cell 1A using a rubber-tired extendable forklift. The forklift was not permitted on the Primary FML, and the material was placed by hand. Upon deployment, each roll label was removed and submitted to the Gordon/PSC Site CQA Engineer/Manager, and panel location documented (see **Figure 9**).

After each panel had been placed, adjoining panels were positioned with a 4 to 6-inch overlap. The overlap distance is required for proper attachment using zip ties placed at 5 feet and 6 inches, longitudinally and end-to-end seams respectively. The Geotextile encapsulating the Geonet core of the Geocomposite were then fused together using industry standard heat tacking methods. Seams were oriented at approximately 45 degrees to the line of prevailing base grade slope, and perpendicular to the sideslopes.

### *2.7.3 Geosynthetic Cushion/Drainage Layer Testing*

Geocomposite testing included manufacturer's quality control (MQC) and quality assurance (MQA), conformance testing, construction quality control (CQC), CQA, and seam testing. Each type of testing is discussed in the following sections.

#### *2.7.3.1 Manufacturer's Quality Control (MQC)*

Formosa Plastics Corp, Texas performed resin testing on the raw materials used in the manufacturing of the Geocomposite. These test results and written certifications that the product delivered has been extruded from an acceptable resin are included in **Appendix B.7**.

#### *2.7.3.2 Manufacturer's Quality Assurance (MQA)*

As required by the Project Technical Specifications and 2016 CQA Plan, the manufacturer (GSE) performed the Geocomposite property testing listed in **Table 16** prior to delivery of the materials to the site.

**TABLE 16 - GSE Environmental Geocomposite - MQC Testing**

| Geocomposite Property | ASTM Method |
|---|---|
| Thickness | ASTM D5199 |
| Density | ASTM D1505 |
| Carbon Black Content | ASTM D4218 |
| Tensile Strength | ASTM D7179 |
| Peel Strength | ASTM D7005 |
| Mass Per Unit Area | ASTM D5261 |
| Transmissivity (loaded) | ASTM D4716 |

The Geocomposite quality control certifications, property values and testing frequencies for the on-site material delivered to OWL are provided in **Appendix B.8**.

#### *2.7.3.3 Conformance Testing*

Conformance sampling for the Geocomposite material was performed by TRI, Austin, Texas at the manufacturer's facility prior to shipment of the Geocomposite to OWL. TRI collected a sample approximately two feet long from the entire roll width and performed conformance testing at the TRI laboratory in Austin, Texas. Conformance samples were collected at a frequency of at least one (1) per 100,000 $ft^2$ installed to verify that the Geocomposite delivered to the OWL met the minimum properties listed in the Project Technical Specifications and 2016 CQA Plan. Approximately

147,600 $ft^2$ of double-sided Geocomposite and approximately 270,800 $ft^2$ of single-sided Geocomposite material was installed in Cell 1A requiring a minimum of two (2) double-sided Geocomposite and three (3) single-sided Geocomposite samples. TRI tested four (4) single-sided and four (4) double-sided Geocomposite conformance sample for the properties listed in **Table 17**; as specified in the Project Technical Specifications and 2016 CQA Plan.

**TABLE 17 - GSE Environmental Geocomposite - Conformance Testing**

| Geocomposite Property | ASTM Method |
|---|---|
| Density | ASTM D1505 |
| Transmissivity | ASTM D4716 |
| Peel Strength | ASTM D7005 |
| Tensile Strength | ASTM D7179 |

**Appendix B.8.** provides the independent quality assurance laboratory test results. The results were reviewed by the Gordon/PSC CQA Engineer and compared with the Project Technical Specifications and 2016 CQA Plan for Geocomposite. The properties of the Geocomposite meet or exceed the Project Technical Specifications and 2016 CQA Plan requirements.

#### *2.7.3.4 Construction Quality Control (CQC)*

The quality control procedures specified in the project documents were strictly followed in order to provide a method to measure and regulate the quality of Geocomposite installation. These procedures included such activities as proper overlap and correct zip-tie spacing on the floor and sideslopes.

Both the Gordon/PSC Site CQA Engineer/Manager and FIS observed placement activities to verify that the deployment and seaming procedures were performed in accordance with the CQA Plan and project specifications.

#### *2.7.3.5 Construction Quality Assurance (CQA)*

The Gordon/PSC Site CQA Engineer/Manager and FIM visually inspected all material for manufacturing and installation defects. No manufacturing flaws were observed in the installed Geocomposite. The Gordon/PSC Site CQA Engineer/Manager inspected all seamed and non-seamed areas of the Geocomposite for wrinkles, defects, etc. After each panel was deployed, the Gordon/PSC Site CQA Engineer/Manager and FIS walked the length of each panel to identify any suspect areas (e.g., defects or tears) by marking these areas for repair with a highly visible paint. No suspect areas were found.

### *2.7.4 Geosynthetic Cushion/Drainage Layer Deployment Records*

Documentation for the Cushion/Drainage Layer material deployment was required prior to approval and acceptance. CQA documentation for the Geocomposite deployed in Cell 1A is provided in **Appendix C.17**

The Drainage/Cushion Layer material installation was accepted after the above-listed data was submitted to, reviewed, and approved by the Gordon/PSC CQA Officer. The Geosynthetic Cushion/Drainage Layer Panel As-built for Cell 1A is included as **Figure 9**. Daily Summary Reports were logged during each construction day, and photographs were taken showing the Geocomposite placement activity. The Daily Summary Reports and project photographs are provided in the **Field Logs** and **Photographs** Section. Upon installation of the Drainage/Cushion Layer, the anchor trench was backfilled and compacted to design specifications **(Appendix A.4)**.

## 2.8 Protective Soil Layer

Upon completion of the Liner System installation, and after confirming that all repairs were adequately addressed, T-5 began placing a minimum two (2) foot thickness of PSL on the cell floor and sideslope. Material for the PSL is comprised of on-site soil material pre-qualified by the Gordon/PSC Site CQA Engineer/Manager (**Appendix A.5 and A.6)**.

Gordon/PSC observed the placement of the PSL to ensure that the methods and material used during construction did not damage the installed liner system. The thickness of the PSL was verified by field survey measurements on January 27th conducted by Transglobal (**Figure 10**). The survey indicates that a minimum of two (2) feet of PSL was placed over the top of the cell floor and sideslope liner systems **(Figure 11).**

## 2.9 Future Liner Tie-in Details, Stormwater and Liner Protection Berm

Future liner tie-in will be to Cell C1B directly to the south, and Cell C2A directly to the west of Cell 1A. The design for the stormwater and liner protection berm constructed in the perimeter transition zones of Cell 1A, as shown on **Figure 2**, serves the intended purpose to control stormwater run-on and to protect the installed liner system.

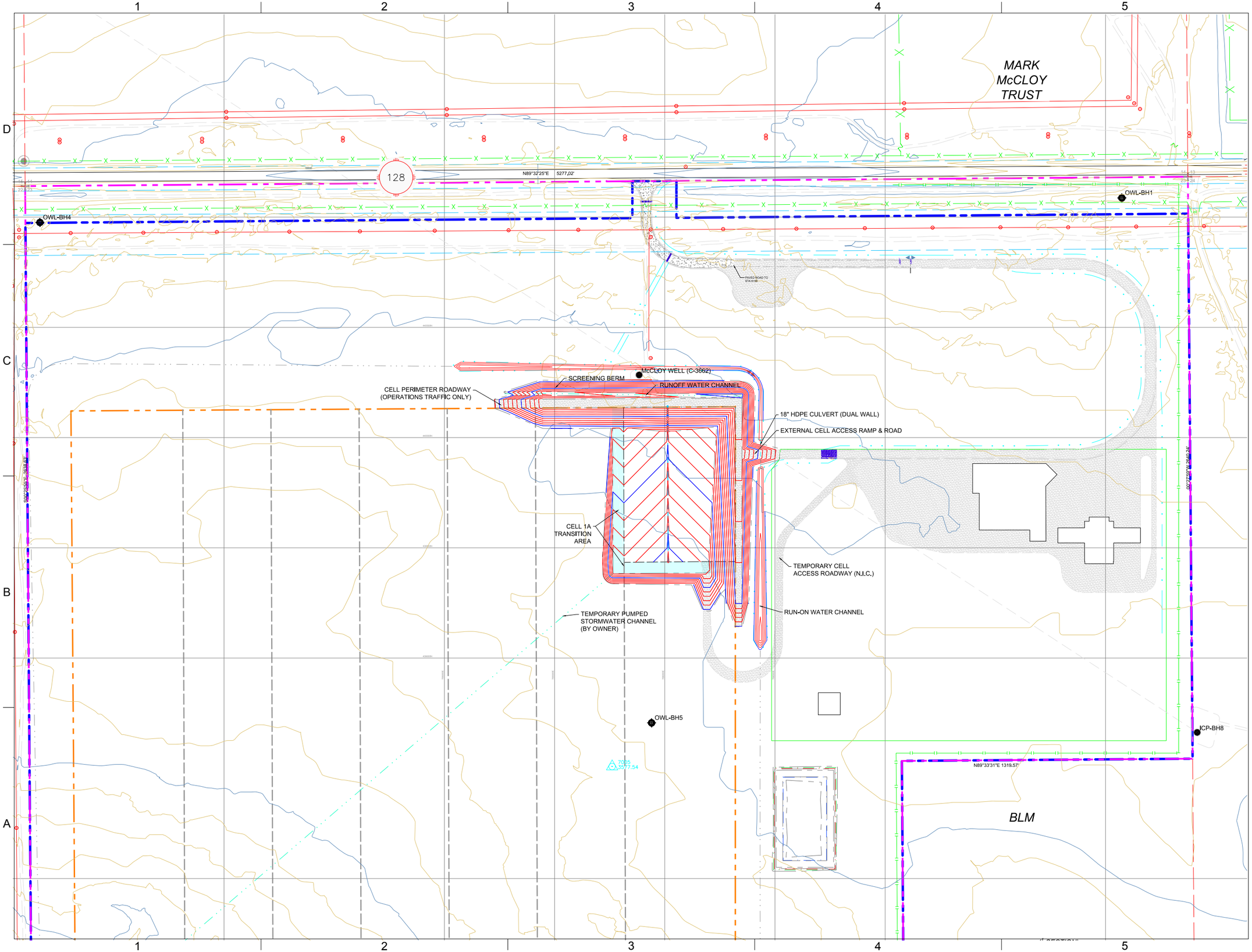
The Contractor constructed the stormwater and liner protection berm by placing soil along the floor and sideslope of the cell until design grades were achieved. The stormwater and liner protection berm as-built is shown on **Figure 3**.

## 3.0 ENGINEERING CERTIFICATION

This Engineering Certification Report demonstrates that the composite liner and leak detection system for Cell 1A has been installed in accordance with the New Mexico Energy, Minerals and Natural Resources Department Regulations (19.15.36.11 – 19.15.36.112 NMAC). This Certification is sealed by Charles W. Fiedler, a New Mexico Professional Engineer with extensive applicable experience with waste engineering and geosynthetic liner systems (**Appendix G**).

## FIGURES

Figure 1 OWL Landfill Services – Site Location Map
Figure 2 OWL Landfill Services – Subgrade Design Grades
Figure 3 OWL Landfill Services – Subgrade As-Built Grades
Figure 4 OWL Landfill Services – Field Density Test Locations
Figure 5 OWL Landfill Services – GCL Panel Layout
Figure 6 OWL Landfill Services – 60 Mil Secondary FML Panel Layout
Figure 7 OWL Landfill Services – Geosynthetic Leak Detection Layer As-built
Figure 8 OWL Landfill Services – 60 Mil Primary FML Panel Layout
Figure 9 OWL Landfill Services – Geosynthetic Cushion Drainage Layout As-Built
Figure 10 OWL Landfill Services – Top of PSL As-Built Grades
Figure 11 OWL Landfill Services – PSL As-Built Thickness




FILE NAME: X:\2018\0560.18\03_DSGN\01_DWG\050_CIVIL\03_CONST PLAN SET\C\QA FIGURES\FIGURE 1 SITE LOCATION.dwg LAYOUT NAME: C-501 PRINTED: Thursday, January 23, 2020 - 1:24pm USER: dmill

GORDON ENVIRONMENTAL PSC

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# OWL LANDFILL SERVICES, LLC.

## OWL SURFACE WASTE MANAGEMENT FACILITY CONSTRUCTION PLANS

LEA COUNTY, NEW MEXICO

KEY PLAN

N

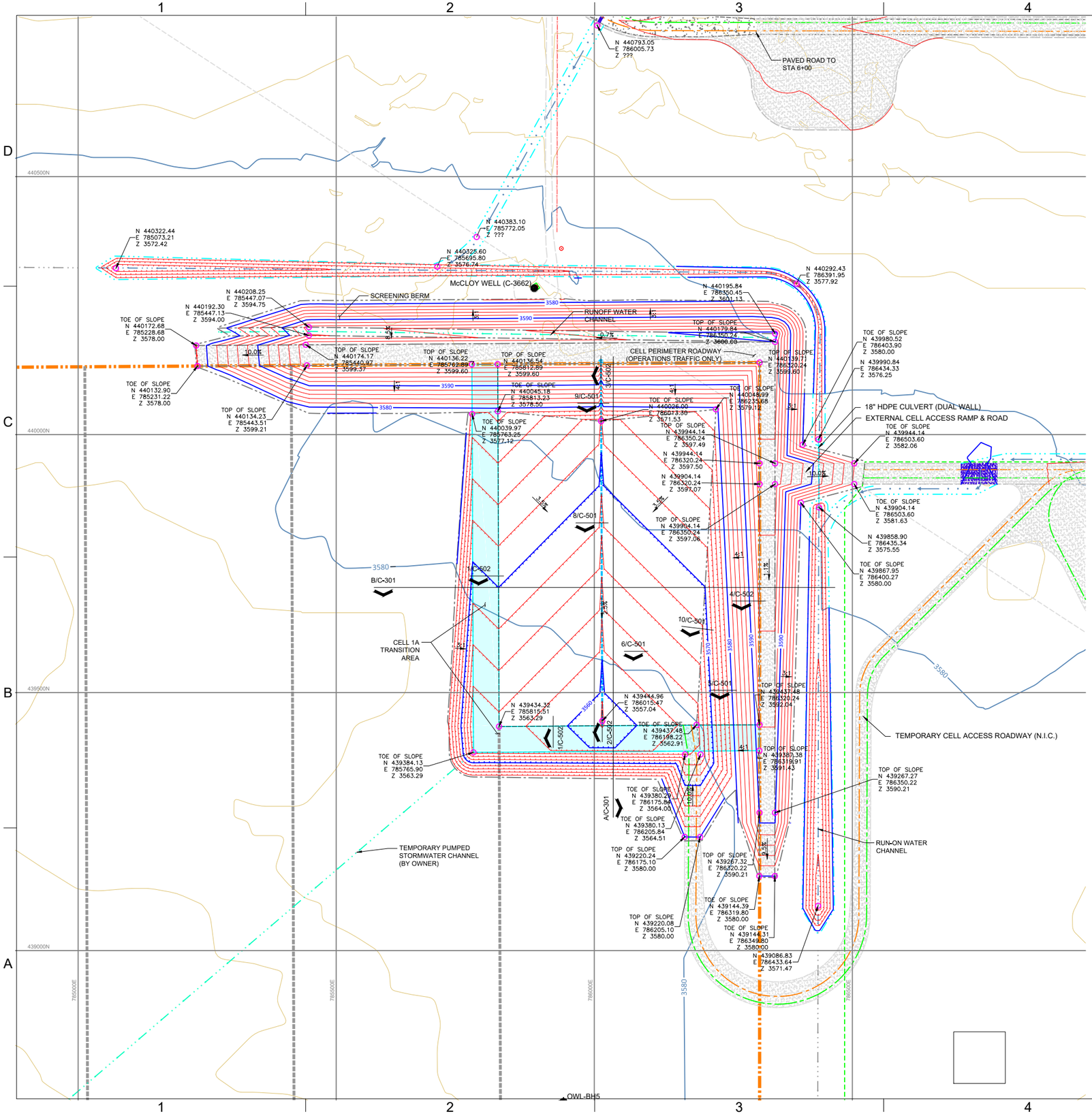
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ISSUING OFFICE: RIO RANCHO PROJECT NO: 0560.18

## SITE LOCATION MAP

# FIGURE 1




LEGEND

- PROPERTY BOUNDARY
- SECTION BOUNDARY
- SITE BOUNDARY
- SOLID WASTE DISPOSAL BOUNDARY
- PROCESSING AREA BOUNDARY
- CELL BOUNDARY
- EXISTING EASEMENT
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC LINES
- TRAFFIC DIRECTION STRIPING
- TRAFFIC DIRECTION STRIPING
- EXISTING CONTOUR - INDEX (10')
- EXISTING CONTOUR - INTERMEDIATE (2')
- EXISTING UNPAVED ROADWAY
- EXISTING PAVED ROADWAY
- PROPOSED UNPAVED ROADWAY
- PROPOSED PAVED ROADWAY
- PROPOSED CONTOUR - INDEX (10')
- PROPOSED CONTOUR - INTERMEDIATE (2')
- PROPOSED LEACHATE COLLECTION LINE
- PROPOSED RUN-ON DRAINAGE PATH
- PROPOSED RUNOFF DRAINAGE PATH
- FUTURE COMPLETED RUNOFF DRAINAGE PATH
- PROPOSED DRAINAGE CHANNEL EDGES
- PROPOSED CULVERT
- TOP OF SLOPE
- TOE OF SLOPE
- C-3662 — BORING/WELL LOCATION
- OWL-BH1 — GEOTECHNICAL BORING LOCATION
- POWER PILE

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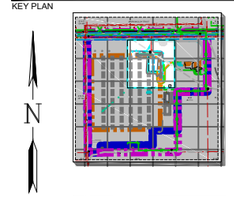
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# OWL LANDFILL SERVICES, LLC.

## OWL SURFACE WASTE MANAGEMENT FACILITY CONSTRUCTION PLANS

LEA COUNTY, NEW MEXICO

KEY PLAN



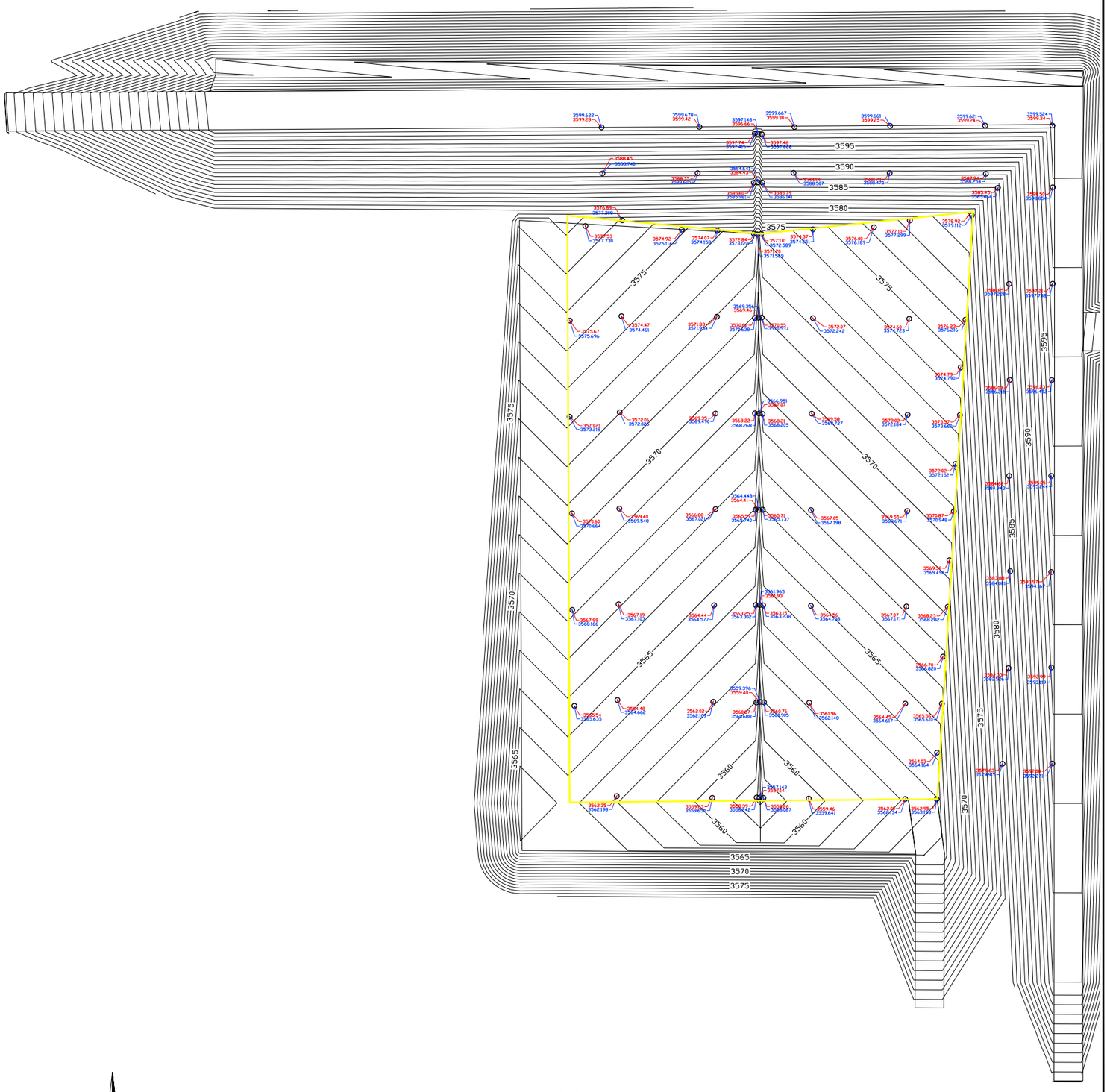

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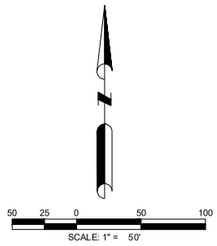
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## LANDFILL SUBGRADE GRADING PLAN

# FIGURE 2

FILE NAME: X:\2018\0560.18\03_DSGN\01_DWG\050_CIVIL\03_CONST PLAN SET\COA FIGURES\FIGURE 2 SUBGRADE DESIGN GRADES.dwg LAYOUT NAME: C-103 PRINTED: Thursday, January 30, 2020 - 6:15am USER: dmill







I HEREBY CERTIFY THAT ON 11-25-19 AND 12-04-19, A SUBGRADE AS-BUILT SURVEY WAS PERFORMED ON THE OWL LANDFILL IN SECTION 23 OF TOWNSHIP 24 SOUTH, RANGE 33 EAST OF THE NEW MEXICO PRINCIPAL MERIDIAN, LEA COUNTY, NEW MEXICO UNDER MY DIRECT SUPERVISION. I FURTHER CERTIFY THAT ALL OBSERVED LINER SUBGRADE AS-BUILT ELEVATIONS ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

**LEGEND**

- 3560 = DESIGN CONTOUR MAJOR
- = LINER LIMIT
- = FEATURE LINE
- 3565.00 = AS-BUILT SUBGRADE
- 3565.000 = DESIGN SUBGRADE

SUMMARY

**FINAL**
**1-22-2020**

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |

PIPE SPECIFICATIONS AND TESTING REQUIREMENTS

| O.D. | I.D. | WT. | GRADE | CLASS | MOAP | %SMYS | D.P. | TEST PRESSURE | DURATION | X-RAY |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

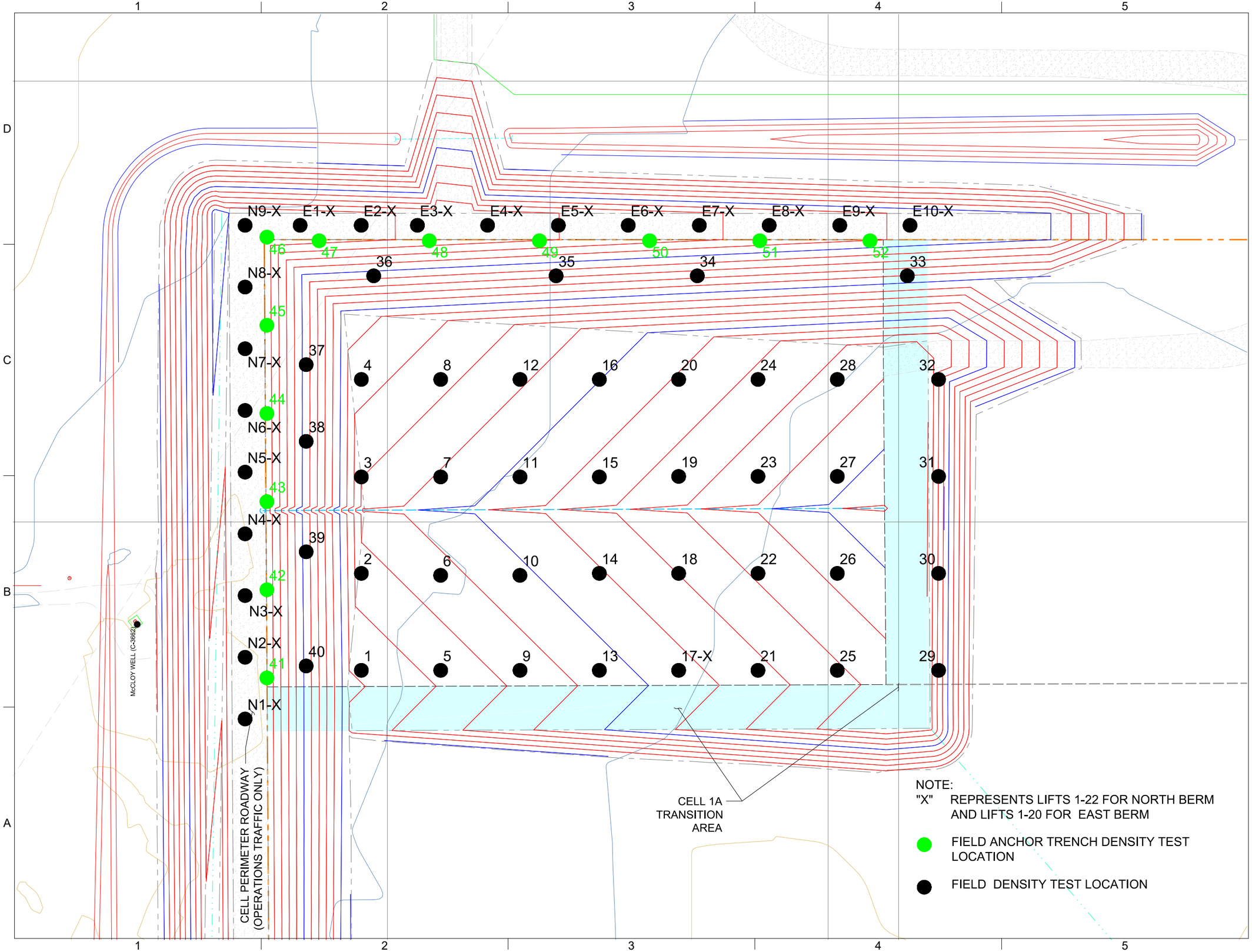
TRANSGLOBAL SERVICES LLC
TBPLS FIRM# 10193760
1100 Macon St.
Fort Worth, Texas 76102
(817) 529-1180 ~ Fax (817) 529-1181

# HIGH ROLLER EPIC

**1910047 OWL LANDFILL**
**SUBGRADE ASBUILT EXHIBIT**

| | | |
|---|---|---|
| Drawn by: RG | Checked by: GS | Approved by: GS |
| Project No: 1910047 | AFE: ---- | SRID: ---- |
| Date: 01/22/20 | SHEET 1 OF 1 | Rev: 0 |
| Scale: 1" = N.T.S. | | |

FIGURE 3




FILE NAME: X:\2018\0560.18\03_DSGN\01_DWG\059_CIVIL\03_CONST PLAN SET\COA FIGURES\FIGURE 4 FIELD DENSITY TEST.dwg LAYOUT NAME: FIGURE 4 PRINTED: Friday, January 24, 2020 - 11:59am USER: dmill

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**OWL LANDFILL SERVICES, LLC.**

**OWL SURFACE WASTE MANAGEMENT FACILITY CONSTRUCTION PLANS**

**LEA COUNTY, NEW MEXICO**

KEY PLAN

N

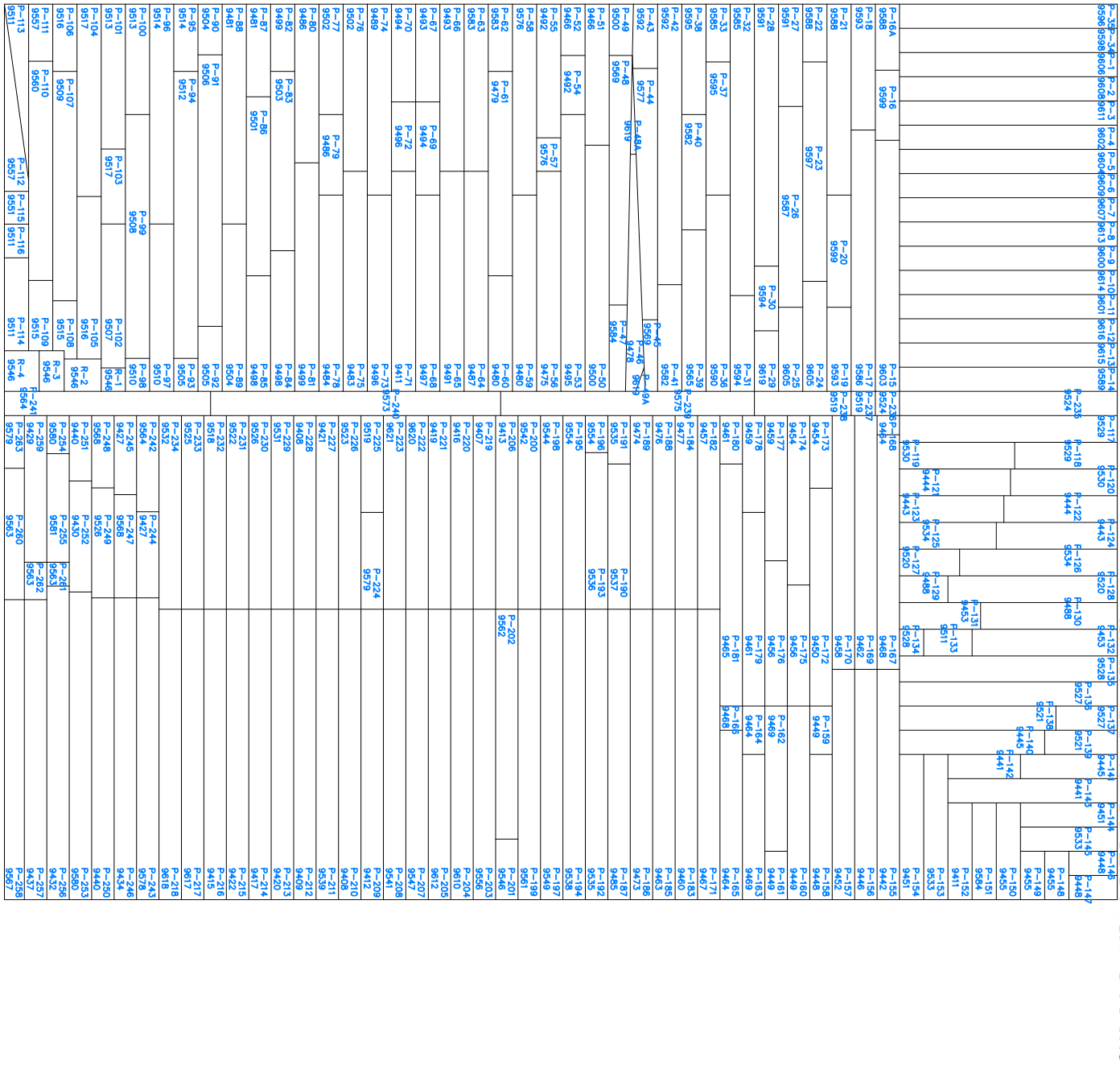
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ISSUING OFFICE: RIO RANCHO PROJECT NO: 0560.18

**FIELD DENSITY TEST**

# FIGURE 4




N
W E
S

LINER SEAMS
SUMP
RUB SHEET
VENT
REPAIR
DESTRUCT
PANEL #
ROLL #
EXTRUSION

MUSTANG extreme environmental services

# GCL LINER LAYOUT

5049 EDWARDS RANCH RD STE 200
FORT WORTH TX 76109

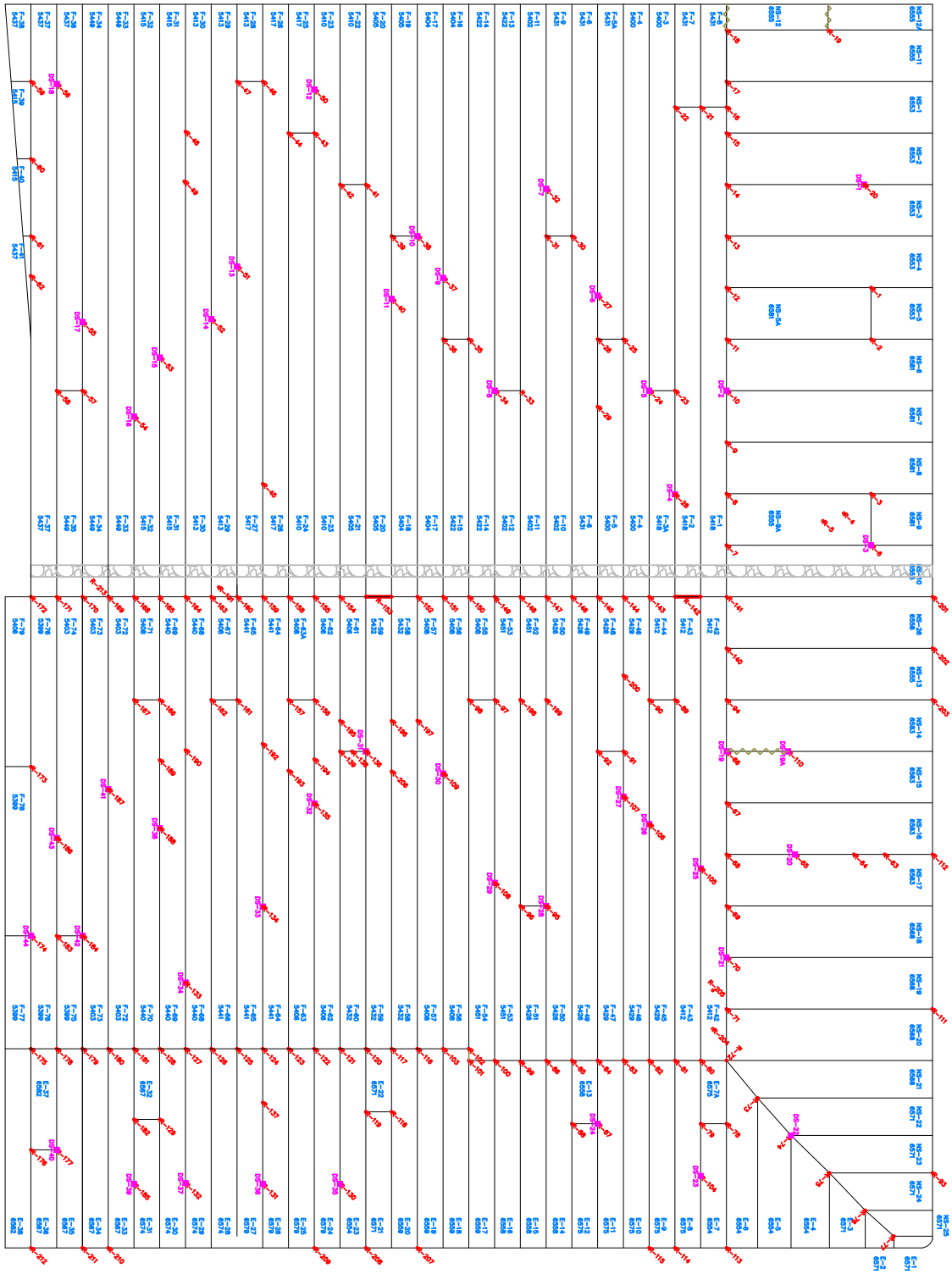
PHONE: 817-441-1235
WWW.MUSTANGEXTREME.COM

CUSTOMER: OWL
LANDFILL
GCL

REVISION: 0
DATE: DEC 2019
NOT TO SCALE
DRAWN BY: TR

SHEET NO.
1 OF 1

**FIGURE 5**



LINER SEAMS
VENT
R-108 REPAIR
P-97 5305 PANEL #
ROLL #
SUMP
RUB SHEET
DS-18 DESTRUCT
EXTRUSION

# SECONDARY LINER LAYOUT

MUSTANG extreme environmental services

5049 EDWARDS RANCH RD STE 200
FORT WORTH TX 76109

PHONE: 817-441-1235
WWW.MUSTANGEXTREME.COM

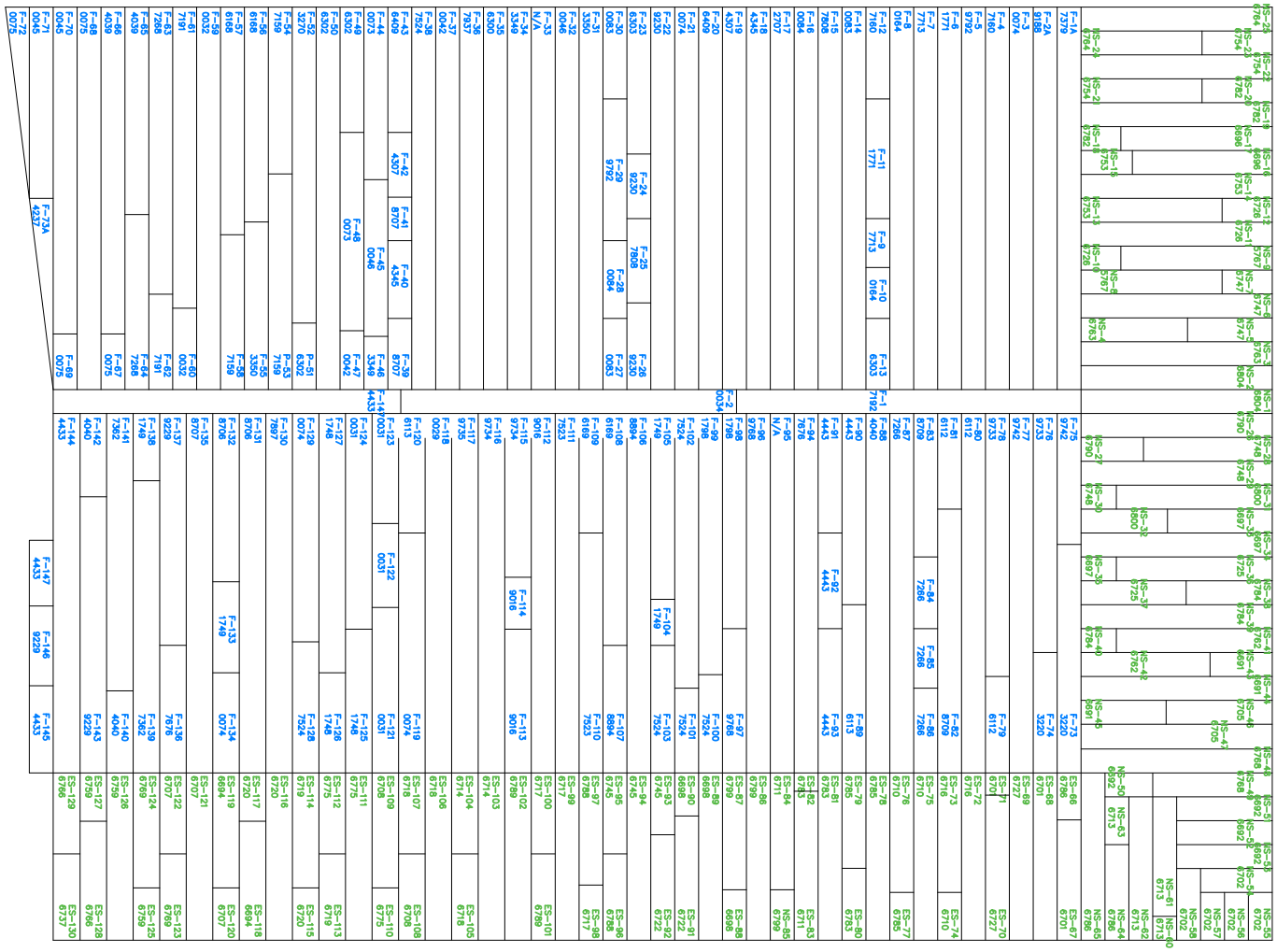
CUSTOMER: OWL
LANDFILL
60 MIL BLACK SMOOTH/TEX HDPE

REVISION: 0
DATE: DEC 2019
NOT TO SCALE
DRAWN BY: TR

SHEET NO. 1 OF 2

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**FIGURE 6**




LINER SEAMS

F-97 9768 GEONET PANEL # ROLL #

ES-102 6789 GEOCOMPOSITE PANEL # ROLL #

MUSTANG extreme environmental services

# LEAK DETECTION LAYER

5049 EDWARDS RANCH RD STE 200
FORT WORTH TX 76109

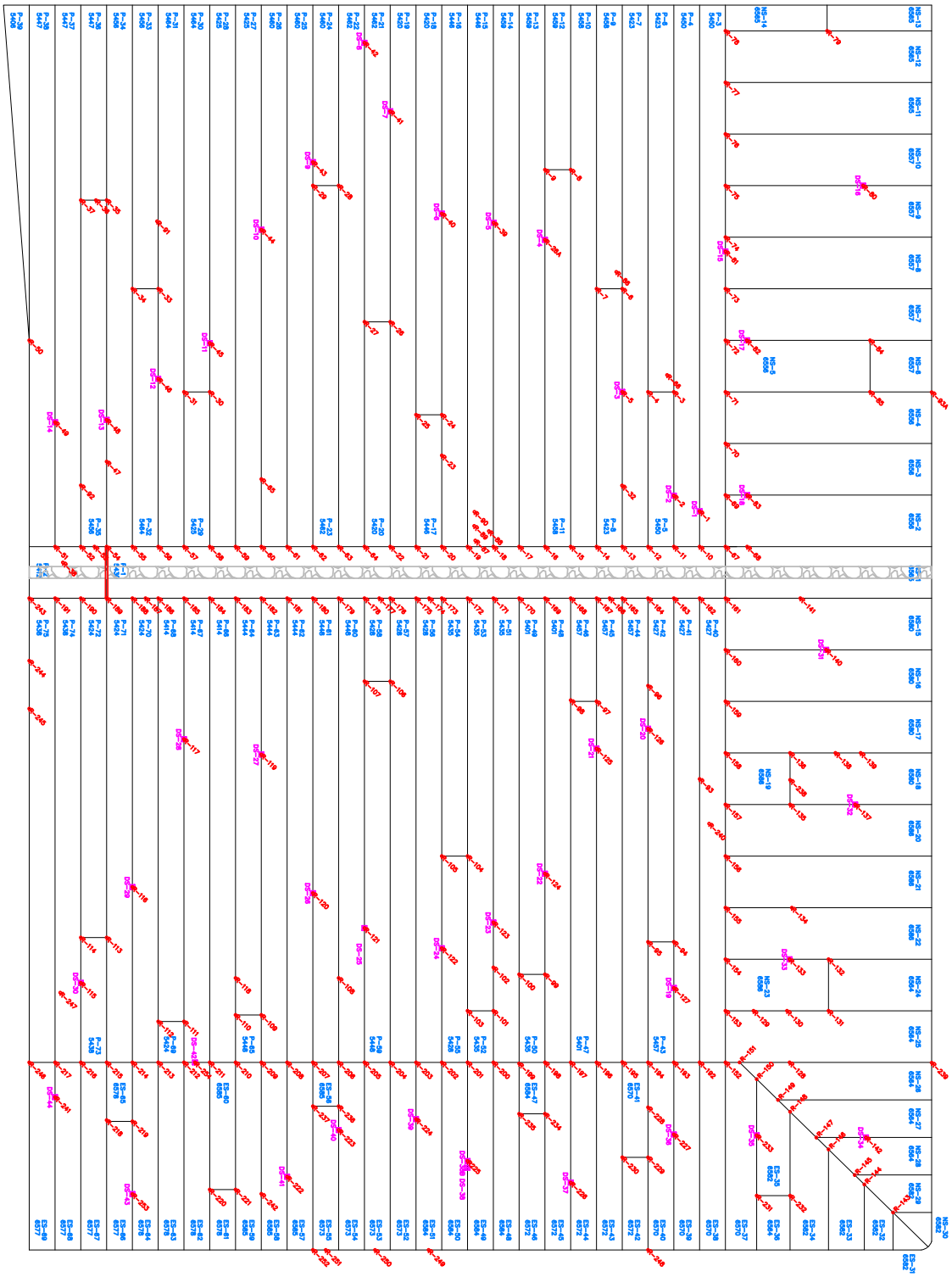
PHONE: 817-441-1235
WWW.MUSTANGEXTREME.COM

CUSTOMER: OWL LANDFILL
GEONET (FLOOR)
GEOCOMPOSITE (SLOPES)

REVISION: 0
DATE: DEC 2019
NOT TO SCALE
DRAWN BY: TR

SHEET NO. 1 OF 1

**FIGURE 7**



LINER SEAMS
SUMP
RUB SHEET
VENT
R-108 REPAIR
DS-18 DESTRUCT
P-97 5305 PANEL #
ROLL #
EXTRUSION

SHEET NO. 2 OF 2

MUSTANG extreme environmental services

# PRIMARY LINER LAYOUT

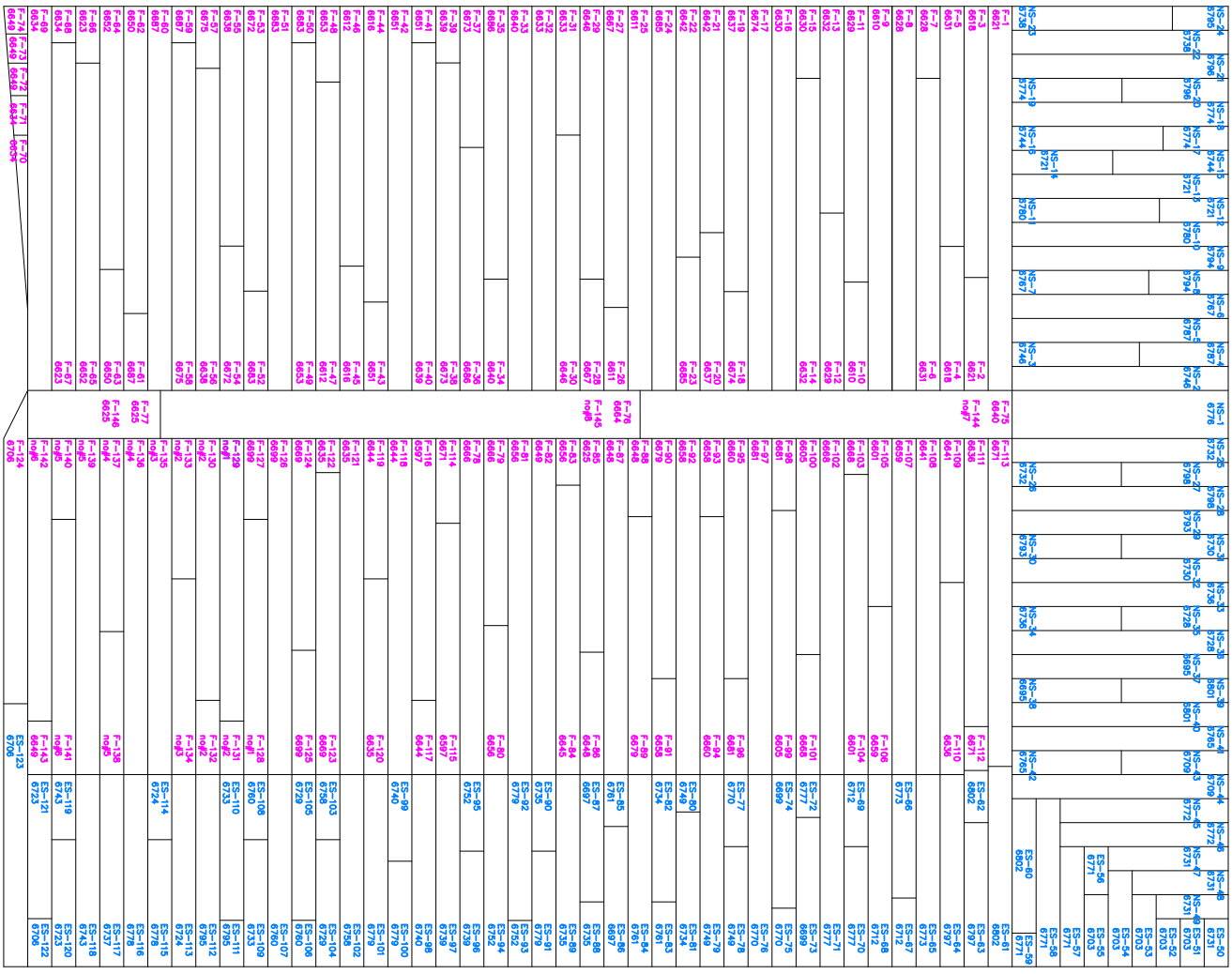
5049 EDWARDS RANCH RD STE 200
FORT WORTH TX 76109
PHONE: 817-441-1235
WWW.MUSTANGEXTREME.COM

CUSTOMER: OWL LANDFILL
60 MIL BLACK SMOOTH/TEX HDPE

REVISION: 0
DATE: DEC 2019
NOT TO SCALE
DRAWN BY: TR

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**FIGURE 8**



LINER SEAMS

SLOPE PANEL # ES-60 NS-42
ROLL # 6802 6765

FLOOR PANEL # F-97
ROLL # 6681

# TOP GEOCOMPOSITE LAYER

MUSTANG extreme environmental services

5049 EDWARDS RANCH RD STE 200
FORT WORTH TX 76109

PHONE: 817-441-1235
WWW.MUSTANGEXTREME.COM

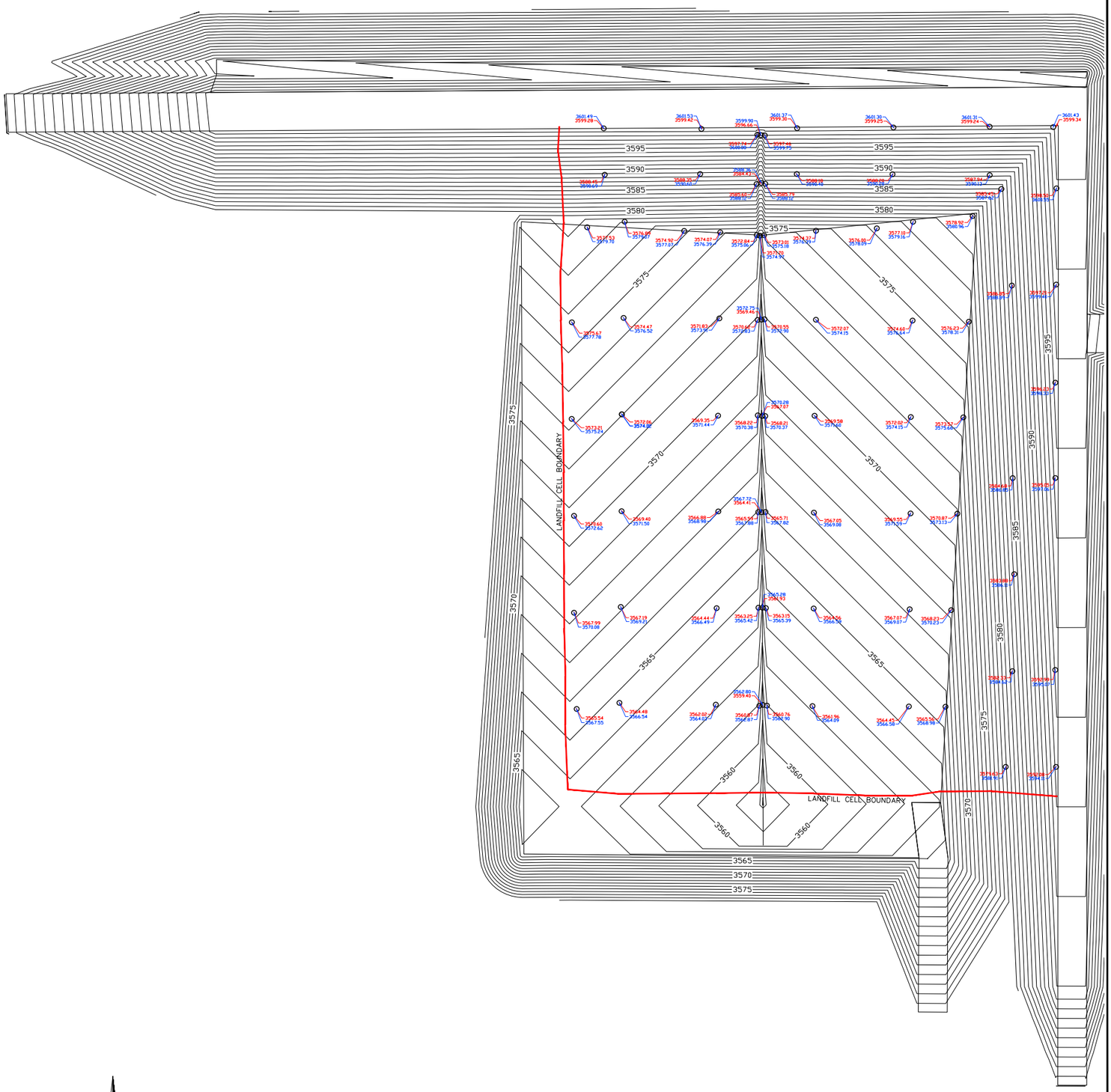
CUSTOMER: OWL LANDFILL
SST 8OZ (FLOOR)
DST 6OZ (SLOPE)

REVISION: 0
DATE: JAN 2019
NOT TO SCALE
DRAWN BY: TR

SHEET NO. 1 OF 1

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**FIGURE 9**




50 25 0 50 100

SCALE: 1" = 50'

GARRETT J SMELKER
NEW MEXICO
25036
02/04/2020
PROFESSIONAL SURVEYOR

I HEREBY CERTIFY THAT ON 11-25-19, 12-04-19 AND 01-31-20, A SUBGRADE AS-BUILT SURVEY WAS PERFORMED ON THE OWL LANDFILL IN SECTION 23 OF TOWNSHIP 24 SOUTH, RANGE 33 EAST OF THE NEW MEXICO PRINCIPAL MERIDIAN, LEA COUNTY, NEW MEXICO UNDER MY DIRECT SUPERVISION. I FURTHER CERTIFY THAT ALL OBSERVED LINER SUBGRADE AS-BUILT ELEVATIONS ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

FIGURE 10

## LEGEND

3560 = DESIGN CONTOUR MAJOR
= FEATURE LINE
3565.00 = AS-BUILT SUBGRADE
3562.00 = PSL LAYER

SUMMARY

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |

PIPE SPECIFICATIONS AND TESTING REQUIREMENTS

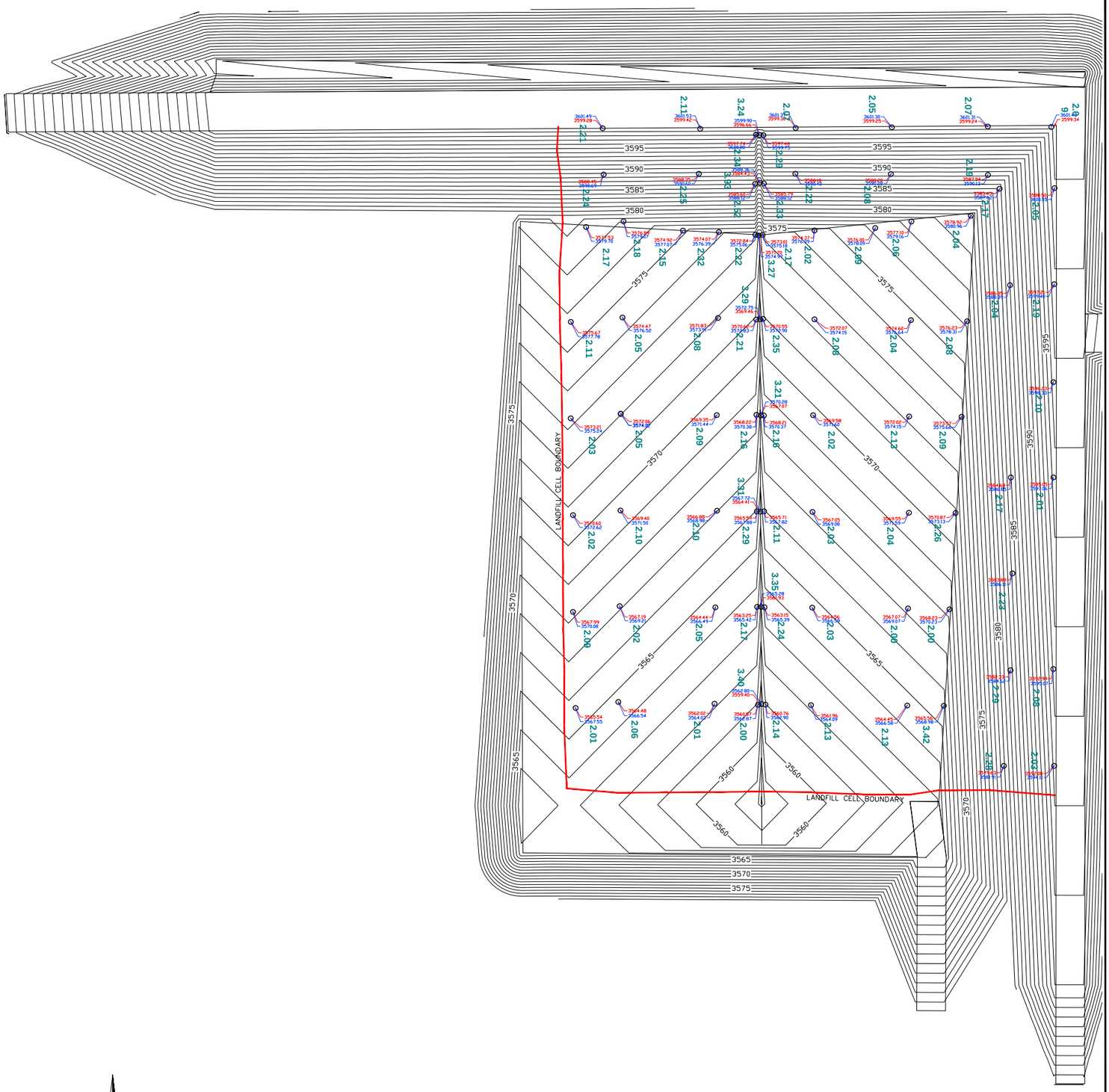
| O.D. | I.D. | WT. | GRADE | CLASS | MOAP | %SMY | D.P. | TEST PRESSURE | DURATION | X-RAY |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

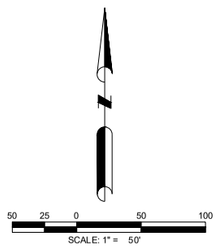
TRANSGLOBAL SERVICES LLC
TBPLS FIRM# 10193760
1100 Macon St.
Fort Worth, Texas 76102
(817) 529-1180 ~ Fax (817) 529-1181

# HIGH ROLLER EPIC

## 1910047 OWL LANDFILL
## PSL LAYER EXHIBIT

| | | |
|---|---|---|
| Drawn by: RG | Checked by: SB | Approved by: GS |
| Project No: 1910047 | AFE: ---- | SRID: ---- |
| Date: 02/03/20 | SHEET 1 OF 1 | Rev: 0 |
| Scale: 1" = N.T.S. | | |




I HEREBY CERTIFY THAT ON 11-25-19, 12-04-19 AND 01-31-20, A SUBGRADE AS-BUILT SURVEY WAS PERFORMED ON THE OWL LANDFILL IN SECTION 23 OF TOWNSHIP 24 SOUTH, RANGE 33 EAST OF THE NEW MEXICO PRINCIPAL MERIDIAN, LEA COUNTY, NEW MEXICO UNDER MY DIRECT SUPERVISION. I FURTHER CERTIFY THAT ALL OBSERVED LINER SUBGRADE AS-BUILT ELEVATIONS ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

FIGURE 11

## LEGEND

3560 — = DESIGN CONTOUR MAJOR
= FEATURE LINE
3565.00 = AS-BUILT SUBGRADE
3562.00 = PSL LAYER

THICKNESS IN FEET X.XX

SUMMARY

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |

PIPE SPECIFICATIONS AND TESTING REQUIREMENTS

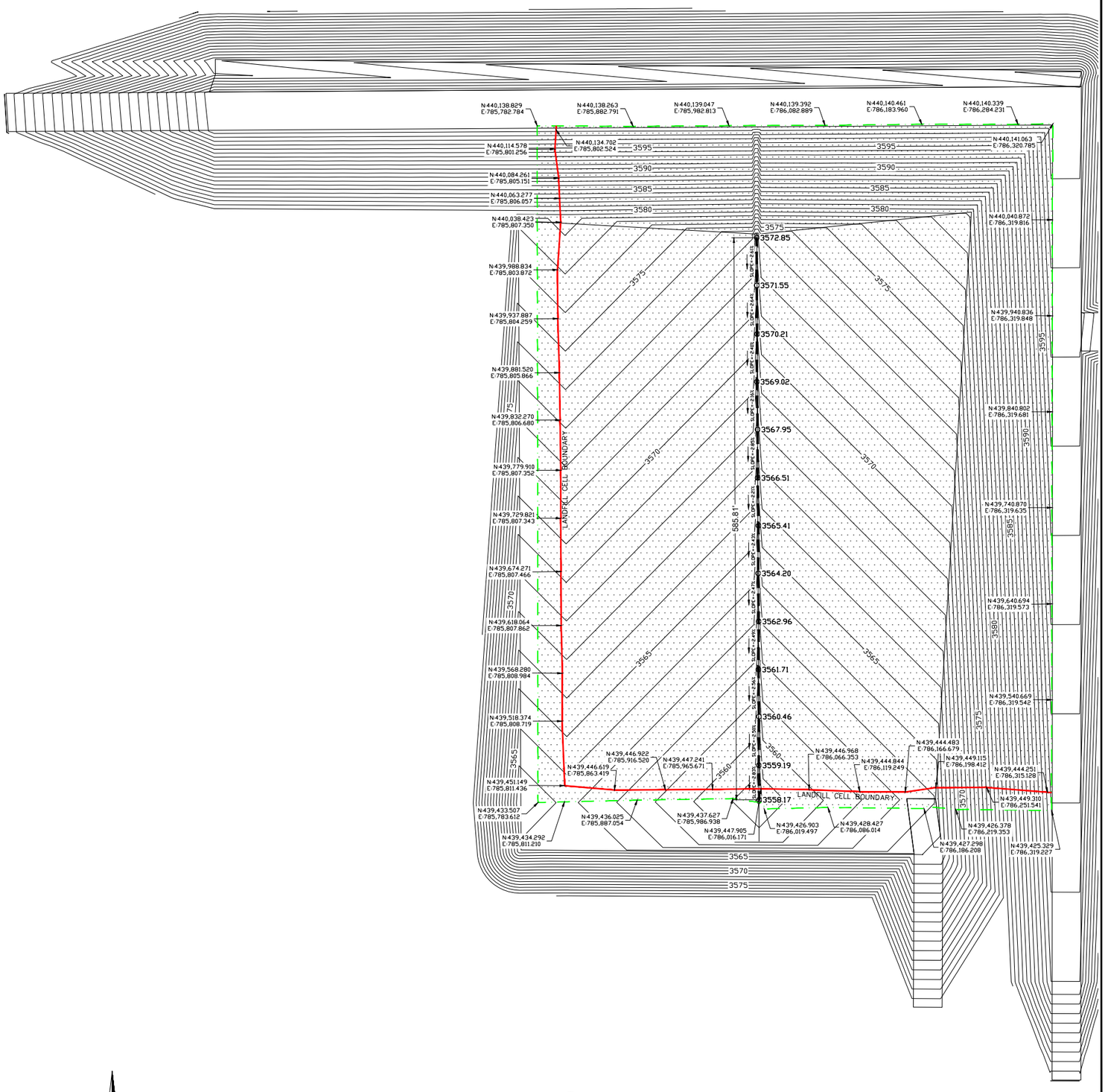
| O.D. | I.D. | WT. | GRADE | CLASS | MOAP | %SMYS | D.P. | TEST PRESSURE | DURATION | X-RAY |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

TRANSGLOBAL SERVICES LLC
TBPLS FIRM# 10193760
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Fort Worth, Texas 76102
(817) 529-1180 ~ Fax (817) 529-1181

# HIGH ROLLER EPIC

## 1910047 OWL LANDFILL PSL LAYER EXHIBIT

| | | | |
|---|---|---|---|
| Drawn by: RG | Checked by: SB | Approved by: GS | |
| Project No: 1910047 | AFE: ---- | SRID: ---- | |
| Date: 02/03/20 | SHEET 1 OF 1 | Rev: 0 | |
| Scale: 1" = N.T.S. | | | |




GARRETT J SIMELMER
NEW MEXICO
25036
PROFESSIONAL SURVEYOR
02/03/2020

I HEREBY CERTIFY THAT ON 11-25-19, 12-04-19 AND 01-27-20, A SUBGRADE AS-BUILT SURVEY WAS PERFORMED ON THE OWL LANDFILL IN SECTION 23 OF TOWNSHIP 24 SOUTH, RANGE 33 EAST OF THE NEW MEXICO PRINCIPAL MERIDIAN, LEA COUNTY, NEW MEXICO UNDER MY DIRECT SUPERVISION. I FURTHER CERTIFY THAT ALL OBSERVED LINER SUBGRADE AS-BUILT ELEVATIONS ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

FIGURE 12

**LEGEND**

- 3560 — = DESIGN CONTOUR MAJOR
- = DESIGN CONTOUR MINOR
- = ASBUILT LCRS PIPE
- ~~3565.00~~ 3565.000 = DOUBLE SIDED GEOMEMBRANE

SUMMARY

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |

PIPE SPECIFICATIONS AND TESTING REQUIREMENTS

| O.D. | I.D. | WT. | GRADE | CLASS | MOP | %SMYS | D.F. | TEST PRESSURE | DURATION | X-RAY |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |


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Fort Worth, Texas 76102
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# HIGH ROLLER EPC

## 1910047 OWL LANDFILL
## LINER-LEACHATE PIPE ASBUILT EXHIBIT

| | | | |
|---|---|---|---|
| Drawn by: RG | Checked by: GS | Approved by: GS | |
| Project No: 1910047 | AFE: ---- | SRID: ---- | |
| Date: 02/03/20 | SHEET 1 OF 1 | Rev: | 0 |
| Scale: 1" = 50' | | | |

# FIELD LOG AND PHOTOGRAPHS

## Daily Summary Reports

PARKHILLSMITH&COOPER
PSC

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Thursday 04/18/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Luke Molina | - | - | High Roller |
| 2 | Zack Romos | - | - | OWL |
| 2 | Trey | - | - | T-5 Construction |
| 3 | KB | - | - | T-5 Construction |
| 4 | Jeff | - | - | T-5 Construction |
| 4 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Get a general feel for the job and its proposed progress. We will work internally prior to contacting any offsite personnel and follow the chain of command with onsite personnel. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Clearing and grubbing of the future Landfill Cell 1 |

PARKHILLSMITH&COOPER
PSC

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Tuesday 04/23/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Luke Molina | - | - | High Roller |
| 2 | Ravi Vemulapalli | - | - | High Roller |
| 3 | DeLinda Casse | - | - | High Roller |
| 4 | Zack Ramos | - | - | OWL |
| 5 | Trey | - | - | T-5 Construction |
| 6 | KB | - | - | T-5 Construction |
| 7 | Jeff | - | - | T-5 Construction |
| 6 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | First of every other Tuesday meeting. Items discussed were to not deviate from the job specifications, still waiting on proctors of excavated soils for density testing. Base layer of caliche will be placed in cleared areas for future construction of the Landfill berms. |
| 2 | No | | Need to verify elevations and for landfill culvert pipe for east entrance road. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Clearing and grubbing of the future Landfill Cell 1. Afternoon T-5 went to excavation with excavators to break through the hard calich |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Wednesday 04/24/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.52 in | 0.52 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Luke Molina | - | - | High Roller |
| 2 | DeLinda Casse | - | - | High Roller |
| 3 | Zack Ramos | - | - | OWL |
| 4 | KB | - | - | T-5 Construction |
| 5 | Jeff | - | - | T-5 Construction |
| 6 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Spoke with Luke and DeLinda on DOT right-of-way, contacting of DOT prior to work and the confirmation that the culvert pipe is 24”. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Working on base grade for Section 1 of the north berm. Rolling and watering to begin Thursday with compaction testing anticipated for AM. |

PARKHILLSMITH&COOPER
PSC

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Thursday 04/25/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.52 in | 0.52 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Luke Molina | - | - | High Roller |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Spoke with Luke about timing of density tests. Areas were ready approximately 16:00, and will be tested early AM Friday 4-26-19. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. |
|---|

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Friday 04/26/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.52 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | DeLinda Casse | - | - | High Roller |
| 2 | Zack Ramos | - | - | OWL |
| 3 | Jeff Musick | - | - | T-5 Construction |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Spoke with DeLinda and Jeff on timing of additional compaction, density, tests. No additional tests will be available until next week. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Gordon/PSC performed 3 density tests in section 1 of the north berm. All tests passed >90% of their respective reference standard proctor. |

PARKHILLSMITH&COOPER
PSC

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Monday 04/29/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night<br>- | clear-day<br>- | clear-day<br>- | clear-day<br>- | clear-day<br>- | clear-night<br>- |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | DeLinda Casse | - | - | High Roller |
| 2 | Zack Ramos | - | - | OWL |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Charles Fiedler | - | - | Gordon/PSC |
| 5 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC discussed surveying in fence line to ensure adequate room for ponds. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Gordon/PSC performed 5 density tests in section 2 of the north berm. All tests passed >90% of their respective reference standard proctor. |

PARKHILLSMITH&COOPER
PSC

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Tuesday 04/30/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | DeLinda Casse | - | - | High Roller |
| 2 | Zack Ramos | - | - | OWL |
| 3 | KB | - | - | T-5 Construction |
| 4 | Jeff Musick | - | - | T-5 Construction |
| 5 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC discussed moisture content and smooth drum rolling of areas to e density tested due to the heavy caliche content (rocks) in the fill material. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Gordon/PSC performed 5 density tests in sections 1 & 2 of the north berm. All but two tests passed >90% of their respective reference standard proctor. Two of the tests that failed will be retested 5-1-19. |

PARKHILLSMITH&COOPER
PSC

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Wednesday 05/01/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night<br>- | clear-day<br>- | clear-day<br>- | clear-day<br>- | clear-day<br>- | clear-night<br>- |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | - | - |
| 2 | No | Clear | Mild | 75°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | DeLinda Casse | - | - | High Roller |
| 2 | Zack Ramos | - | - | OWL |
| 3 | KB | - | - | T-5 Construction |
| 4 | Jeff Musick | - | - | T-5 Construction |
| 5 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC discussed moisture content and smooth drum rolling of areas to e density tested due to the heavy caliche content (rocks) in the fill material. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | Gordon/PSC performed 14 density tests in sections 3 & 4 of the east berm along with two re-tests of N4-2 and N5-2. All passed >90% of their respective reference standard proctor. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Tuesday 05/14/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night<br>- | clear-day<br>- | clear-day<br>- | clear-day<br>- | clear-day<br>- | clear-night<br>- |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | Windy | Dusty |
| 2 | No | Clear | Mild | 75°F | None | Windy | Dusty |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Charles Fiedler | - | - | Gordon/PSC |
| 5 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC discussed schedule and overall progress of the job with Zack Ramos of OWL. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Due to excessive winds, Gordon/PSC will perform density tests 5-22-19. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Tuesday 05/21/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 65°F | 75°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 65°F | None | Windy | - |
| 2 | No | Clear | Mild | 75°F | None | Windy | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Charles Fiedler | - | - | Gordon/PSC |
| 5 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC discussed schedule and overall progress of the job with Zack Ramos of OWL. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Due to excessive winds, Gordon/PSC will perform density tests 5-22-19. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Wednesay 05/22/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 50°F | 89°F | 70°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 50°F | None | Windy | Dusty |
| 2 | No | Clear | Hot | 89°F | None | Windy | Dusty |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |
| 5 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return Thursday 05-23-19 for additional density testing. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 4 density tests along the north berm. All tests passed with >90% of RSP. |

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Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Thursday 05/23/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 69°F | 93°F | 81°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 69°F | None | Windy | Dusty |
| 2 | No | Clear | Hot | 93°F | None | Windy | Dusty |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return Thursday 05-30-19 for additional density testing. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 9 density tests along the north berm. All tests passed with >90% of RSP. |

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Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Thursday 05/30/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 62°F | 75°F | 68.5°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| overcast-night | overcast-day | overcast-day | overcast-day | overcast-day | overcast-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 62°F | None | Windy | - |
| 2 | No | Clear | Mild | 75°F | None | Windy | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return Friday 05-31-19 for additional density testing along the north berm. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 10 density tests along the east berm. All tests passed with >90% of RSP. |

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Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Friday 05/31/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 59°F | 80°F | 69.5°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| overcast-night | overcast-day | overcast-day | overcast-day | overcast-day | overcast-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 59°F | None | - | - |
| 2 | No | Clear | Mild | 80°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return Monday 06/03/19 for additional density testing along the north berm. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 9 density tests along the northt berm. All tests passed with >90% of RSP. |

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Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Monday 06/03/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 59°F | 87°F | 73°F | 0.00 in | 0.00 in | 0.28 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 59°F | None | Windy | - |
| 2 | No | Clear | Mild | 87°F | None | Windy | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 10 density tests along the east berm. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Tuesday 06/04/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 62°F | 75°F | 73°F | 0.00 in | 0.43 in | 0.43 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| overcast-night | overcast-day | overcast-day | overcast-day | overcast-day | overcast-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | overcast | Mild | 62°F | None | - | - |
| 2 | No | overcast | Mild | 75°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Luke Molina | - | - | High Roller |
| 2 | Zack Ramos | - | - | OWL |
| 3 | KB | - | - | T-5 Construction |
| 4 | Jeff Musick | - | - | T-5 Construction |
| 5 | Braden Belliveau | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 4 density tests along the east berm. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Wednesday 06/05/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 59°F | 84°F | 71.5°F | 0.00 in | 0.25 in | 0.68 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 59°F | None | - | - |
| 2 | No | clear | Mild | 84°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return the week of 06/10/19 for additional density testing of completed lifts. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 16 density tests along the north and east berms. All tests passed with >90% of RSP. |

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Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Wednesday 06/05/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 59°F | 84°F | 71.5°F | 0.00 in | 0.25 in | 0.68 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 59°F | None | - | - |
| 2 | No | clear | Mild | 84°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | KB | - | - | T-5 Construction |
| 3 | Jeff Musick | - | - | T-5 Construction |
| 4 | Braden Belliveau | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return the week of 06/10/19 for additional density testing of completed lifts. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating material from the landfill and placing in the north and east berms. Gordon/PSC performed 16 density tests along the north and east berms. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Tuesday 09/10/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 75°F | 84°F | 79.5°F | 0.00 in | 0.95 in | 0.95 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 75°F | None | - | - |
| 2 | No | clear | Mild | 84°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | BC | - | - | T-5 Construction |
| 3 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return 09/12/19 for additional density testing of completed lifts for the processing pad. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 was excavating top soil from the future processing pad and mixing pad areas. Caliche mix material was placed as the first lift of four lifts to bring the processing pad up to design base grades. Gordon/PSC performed 6 density tests atop the processing pad and 1 test along the east landfill berm. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Tuesday 09/12/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 75°F | 84°F | 79.5°F | 0.00 in | 0.00 in | 0.95 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| overcast-night | overcast-day | overcast-day | overcast-day | overcast-day | overcast-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 75°F | None | - | - |
| 2 | No | clear | Mild | 84°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | Kerry | - | - | T-5 Construction |
| 3 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return 09/17/19 for additional density testing of completed lifts for the processing pad. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 continued placement of caliche material atop the processing pad, and silty sandy soils around it. Gordon/PSC performed 18 density tests along the north and east landfill screening berms. All tests passed with >90% of RSP. |

PARKHILLSMITH&COOPER
PSC

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Tuesday 09/17/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 79°F | 92°F | 85.5°F | 0.00 in | 0.00 in | 0.95 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| partly cloudy-night | partly cloudy-day | partly cloudy-day | partly cloudy-day | partly cloudy-day | partly cloudy-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 79°F | None | - | - |
| 2 | No | clear | Mild | 92°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Kerry | - | - | T-5 Construction |
| 2 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return 09/18/19 for additional density testing of completed lifts for the processing pad. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 continued placement of caliche material atop the processing pad, and silty sandy soils around it. Caliche mix material was placed as the second of four lifts to bring the processing pad up to design base grades. Gordon/PSC performed 6 density tests atop the processing pad. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Wednesday 09/18/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 81°F | 92°F | 86.5°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

## DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 81°F | None | - | - |
| 2 | No | clear | Mild | 92°F | None | - | - |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Kerry | - | - | T-5 Construction |
| 2 | Don Gray | - | - | Gordon/PSC |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return 09/19/19 for additional density testing of completed lifts for the processing pad. |

Notes Log's Attahments:

## DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 continued placement of caliche material atop the processing pad, and silty sandy soils around it. Caliche mix material was placed as the third of four lifts to bring the processing pad up to design base grades. Gordon/PSC performed 6 density tests atop the processing pad. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Thursday 09/19/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 72°F | 92°F | 82°F | 0.00 in | 0.00 in | 0.00 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Mild | 72°F | None | - | - |
| 2 | No | clear | Mild | 92°F | None | - | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Luke Molina | - | - | High Roller |
| 2 | Zack Ramos | - | - | OWL |
| 3 | Tim Shreve | - | - | OWL |
| 4 | Nick Hines | - | - | OWL |
| 5 | Kerry | - | - | T-5 Construction |
| 6 | Carl King | - | - | Gordon/PSC |
| 7 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return 09/23/19 for additional density testing of completed lifts for the processing pad. The bi-weekly construction meeting, meeting number 2, was conducted later in the day. Several items were discussed. Please see meeting minutes for details. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 continued placement of caliche material atop the processing pad, and silty sandy soils around it. Caliche mix material was placed as the forth of four lifts bringing the processing pad up to design base grades. Gordon/PSC performed 6 density tests atop the processing pad. All tests passed with >90% of RSP. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

## Daily Log: Thursday 09/26/2019

### WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days | 3 Days | Low | Avg | High | Dew | Low | High | Avg |
| 82°F | 93°F | 87.5°F | 0.00 in | 0.10 in | 0.10 in | - | - | - | - | - | - | - |

### DAILY SNAPSHOT

| 6:00 AM | 9:00 AM | 12:00 PM | 3:00 PM | 6:00 PM | 9:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| - | - | - | - | - | - |

### OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Avg | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | clear | Warm | 82°F | None | - | - |
| 2 | No | clear | Hot | 93°F | None | - | - |

### VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zack Ramos | - | - | OWL |
| 2 | Kevin Rankin | - | - | Jerry's Concrete |
| 3 | Kerry | - | - | T-5 Construction |
| 4 | BC Taylor | - | - | T-5 Construction |
| 5 | Don Gray | - | - | Gordon/PSC |

### NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Gordon/PSC will return 10/2/19 for additional density testing as directed by the contractor. Gordon/PSC also spoke with Kevin Rankin about delivery of rebar, scheduled for 9-25-19, potential to pour one footing prior to next week, and the large pours to begin as early as Monday 9-30-19. Carl King has been notified of this potential schedule. Will assess when rebar arrives onsite. |

Notes Log's Attahments:

### DAILY CONSTRUCTION REPORT

| No. | |
|---|---|
| 1 | T-5 continued placement of caliche material atop the north and east landfill berms. Gordon/PSC performed 4 density tests atop section 1 of the north berm. All tests passed with >90% of RSP. Concrete crew was working on tying rebar and excavating footers for the processing pad. |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 10/2/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Wed Nov 13, 2019 at 06:37pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 70°F | 88°F | 78°F | 0.13 in. | 0.30 in. | 0.40 in. | 42% | 65% | 87% | 65°F | 7.3 mph | 11 mph | 16 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | partly-cloudy-day | partly-cloudy-day | partly-cloudy-day | partly-cloudy-day | partly-cloudy-night |
| 71°F | 77°F | 85°F | 88°F | 84°F | 76°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Gordon/PSC performed 15 density tests along the north and east berms adjacent to the Landfill. All tests passed with >=90% of the RSP. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued to excavate soils out of the Landfill and place along the north and east berms adjacent to the Landfill. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Thursday 10/3/2019

**Daily Log Completed**
**The Daily Log was completed by Carl King on Sat Oct 5, 2019 at 11:29 am MDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 65°F | 87°F | 75°F | 0.00 in. | 0.13 in. | 0.30 in. | 32% | 63% | 87% | 60°F | 10.7 mph | 21 mph | 29 mph |

## DAILY SNAPSHOT

| 06:00 AM | 09:00 AM | 12:00 PM | 03:00 PM | 06:00 PM | 09:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | partly-cloudy-day | partly-cloudy-day | clear-day | cloudy |
| 70°F | 74°F | 82°F | 88°F | 85°F | 66°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Cloudy | Mild | 61-78 | | Light Wind | Wet/Muddy |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | | 12:00 PM | 05:00 PM | Rebar inspection Ravi |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Initial reinforcement inspection with Ravi Vemulapalli, HR. Made recommendations. Reschedule inspection for Friday, 10/04/19. Site Progress Meeting. |

**Notes Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico 88252

# Daily Log: Friday 10/4/2019

**Daily Log Completed**
**The Daily Log was completed by Carl King on Sat Oct 5, 2019 at 11:34 am MDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 58°F | 87°F | 72°F | 0.00 in. | 0.00 in. | 0.13 in. | 31% | 61% | 96% | 56°F | 9.0 mph | 15 mph | 21 mph |

## DAILY SNAPSHOT

| 06:00 AM | 09:00 AM | 12:00 PM | 03:00 PM | 06:00 PM | 09:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | partly-cloudy-day | partly-cloudy-day | clear-night |
| 60°F | 69°F | 81°F | 86°F | 84°F | 76°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 81 | | Light Wind | Dry |
| | **Comments:** | Wind increased during the day. At the time of concrete placement, winds were 10-15mph. | | | | | |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Reinforcement for liquids processing facility, south trench, foundation/slab inspection at 9:30. No observed deficiencies. 27CY's concrete placed at 2:00. No issues. Contractor did not use a cure. CRK to question HR's on practice. Wood, PLC provided on-site testing and cast cylinders. Cylinders placed in a cooler and at the southeast corner of pad. |
| 2 | No | | Landfill east berm was processed and densities taken. Contractor reconstructed a test area by ripping and recompacting. Test area passed compaction and contractor started to reprocess the east berm lift. Wood PLC will provide an additional Proctor to verify material consistency.<br>Wood PLC also retrieved six 5-gallon pails of existing soils, base material and chad (2 pails each) for NMDOT testing. |

**Notes Log's Attachments:**

## QUANTITY LOG

| No. | Cost Code | Location | Units | Quantity |
|---|---|---|---|---|
| 1 | | | CY | 27.0 |
| | **Comments:** | Liquids Processing; south trench; foundation/slab | | |

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Lea County, New Mexico 88252

# Daily Log: Saturday 10/5/2019

**Daily Log Completed**
**The Daily Log was completed by Carl King on Sun Oct 6, 2019 at 10:16 am MDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 64°F | 91°F | 76°F | 0.00 in. | 0.00 in. | 0.00 in. | 22% | 48% | 70% | 53°F | 6.4 mph | 10 mph | 10 mph |

## DAILY SNAPSHOT

| 06:00 AM | 09:00 AM | 12:00 PM | 03:00 PM | 06:00 PM | 09:00 PM |
|---|---|---|---|---|---|
| clear-night | clear-day | partly-cloudy-day | clear-day | clear-day | clear-night |
| 65°F | 73°F | 87°F | 92°F | 87°F | 72°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 81 | | Calm | |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Continue to prep east lift. Reworked west end of north berm. |
| 2 | Yes | | Unable to meet density requirements. Will let dry overnight and retest Sunday. Called Wood PLC to see if new Proctor is complete. |

**Notes Log's Attachments:**

PARKHILLSMITH&COOPER

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Lea County, New Mexico 88252

# Daily Log: Monday 10/7/2019

**Daily Log Completed**
**The Daily Log was completed by Carl King on Mon Oct 7, 2019 at 06:40 pm MDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 54°F | 74°F | 63°F | 0.00 in. | 0.00 in. | 0.00 in. | 21% | 37% | 54% | 35°F | 9.5 mph | 20 mph | 20 mph |

## DAILY SNAPSHOT

| 06:00 AM | 09:00 AM | 12:00 PM | 03:00 PM | 06:00 PM | 09:00 PM |
|---|---|---|---|---|---|
| **cloudy** 57°F | **cloudy** 57°F | **clear-day** 69°F | **clear-day** 75°F | **clear-day** 71°F | **clear-night** 60°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | | Added water to north berm. Continue to add soils in section 2 of north Berm (NE). Running two sets of excavator pans with two Deere tractors. D8 with single chisel running east/west. D6 running north/south. Second D6 shaping north berm east and west.<br><br>Observed reinforcement placement for south footing of liquids processing facility. Answered questions regarding standees between lower and upper bar placements.<br><br>Contractor (Contractor's Inc.) began excavation for culvert pipe at entry.<br><br>Received new Proctor for caliche collected Friday from the east berm of the landfill. |

**Notes Log's Attachments:**

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# Daily Log: Tuesday 10/8/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Thu Oct 10, 2019 at 08:18amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 51°F | 86°F | 69°F | 0.00 in. | 0.00 in. | 0.00 in. | 28% | 44% | 79% | 45°F | 9.7 mph | 14 mph | 14 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | partly-cloudy-day | clear-day | clear-day | partly-cloudy-day | clear-night |
| 57°F | 65°F | 77°F | 86°F | 84°F | 75°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | | | Light Wind | |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Zach Ramos (Oilfield Water Logistics (OWL)) | 10:50AM | 10:50AM | |
| 2 | Luke Molina (High Roller EPC) | 02:30PM | 10:50AM | |
| 3 | BC Taylor (T-5 Construction) | 10:50AM | 10:50AM | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Inspected and took photos of tied rebar for future concrete pours. No obvious issues. Will reinspect prior to approval to pour. | | | | | | | | | |
| 2 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Met with contractor, inspected and density tested trench bed for installation of RCP. All test passed >95% RSP. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Material has become almost complete rock. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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Lea County, New Mexico88252

# Daily Log: Wednesday 10/9/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Thu Oct 10, 2019 at 08:37amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 62°F | 90°F | 74°F | 0.02 in. | 0.02 in. | 0.02 in. | 24% | 53% | 91% | 54°F | 10.9 mph | 21 mph | 25 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **partly-cloudy-night** 64°F | **clear-day** 70°F | **clear-day** 86°F | **clear-day** 89°F | **partly-cloudy-day** 84°F | **partly-cloudy-night** 73°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Cloudy | Mild | | | High Wind | |
| | **Comments:** | Gusty winds | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Worked with CI to decipher the NMDOT rules on compaction testing around installed pipe, RCP. PSC to return 10-10-19 to perform required density testing. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Spoke with Kevin Ranking about the use of pins holding up rebar in the stair step areas. Email sent to Roland Holder, Carl King, and Charles Fiedler. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Spoke with BC about scheduling from compaction testing. He explained the material has become almost all rock, and hoped the north berm would be ready the next morning for testing. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 10/10/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Thu Oct 10, 2019 at 01:45pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 59°F | 89°F | 75°F | 0.00 in. | 0.02 in. | 0.02 in. | 12% | 35% | 80% | 41°F | 10.0 mph | 18 mph | 22 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| 61°F | 74°F | 86°F | 90°F | 85°F | 73°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Mild | | | High Wind | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 6 density tests for the RCP pipe backfill. All tests passed 95% or greater of the RSP. No additional CQA will be required until Monday 10-14-19. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 working on building of berms. PSC performed 9 density tests along the north berm. All tests passed at 90% or greater of the RSP. Crew will be leaving for the weekend at 15:00 Central time. No additional testing will be required until Monday 10-4-19. | | | | | | | | | |
| 3 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Concrete crew working on tying rebar. Anticipate next pour to be Thursday of next week. There is an open question on the use of "pins" to hold up rebar structure in the stair step areas. Carl Kind and Charles Fiedler to speak with High Roller. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 10/14/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Mon Oct 14, 2019 at 02:57pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 60°F | 83°F | 70°F | 0.03 in. | 0.03 in. | 0.03 in. | 40% | 56% | 78% | 53°F | 8.4 mph | 15 mph | 15 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | partly-cloudy-day | partly-cloudy-day | partly-cloudy-day | partly-cloudy-night |
| 62°F | 66°F | 75°F | 82°F | 79°F | 70°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Spoke with Kevin Rankin regarding the rebar "pins" that are holding up the stair step rebar sets. Any rebar touching or driven into the ground would not be acceptable. He acknowledged and mentioned he would speak with Ravi. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 10 density tests along the east berm. All passed with >90% of the RSP. At this point the material has become a very rocky material, but compacts and holds well. | | | | | | | | | |
| 3 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC spoke with Hector of CI regarding the need for road base density testing and the driveway slab thickness of 8" with no rebar. At this point it is anticipated additional density testing will be required tomorrow afternoon. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 10/15/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Fri Nov 15, 2019 at 10:57amMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 59°F | 83°F | 71°F | 0.00 in. | 0.03 in. | 0.03 in. | 20% | 52% | 96% | 49°F | 7.7 mph | 16 mph | 16 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | partly-cloudy-day | partly-cloudy-day | clear-day | partly-cloudy-day | clear-night |
| 59°F | 73°F | 80°F | 83°F | 80°F | 66°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Cloudy | Mild | 74.1 | None | Light Wind | Dry |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Roland Holder (Parkhill, Smith & Cooper, Inc. (Midland)) | 12:00PM | 02:15PM | Roland inspected the rebar placement on the processing pad and determined it was acceptable thus far. |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Discussed the road basegrade and concrete thickness with Hector. Decided to wait for subgrade completion until resolution of the thickness issue. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Continued tying uprights for the processing pad. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Continued construction of the north and east landfill berms. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 10/16/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Wed Oct 16, 2019 at 05:19pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 44°F | 72°F | 59°F | 0.00 in. | 0.00 in. | 0.03 in. | 17% | 34% | 63% | 29°F | 7.7 mph | 15 mph | 17 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| 46°F | 55°F | 67°F | 73°F | 71°F | 56°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Mild | 56 | None | Calm | Dry |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Charles Fiedler (Parkhill, Smith & Cooper, Inc. (Rio Rancho)) | 10:30AM | 02:50PM | |
| 2 | Tim Shreve (Oilfield Water Logistics (OWL)) | 08:30AM | 03:50PM | |
| 3 | Ravi Vemulapalli (High Roller EPC) | 09:30AM | 03:50AM | |
| 4 | Luke Molina (High Roller EPC) | 01:35PM | 04:35PM | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Completed grading of basegrade for skirt. All densities passed with 95% of maximum compaction | | | | | | | | | |
| 2 | Oilfield Water Logistics (OWL) | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Held bi-weekly meeting. Resolved disagreement on concrete thickness and rebar placement in skirt. | | | | | | | | | |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 10/17/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Fri Oct 18, 2019 at 10:05amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 42°F | 80°F | 62°F | 0.00 in. | 0.00 in. | 0.00 in. | 20% | 39% | 66% | 35°F | 5.9 mph | 12 mph | 12 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| 43°F | 57°F | 75°F | 81°F | 79°F | 70°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Clear | Mild | 57 | None | Calm | Dry |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC spoke with Kevin Rankin of HR about replacing chairs with concrete bricks for the rebar. Waiting for an RFI before going forward with the brick order. The concrete pour is projected for Tuesday 10/22/19. | | | | | | | | | |
| 2 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC spoke with Hector about density testing the compacted flexbase of the skirt on Monday 10/21/19. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 19 density tests along the east and north berm. All passed with >90% of the RSP. The material is well compacted with fines visible, and only intermittent rocky stretches. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 10/21/2019

**Daily Log Completed**
**The Daily Log was completed by Andy Yuhas on Mon Oct 21, 2019 at 08:51pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 38°F | 74°F | 58°F | 0.00 in. | 0.00 in. | 0.00 in. | 7% | 15% | 33% | 9°F | 7.2 mph | 14 mph | 14 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| 39°F | 57°F | 69°F | 73°F | 71°F | 54°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Roland Holder (Parkhill, Smith & Cooper, Inc. (Midland)) | 10:00AM | 10:45AM | Roland visited to inspect rebar installation - approved |
| 2 | Andy Yuhas (Parkhill, Smith & Cooper, Inc. (Rio Rancho)) | 07:00AM | 05:00PM | Site CQA for the day |
| 3 | Luke Molina (High Roller EPC) | 01:00PM | 03:00PM | Times approximate |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI completed skirt subgrade, both required densities passed at >95% standard proctor. CI also continued building accel/decel lane subgrade of native soils. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 completed lift 13 of the north berm, all 9 densities passed at >90% Proctor. Soil placement on the east berm lift 11, will test densities on 10/22 if time allows. | | | | | | | | | |
| 3 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Rebar and processing pad construction continued, removed several ground-contacting pins (rebar) as requested by Roland Holder (PSC) in preparation for the pour.general job management, communications with Kevin to prepare for next day's concrete pour. | | | | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Andy Yuhas on site all day, density testing on berm and skirt subgrade. accompanied PSC midland on rebar inspection, general site QC | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

## NOTES LOG

| No. | Issue? | Location | Comments |
|---|---|---|---|
| 1 | No | Jal, NM | Noon: Site-wide meeting on rattlesnake awareness and response procedures. crews had discovered several snakes over the last few days and Travis (site manager) felt everyone needed to be on the same page in the event a bite occurred. Sign-in sheet present and signed by all present. |
| 2 | No | Jal, NM | CI is flagging traffic at the entryway in order to allow accel/decel lane construction. Hefty backups on the highway but no accidents observed. |
| 3 | No | Jal, NM | PSC - Andy Yuhas conducted 9 density measurements on the North berm lift 13, and two density measurements on the skirt subgrade. All passing > 90% Proctor. |

**Notes Log's Attachments:**

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Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 10/22/2019

**Daily Log Completed**
**The Daily Log was completed by Andy Yuhas on Wed Oct 23, 2019 at 10:27amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 36°F | 75°F | 57°F | 0.00 in. | 0.00 in. | 0.00 in. | 9% | 24% | 46% | 17°F | 7.2 mph | 10 mph | 10 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 39°F | **clear-day** 54°F | **clear-day** 70°F | **clear-day** 76°F | **clear-day** 72°F | **clear-night** 60°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Kevin Rankin and Travis Clark in charge. HR conducted concrete pour for process pad wall footings, 161 total yards per batch tickets/delivery sheets. details in notes section | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** BC - Foreman. T-5 continued final rolling and compaction work on lift 11 of the east berm. completed work by 1600, densities collected and all passed. North bern material placement continued all day on lift 14 on the North. BC of T-5 indicated that they have approximately 9.5 feet of berm left to construct. | | | | | | | | | |
| 3 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Hector - Foreman. CI completed compaction of the native subgrade under the Deceleration lane by 1500, densities were collected and all passed >95% RSP. Rebar and form placement for entrance skirt are in progress for a 10/24 pour. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Andy Yuhas. PSC was on site for CQA, concrete pour observation and oversight. Collected densities on the east berm and deceleration lane. all passing within their respective RSP percentages. Worked with Wood (Chris Warwin) to track slump and air tests for concrete delivered. No issues noted, batch tickets are attached in the notes section. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

## EQUIPMENT LOG

| No. | Equipment Name | Cost Code | Hrs Operating | Hrs Idle | Inspected? | Inspection Time | Location |
|---|---|---|---|---|---|---|---|
| 11 | T-5 140M2 Blade | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |
| 12 | T-5 CAT Water Wagon | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |
| 13 | T-5 CP56B Sheepsfoot roller | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |
| 14 | T-5 CS56 Smooth Drum Roller | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |
| 15 | T-5 D8T Dozer | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |
| 16 | T-5 Peterbuilt Water Truck | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |
| 17 | T5 346E Excavator | | | | No | 09:40AM | Jal, NM |
| | **Notes:** | | | | | | |

## DELIVERY LOG

| No. | Time | Delivery From | Tracking Number | Contents |
|---|---|---|---|---|
| 1 | 08:15AM | lea county concrete | | 17 loads of concrete for the process pad footing, 161 total cubic yards |
| | **Comments:** | yardage is per the load tickets, actual volume may have be lower | | |

## CALL LOG

| No. | From | To | Start Time | End Time |
|---|---|---|---|---|
| 1 | Andy Yuhas (Parkhill, Smith & Cooper, Inc. (Rio Rancho)) | hugo w/ wood | 02:30PM | 02:40PM |
| | **Description:** | called to verify availability of a tester for concrete on a planned Thursday 10/24 pour. verified and scheduled. | | |

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 10/23/2019

**Daily Log Completed**
**The Daily Log was completed by Andy Yuhas on Wed Oct 23, 2019 at 09:03pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 40°F | 82°F | 62°F | 0.00 in. | 0.00 in. | 0.00 in. | 10% | 31% | 63% | 27°F | 5.1 mph | 9 mph | 9 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| 46°F | 57°F | 76°F | 82°F | 78°F | 62°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI and their concrete sub (SWCCI) worked to install rebar for entry apron, formed and ready for concrete thursday 10/24 | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR removed bracing from processing pad, started trenching on the east side of the pad and forming the central sump for the next pour | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued material excavation and placement on the berm. per BC, approximately 9.5 feet of elevation remain to be installed | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** performed rebar inspection, clarified a couple items regarding apron thickness, documented progress on processing pad, accel/decel lanes, and apron form-up | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER PSC

**Parkhill, Smith & Cooper, Inc.**
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 10/24/2019

**Daily Log Completed**
**The Daily Log was completed by Andy Yuhas on Fri Oct 25, 2019 at 09:23amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 34°F | 62°F | 47°F | 0.00 in. | 0.00 in. | 0.00 in. | 35% | 58% | 79% | 33°F | 17.5 mph | 26 mph | 32 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 53°F | **cloudy** 55°F | **cloudy** 48°F | **cloudy** 43°F | **cloudy** 38°F | **cloudy** 35°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Chris Warwin (Wood) | 07:00AM | 03:00PM | concrete quality testing - field tests of temperature, slump and air, also collected cylinders. |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR EPC continued forming up the center sump of the liquids processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 added more material to the berm using an excavated material from the evap pond. | | | | | | | | | |
| 3 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI and their subcontractor, SWCCI, completed the entryway apron concrete pour. went well, rebar placement was correct, no form blowouts, very windy and chilly. All batch tickets scanned and included in the notes section. CI also completed compaction of the acceleration lane subgrade and requested densities. all 10 points passed | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CQA on concrete pour, 10 densities conducted on acceleration lane subgrade. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 10/25/2019

**Daily Log Completed**
**The Daily Log was completed by Andy Yuhas on Sat Oct 26, 2019 at 08:53amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 28°F | 59°F | 44°F | 0.00 in. | 0.00 in. | 0.00 in. | 14% | 44% | 82% | 20°F | 8.2 mph | 14 mph | 17 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-day | clear-night |
| 32°F | 43°F | 53°F | 60°F | 56°F | 42°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR worked on rebar in the processing pad central sump. forgot to survey first so they will have to remove and regrade that floor. also worked on more compaction of the apron subgrade west of the processing pad wall between the pad the evap pond | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Completed placement and compaction of lift 14 on the north berm (sections 1 and 2) all 9 density points passed. densities are returning slightly higher than previous lifts overall, but this is likely due to a change in material source, which is now the evap pond excavation. | | | | | | | | | |
| 3 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI and their concrete subcontractor SWCCI completed scoring of the entryway apron and reinstalled the thermal blankets until Monday, when they will strip the apron and apply curing compound. temperatures have been low (30-40 at night and SWCCI felt that would allow a little more sweat and cure prior to sealant placement. CI completed rough placement of decel lane basecourse. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** tested densities on North berm lift 14, photodocumentation of evap pond excavation, decel lane basecouse placement, and berm lifts. HR and OWL left site early int he afternoon, T-5 and CI stayed all day. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Saturday 10/26/2019

**Daily Log Completed**
**The Daily Log was completed by Andy Yuhas on Sat Oct 26, 2019 at 08:26pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 29°F | 75°F | 52°F | 0.00 in. | 0.00 in. | 0.00 in. | 10% | 27% | 53% | 14°F | 8.7 mph | 18 mph | 18 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 30°F | **clear-day** 46°F | **clear-day** 68°F | **clear-day** 74°F | **clear-day** 70°F | **clear-night** 64°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**1 Workers | 6.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Continued work on placement and compaction of lift 12 of the east berm. Also excavation of evap pond for berm soils. | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 6.0 |
| | **Notes:** Construction observation, densities on Lift 12 of the East berm. All passed | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **6** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 10/28/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 04:34pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 34°F | 64°F | 48°F | 0.00 in. | 0.00 in. | 0.00 in. | 32% | 56% | 80% | 32°F | 11.2 mph | 18 mph | 18 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 36°F | **clear-day** 40°F | **clear-day** 49°F | **clear-day** 63°F | **clear-day** 63°F | **clear-night** 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Overcast | Cold | 46 | None | Light Wind | Dry |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI continued placing subgrade and grading the pull-off and pull-on lanes. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR finished removing the processing pad central sump. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC Observed construction. | | | | | | | | | |
| 4 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 began using topsoil from the PSL pile for berm construction because they are beginning to run low on caliche for constructing the roads. Continued excavation of the drying pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 10/29/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Wed Oct 30, 2019 at 09:05amMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 36°F | 59°F | 44°F | 0.00 in. | 0.00 in. | 0.00 in. | 53% | 78% | 96% | 37°F | 10.0 mph | 15 mph | 15 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **cloudy** 36°F | **cloudy** 40°F | **cloudy** 45°F | **clear-day** 56°F | **clear-day** 54°F | **cloudy** 43°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Overcast | Cold | 41 | None | Calm | Dry |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Tim Shreve (Oilfield Water Logistics (OWL)) | 12:15PM | 03:00PM | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI continuing the construction of the basecourse for the on-off ramp. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR continued tying rebar and excavating the trench to the west of the processing pad. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continuing construction of the landfill berm using silty sand. Excavated the access roadway for placement of the culvert. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC completed 9 densities on the 15th lift of the north berm and 10 densities on the 13th lift of the east berm. All densities passed with >90% of max dry density. | | | | | | | | | |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 10/30/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 04:36pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 27°F | 43°F | 35°F | 0.00 in. | 0.00 in. | 0.00 in. | 49% | 77% | 100% | 28°F | 12.0 mph | 17 mph | 17 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| cloudy | cloudy | cloudy | partly-cloudy-day | clear-day | clear-night |
| 34°F | 35°F | 39°F | 41°F | 40°F | 31°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Fog | Cold | 36 | Light mist. | Light Wind | Wet/Muddy |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Carl King (Parkhill, Smith & Cooper, Inc. (Rio Rancho)) | 08:00AM | 03:55PM | |
| 2 | Ravi Vemulapalli (High Roller EPC) | 09:30AM | 03:05PM | |
| 3 | Tim Shreve (Oilfield Water Logistics (OWL)) | 09:30AM | 02:05PM | |
| 4 | Nick Hines (Oilfield Water Logistics (OWL)) | 09:05AM | 02:05PM | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI continuing to grade and compact basecourse for the on/off ramp. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR continuing to place rebar uprights and excavating trench to the west of the process pad. | | | | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continuing construction of the landfill berms using PSL stockpile and coversoil gathered from southeast of landfill. Finished installation of culvert under east landfill access ramp. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC monitored construction activites. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 10/31/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Fri Nov 1, 2019 at 02:43pmMDT.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 17°F | 54°F | 34°F | 0.00 in. | 0.00 in. | 0.00 in. | 18% | 51% | 89% | 15°F | 6.8 mph | 12 mph | 12 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 19°F | **clear-day** 29°F | **clear-day** 43°F | **clear-day** 53°F | **clear-night** 50°F | **clear-night** 41°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Very Cold | 40 | None | Light Wind | Dry |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI continuing grading of basecourse for highway entry/exit lanes. PSC conducted 2 test densities; both densities passed with greater than 95% of max dry density 117pcf. Official densities of basecourse will be conducted at 100 foot intervals 11/04/19. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR continued laying rebar in east and west sump trenches for the projected pour on Tuesday and Wednesday. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continuing construction of north and east berms for the landfill. Berm N-16 was completed and 500' of E-14 was completed. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC completed 9 densities on the north landfill berm and 5 densities on the east landfill berm. All densities passed with >95% of max dry density. Berm is currently being built with the silty sand material from the PSL stockpile, and excavated topsoil from around the site. The final 4 feet will be constructed with the caliche material for weather proofing. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 11/4/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Tue Nov 12, 2019 at 12:59pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 39°F | 83°F | 60°F | 0.00 in. | 0.00 in. | 0.00 in. | 11% | 37% | 66% | 29°F | 5.6 mph | 10 mph | 24 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | partly-cloudy-day | clear-night | clear-night |
| 40°F | 56°F | 79°F | 83°F | 70°F | 59°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Mild | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 25 density tests atop the placed road base. Nine along the west deceleration lane and sixteen along the east acceleration lane. All tests passed with greater than or equal to % of modified proctor and within 2% optimum moisture. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed a rebar inspection in anticipation of concrete placement on Tuesday Nov 5. HR EPC was required to place two missing rebar components in the west trench and move "U" bars to vertical. A re-inspection is scheduled for tomorrow morning. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued soil excavation for the construction of berms along the north and east sides of the Landfill. Excavation materials were taken from the future evaporation pond located southeast of the Landfill. Will be ready for additional soil density testing on Tuesday Nov 5, 2019. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 11/5/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Tue Nov 12, 2019 at 01:02pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 40°F | 72°F | 55°F | 0.00 in. | 0.00 in. | 0.00 in. | 28% | 52% | 82% | 37°F | 7.4 mph | 14 mph | 14 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 41°F | **clear-day** 53°F | **clear-day** 63°F | **clear-day** 72°F | **clear-night** 63°F | **clear-night** 56°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR poured 164 yards of concrete for the sump footer. Wool blankets were laid out after the concrete was finished and watered. | | | | | | | | | |
| 2 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI poured and shaped 6 inches of the asphalt pulloff/pullon lanes. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued construction on the landfill berm. Approximately 400 feet of the southern end of the east berm is now to grade. The final layer of this section was constructed with the soil from the PSL stockpile, not the caliche material. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 25 densities on the first 6 inch layer of the on and off ramp asphalt. All densities passed with greater than 92% of maximum density. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
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F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 11/6/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Wed Nov 6, 2019 at 07:37pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 54°F | 72°F | 63°F | 0.21 in. | 0.21 in. | 0.21 in. | 61% | 79% | 95% | 56°F | 9.0 mph | 17 mph | 17 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 58°F | **clear-day** 68°F | **rain** 70°F | **clear-day** 70°F | **partly-cloudy-night** 62°F | **rain** 62°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI poured the second and final 6 inch layer of the asphalt on the entire exit-ramp and half of the entrance-ramp. Due to a lightning strike at the asphalt plant, CI was not able to complete the second half of the entrance-ramp asphalt. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR began placing wall forms along the completed footer of the processing pad. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued construction of the landfill berm. They were reminded by PSC that 4 feet of caliche on-top of the silty sandy material was recommended for weather proofing of the berm. Lifts N-17 and E-15 were completed. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 9 densities on the asphalt exit ramp, and 7 densities on the asphalt entrance-ramp. All densities passed with greater than 92% of maximum density. There remains 9 densities to perform on the on-ramp after the remainder of the asphalt is poured. PSC also performed 9 densities on the north berm and 5 densities on the east berm of the landfill. All densities passed with >90% of maximum density. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 11/7/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Tue Nov 12, 2019 at 01:08pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 34°F | 60°F | 43°F | 0.16 in. | 0.36 in. | 0.36 in. | 76% | 86% | 100% | 39°F | 13.1 mph | 25 mph | 41 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **cloudy** 41°F | **rain** 36°F | **rain** 37°F | **cloudy** 40°F | **cloudy** 42°F | **cloudy** 41°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** CI did not place the top layer of asphalt due to a supply issue. Worked the drainage along the shoulder and left the site early. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR EPC took a weather day due to temperature and high winds. No work was performed. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of material for landfill berms located north and east of the Landfill. BC would not be ready for density testing until sometime Friday Nov 8, 2019 | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC spoke with Zack Ramos of OWL on scheduling and site progress | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 11/8/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 04:49pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 54°F | 44°F | 0.00 in. | 0.16 in. | 0.37 in. | 66% | 82% | 95% | 39°F | 3.9 mph | 8 mph | 8 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| cloudy<br>40°F | cloudy<br>43°F | cloudy<br>48°F | cloudy<br>54°F | partly-cloudy-night<br>50°F | partly-cloudy-night<br>45°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | Overcast | Cold | | | Calm | Dry |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | CI Constructors | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Performed 9 densities along western deceleration lane and 16 densities along the east acceleration lane. All tests passed with > 95% of the RSP. All inspections look good for placement of asphalt on 11-5-19. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 was onsite with a limited crew. No densities will be required until approximately Wednesday of this week. | | | | | | | | | |
| 3 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** High Roller continued placing wall forms along the completed footer. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
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P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 11/11/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Tue Nov 12, 2019 at 01:32pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 30°F | 57°F | 41°F | 0.01 in. | 0.01 in. | 0.01 in. | 52% | 72% | 93% | 33°F | 15.2 mph | 28 mph | 34 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **rain** 58°F | **wind** 40°F | **wind** 34°F | **cloudy** 33°F | **cloudy** 32°F | **cloudy** 33°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Overcast | Cold | | | High Wind | |
| | **Comments:** | Heavy winds | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR EPC employed a weather day as the severe winds impaired work. No work was done. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5's excavator was down with a broken bucket. No soil could be placed on the berms, so they cleaned up the sideslopes and used that material to build up. They would not be ready for densities until Tuesday, Nov 12, 2019. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Spoke with Zack Ramos regarding schedule and weather delays. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
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P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 11/12/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Wed Nov 13, 2019 at 06:29pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 23°F | 36°F | 31°F | 0.00 in. | 0.01 in. | 0.01 in. | 32% | 47% | 65% | 12°F | 6.1 mph | 13 mph | 13 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 25°F | **clear-day** 28°F | **clear-day** 34°F | **clear-day** 36°F | **clear-night** 34°F | **clear-night** 32°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Cold | | | Light Wind | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Gordon/PSC performed 13 density tests along the north and east berms adjacent to the Landfill. All tests passed with > or = 90% of the RSP. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR EPC working on forms for wall containing the processing pad. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavating borrow source material for the construction of the north and east berms adjacent to the Landfill. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 11/13/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Wed Nov 13, 2019 at 06:26pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 31°F | 56°F | 41°F | 0.00 in. | 0.00 in. | 0.01 in. | 46% | 61% | 85% | 29°F | 8.7 mph | 14 mph | 14 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 33°F | 42°F | 51°F | 55°F | 46°F | 40°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Mild | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR EPC working on forms for wall containing the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavating borrow source material for the construction of the north and east berms adjacent to the Landfill. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Don Gray and Carl King of Gordon/PSC met with OWL management and contractors for the bi-monthly meeting. All notes are recorded in the meeting minutes | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER
PSC

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 11/14/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Thu Nov 21, 2019 at 10:39amMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 32°F | 56°F | 43°F | 0.00 in. | 0.00 in. | 0.00 in. | 36% | 61% | 91% | 30°F | 9.7 mph | 17 mph | 20 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| **clear-night** | **clear-day** | **clear-day** | **clear-day** | **clear-night** | **clear-night** |
| 33°F | 47°F | 54°F | 56°F | 48°F | 41°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Cloudy | Mild | | | High Wind | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR continued to install forms for the wall around the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 continued excavation of materials from the evaporation pond and placement on the landfill berm. Left site at approximately 14:00 MST to return on Monday 11-18-19. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 12 density tests along the north and east berms adjacent to the landfill. All tests passed with 90% or greater of the RSP. Only one lift required to bring the berms up to design grades. PSC will return approximately mid week for additional density testing and inspection of the Landfill construction. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 11/20/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Thu Nov 21, 2019 at 07:16pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 54°F | 74°F | 61°F | 0.02 in. | 0.02 in. | 0.02 in. | 38% | 76% | 100% | 52°F | 8.1 mph | 14 mph | 14 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | partly-cloudy-day | clear-day | partly-cloudy-night | cloudy |
| 55°F | 60°F | 66°F | 73°F | 63°F | 57°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** High Roller was installing forming for the main wall around the Processing Pad. At the time we spoke, there was not a definite date for the next pour. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 had completed the Landfill berms both north and east and was ready for density testing. The subgrade of the cell was near grade with additional topsoil brought in to ensure the surface was smooth and acceptable for liner installation. They will not finish subgrade until closer to 11-26 or 11-27-19, reducing the potential for weather damage to the newly constructed cell. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 11/21/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Thu Nov 21, 2019 at 07:47pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 45°F | 74°F | 60°F | 0.00 in. | 0.02 in. | 0.02 in. | 27% | 75% | 100% | 50°F | 7.4 mph | 17 mph | 20 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **fog** 60°F | **cloudy** 61°F | **clear-day** 72°F | **clear-day** 75°F | **fog** 58°F | **cloudy** 47°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Mild | | | Calm | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Spoke with Travis and Kevin of High Roller on progress of concrete forming. Concrete crew was installing lower rebar within the wall that allowed a threaded rebar to be attached after the pour. At this time the limited crew made it hard to give a date as to when the wall would be poured. It is anticipated that the pour will not happen until after the Thanksgiving holiday. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 continued excavating caliche material from the future drying pad and place it on the entrance roads. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC conversed with Travis of HR and Zack of OWL on progress and the upcoming holiday | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme received approximately 3 trucks of liner material in the early morning. PSC will inventory on 11-22-19 | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 11/22/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Mon Nov 25, 2019 at 08:24amMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 39°F | 59°F | 48°F | 0.01 in. | 0.01 in. | 0.03 in. | 46% | 73% | 98% | 39°F | 6.0 mph | 12 mph | 12 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **cloudy** 42°F | **partly-cloudy-day** 48°F | **clear-day** 53°F | **clear-day** 60°F | **clear-night** 55°F | **clear-night** 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR continued working on the wall forms for the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 continued excavating caliche material from the future drying pad and place it on the entrance roads. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC inventoried all geosynthetics. Will return on 11-23-19 to inventory additional materials delivered that day. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme received several truckloads of single and double sided composite and net materials. Unloaded and sorted by material type. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Saturday 11/23/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Mon Nov 25, 2019 at 08:28amMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 35°F | 68°F | 50°F | 0.00 in. | 0.01 in. | 0.01 in. | 22% | 54% | 91% | 31°F | 5.8 mph | 16 mph | 22 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 39°F | **clear-day** 54°F | **clear-day** 65°F | **clear-day** 68°F | **clear-night** 58°F | **clear-night** 45°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | Clear | Mild | | | Light Wind | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR continued working on the wall forms for the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 was placing PSL, blow sand, material atop the cell and sideslopes. Using a D6 to push the material with a smooth drum roller running behind it. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC inventoried all geosynthetics. GCL was delivered late. PSC ensured it was placed upon an elevated pad and that all wrapping was in good shape. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme received several truckloads of materials, including GCL. Unloaded and sorted by material type. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 11/25/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Mon Dec 2, 2019 at 01:36pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 40°F | 69°F | 56°F | 0.00 in. | 0.00 in. | 0.00 in. | 22% | 42% | 64% | 32°F | 8.8 mph | 17 mph | 17 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 48°F | **clear-day** 53°F | **clear-day** 70°F | **clear-day** 69°F | **clear-night** 63°F | **clear-night** 62°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** High Roller continued installing forms for the exterior wall around the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 began working the cell floor with approved fill material, placing and compacting. | | | | | | | | | |
| 3 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Unloaded approximately three trucks of geosynthetic materials. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC reviewed all work on the Landfill subgrade and inventoried all synthetics delivered to the site. Also spoke with Zach and Travis on survey for the Landfill. Later in the day had a conference call with all the members of the normal bi-monthly meetings. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 11/27/2019

**Daily Log Completed**
**The Daily Log was completed by Don Gray on Mon Dec 2, 2019 at 01:40pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 28°F | 48°F | 39°F | 0.23 in. | 0.23 in. | 0.23 in. | 27% | 55% | 85% | 23°F | 11.3 mph | 15 mph | 26 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 31°F | **clear-day** 40°F | **partly-cloudy-day** 48°F | **cloudy** 42°F | **rain** 39°F | **cloudy** 39°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 finalized construction of the Landfill. | | | | | | | | | |
| 2 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR had surveyors out for as-built verification. They were instructed to provide a set of points on a 100*100' grid, and shots down the center of the leachate trench. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed 40 density tests within the confines of the Landfill. All tests passed with >/= 90% of the RSP. Surface looks good and visually ready for lining. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 12/2/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:22pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 28°F | 62°F | 44°F | 0.00 in. | 0.00 in. | 0.01 in. | 24% | 50% | 80% | 25°F | 5.4 mph | 10 mph | 10 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 29°F | 47°F | 58°F | 62°F | 51°F | 45°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete now on the job as a sub-contractor. They are working to finalize forming of the containment walls for the processing pad. Waiting until tomorrow afternoon to schedule concrete and CQA activities for the pour. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 worked the floor and sideslopes of the Landfill to correct wind damage over the holiday weekend. | | | | | | | | | |
| 3 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang began excavating the anchor trench along tops of the north and east berms. Assuming the subgrade is acceptable, lining activities will begin 12-3-19. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC reviewed with Mustang on where the anchor trench is to be placed, and where lining activities are to commence. Also spoke with Jerry's concrete on when the next pour will be, containment wall for the processing pad. Zach of OWL to try and get a firm date by tomorrow. PSC also inventoried any materials remaining and input data into the system. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 12/3/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:24pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 36°F | 72°F | 52°F | 0.00 in. | 0.00 in. | 0.00 in. | 17% | 48% | 73% | 30°F | 7.8 mph | 14 mph | 26 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 38°F | **clear-day** 51°F | **clear-day** 70°F | **clear-day** 72°F | **clear-night** 60°F | **clear-night** 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR onsite, did not interact with PSC. Jerry's Concrete, a subcontractor to HR continued forming and rebar work for processing pad. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Glenn of Mustang was onsite in the AM. Crew began deployment of geosynthetics on the north west slope. They stopped work around mid-day awaiting approval of the subrade work done by the earthwork contractor. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 was working outside the area of the Landfill. They will review the subgrade surface tomorrow with HR and PSC. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC realized there was a problem with the subgrade survey on the Landfill. These discrepancies were noted and liner deployment was delayed until an acceptable survey has been submitted. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

TO: Mustang Extreme
FROM: Gordon/PSC
PROJECT NAME: OWL
PROJECT NO.: 01056019
DATE: 12/03/2019

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade — Up to GCL Panel 16
2. Geosynthetic Clay Liner (GCL) — Panels (1-16)
3. HDPE Geomembrane (FML) — Panels (NS1-NS10), (F1-F2)
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayalerth
(Liner Contractor Representative)
Paul Sayalerth
(Authorized Signature)
12/03/2019
(Date)

Accepted By: Don Gray
(CQA Manager)
(Authorized Signature)
12/3/19
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 12/4/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:25pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 38°F | 64°F | 50°F | 0.00 in. | 0.00 in. | 0.00 in. | 28% | 55% | 71% | 33°F | 5.5 mph | 8 mph | 12 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | partly-cloudy-day | partly-cloudy-day | partly-cloudy-day | clear-night | clear-night |
| 40°F | 48°F | 62°F | 64°F | 55°F | 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## VISITOR LOG

| No. | Visitor | Start Time | End Time | Details |
|---|---|---|---|---|
| 1 | Carl King (Parkhill, Smith & Cooper, Inc. (Rio Rancho)) | 08:00AM | 05:15PM | Inspection of rebar in the proccessing pad, supervising final grading of landfill subgrade |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR coordinated with PSC, Surveyors, & T-5 for final basegrades for the landfill. | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC assisted with the re-surveying of grades in the landfill that were out of the required +/- 0.2 foot tolerance. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation for the drying pad and regraded the landfill subgrade for the final survey. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme was onsite in the early morning to look at where the subgrade acceptance was. No liner work was performed. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
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F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 12/5/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:26pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 42°F | 74°F | 57°F | 0.01 in. | 0.01 in. | 0.01 in. | 31% | 51% | 70% | 38°F | 11.8 mph | 23 mph | 34 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| partly-cloudy-night | partly-cloudy-day | partly-cloudy-day | clear-day | clear-night | clear-night |
| 46°F | 57°F | 73°F | 72°F | 64°F | 55°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |
| 2 | No | | Mild | | | High Wind | |
| | **Comments:** | High winds in the afternoon. | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME placed GCL from panel 17 to panel 49A. ME laid 60 mil FML from panel F3A to panel F14. | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC supervised ME during liner placement activities and marked 6 locations for destructive testing of the Secondary 60 mil FML. Lining operations ceased at approximately 16:30 due to heavy winds. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of the drying pad and placement of caliche building roads. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon/PSC
**PROJECT NAME:** OWL
**PROJECT NO.:** 0105G019
**DATE:** 12/05/2019

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade — Up to GCL Panel 49A
2. Geosynthetic Clay Liner (GCL) — Panels (17-49A
3. HDPE Geomembrane (FML) — Panels (F3- F14)
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayaleth
(Liner Contractor Representative)
Paul Sayaleth
(Authorized Signature)
12/05/19
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/5/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
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P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 12/6/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 61°F | 49°F | 0.02 in. | 0.03 in. | 0.03 in. | 39% | 60% | 87% | 35°F | 5.6 mph | 12 mph | 23 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 39°F | 46°F | 57°F | 61°F | 54°F | 47°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC continued supervision of liner placement. PSC took 11 destruct tests. All tests passed the initial on-site testing conducted by Mustang Extreme. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME continued liner placement from panels 50 to135 for the GCL, and panels F15 to Ns18 for the secondary FML. This completed placement of the secondary liner on the west side o f the leachate line and began placement of material along the north slope east of the leachate line. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of the drying pad, and grading and compaction of the site roadways. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon/PSC
**PROJECT NAME:** OWL
**PROJECT NO.:** 01056019
**DATE:** 12/6/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade — Up to GCL Panel 135
2. Geosynthetic Clay Liner (GCL) — Panels (50 - 135)
3. HDPE Geomembrane (FML) — Panels (F15 - F42), (N513 - N518)
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayaleth
(Liner Contractor Representative)
Paul Sayaleth
(Authorized Signature)
12/7/19
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/6/19
(Date)

☐ Attachments

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
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P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Saturday 12/7/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Mon Jan 13, 2020 at 05:25pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 34°F | 65°F | 49°F | 0.02 in. | 0.04 in. | 0.05 in. | 30% | 57% | 80% | 33°F | 6.0 mph | 10 mph | 13 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 35°F | 45°F | 61°F | 66°F | 58°F | 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME placed secondary liner from the north slope tying it in to the east slope from panels. FML panel NS19-F50 and GCL 136-184. | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC supervised ME during liner placement activities and marked destructive tests for the secondary liner on the east side of the Secondary 60 mil FML. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of the drying pad and placement of caliche building roads. | | | | | | | | | |
| 4 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete continued placement of wall forms on the processing pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505 867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

TO: Mustang Extreme
FROM: Gordon/PSC
PROJECT NAME: OWL
PROJECT NO.: 01256019
DATE: 12/7/2019

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**

1. Subgrade — Up to GCL Panel 184
2. Geosynthetic Clay Liner (GCL) — Panels (136 - 184)
3. HDPE Geomembrane (FML) — Panels (NS19 - NS25)(ES1 - ES14)(F42 - F50)
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____

_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayavedra
(Liner Contractor Representative)

Paul Sayavedra
(Authorized Signature)

12/7/19
(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

12/7/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Sunday 12/8/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Mon Jan 13, 2020 at 05:24pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 42°F | 75°F | 58°F | 0.01 in. | 0.04 in. | 0.05 in. | 25% | 51% | 73% | 39°F | 11.0 mph | 21 mph | 32 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 45°F | **clear-day** 54°F | **partly-cloudy-day** 73°F | **partly-cloudy-day** 74°F | **partly-cloudy-night** 68°F | **partly-cloudy-night** 62°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME placed materials on east side of landfill from panels FML ES15-F57 and GCL 185-200. | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC performed CQA during liner placement activities. | | | | | | | | | |
| 3 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete continued placement of wall forms on the processing pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd, NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

TO: Mustang Extreme
FROM: Gordon/ PSC
PROJECT NAME: OWL
PROJECT NO.: 01056019
DATE: 12/8/2019

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade — Up to GCL Panel
2. Geosynthetic Clay Liner (GCL) — Panels (185 - 200)
3. HDPE Geomembrane (FML) — Panels (ES15 - ES19), (FS1 - FS7)
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Noy Xay Sam
(Liner Contractor Representative)
(Authorized Signature)
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/8/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 12/9/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Wed Jan 15, 2020 at 03:51pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 47°F | 59°F | 55°F | 0.25 in. | 0.26 in. | 0.29 in. | 60% | 76% | 100% | 47°F | 8.8 mph | 11 mph | 24 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **cloudy** 57°F | **cloudy** 59°F | **cloudy** 58°F | **rain** 54°F | **rain** 52°F | **cloudy** 50°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | Yes | Overcast | Cold | | None | Calm | Wet/Muddy |
| | **Comments:** | Heavy rain the previous night and into the early morning caused minor flooding around the end of the leachate trench, ruining approximately 30-40 feet of GCL. | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC supervised placement of geonet. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME placed geonet from panels (21-36). ME halted placement of geonet at approximately 1000. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of the drying pad, and grading and compaction of the site roadway. | | | | | | | | | |
| 4 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete continued placement of wall forms on the processing pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon / PSC
**PROJECT NAME:** OWL Landfill
**PROJECT NO.:** 560.19
**DATE:** 12/9/2019

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade _____
2. Geosynthetic Clay Liner (GCL) _____
3. HDPE Geomembrane (FML) _____
4. Detection System Geonet 27 - 26 2x Composite
5. Protective Soil Layer (PSL) _____ Panel 1-4

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____
_____
_____

Authorized By: Noy Yang Sing
(Liner Contractor Representative)

(Authorized Signature)

(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

12/9/2019
(Date)

☐ Attachments

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 12/10/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Fri Jan 17, 2020 at 04:02pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 51°F | 42°F | 0.06 in. | 0.31 in. | 0.32 in. | 40% | 61% | 79% | 29°F | 7.7 mph | 13 mph | 21 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **cloudy** 39°F | **partly-cloudy-day** 39°F | **partly-cloudy-day** 46°F | **clear-day** 52°F | **clear-night** 45°F | **clear-night** 39°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME placed primary FML from panels P3 through P14; Geonet was placed from panels (27-66); and geocomposite for the leak detection layer was placed on the west side of the north slope from panels (5-24) | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of the drying pad. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |

**Notes:** Conducted CQA for installation of leak detection layer and primary FML. Marked out DTs P1 through P4 for ME to collect and test.

Aggregate placed in the leachate trench showed several smaller particles <.5". This will be address by Mr. King to the contractor later today.

The Leachate pipe has not been approved. Gordon/PSC explained to the HDPE pipe crew how to construct a jig to drill the pipe per the drawings and specifications. Gordon/PSC will evaluate the jig and drilled pipe prior to placement activities.

Gordon also walked the center walls for the processing pad and marked small issues to be addressed prior to the concrete pour scheduled for 12-12-19. The center, east and west lower walls were not ready for inspection.

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 4 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete continued placement of wall forms on the processing pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

TO: Mustang Extreme
FROM: Gordon/PSC
PROJECT NAME: OWL
PROJECT NO.: 56019
DATE: 12/10/2019

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade _____
2. Geosynthetic Clay Liner (GCL) _____
3. HDPE Geomembrane (FML) P3 - P14
4. Detection System Geonet 27-66 2x Composite 5-24
5. Protective Soil Layer (PSL) _____

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Noy Yaysang
(Liner Contractor Representative)

(Authorized Signature)

(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

12/10/2019
(Date)

☐ Attachments

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 12/11/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Fri Jan 17, 2020 at 04:01pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 34°F | 51°F | 42°F | 0.01 in. | 0.07 in. | 0.32 in. | 66% | 81% | 94% | 37°F | 8.8 mph | 14 mph | 29 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **partly-cloudy-night** 37°F | **partly-cloudy-day** 40°F | **partly-cloudy-day** 48°F | **partly-cloudy-day** 52°F | **partly-cloudy-night** 47°F | **cloudy** 44°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | Yes | Mist | Cold | | Continued light misting throughout morning | Calm | Wet/Muddy |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME placed 2 panels of primary FML on the north slope. No additional panels were placed due to a heavy fog/mist. Mustang Extreme requested permission to deploy and seam panels at approximately 1000 hours. Gordon/PSC denied the request due to persistent heavy fog/mist. In response ME mobed off site. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued excavation of the drying pad. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Collected and shipped 15 destruct welds for testing at TRI after completion of on-site testing by ME. | | | | | | | | | |
| 4 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete continued placement of wall forms on the processing pad for the projected pour on 12/12/2019. PSC completed initial inspection of the walls. Final inspection of the walls will be completed before the concrete pour. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 12/12/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:46pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 35°F | 62°F | 47°F | 0.01 in. | 0.02 in. | 0.08 in. | 35% | 69% | 100% | 36°F | 7.0 mph | 12 mph | 23 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| partly-cloudy-night | partly-cloudy-day | clear-day | clear-day | clear-night | clear-night |
| 36°F | 42°F | 59°F | 63°F | 54°F | 47°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete complete concrete placement for the liquids processing facility interior pipe trench walls and perimeter walls; and east and west loadout bay trench walls. The 170 CY placement took place utilizing two pump trucks. No significant issues noted. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme deployed primary liner along the west side of the Landfill with the exception of the final panel along the southern edge. They also worked with Gordon/PSC to evaluate and repair the GCL that was damaged on the night of 12-9-19.<br><br>The poly crew from Mustang Extreme finished drilling pipe with approved jig by PSC, and began welding and placing pipe in areas with pre-installed aggregate. Approximately 100-125' remaining to be placed at the southern end. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC completed wall reinforcement inspections; reviewed the sequence of operations, i.e., PSL placement, stormwater berm construction and lining, and estimated timelines. All contractors and CQA seem to be on the same page. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon / PSC
**PROJECT NAME:** OWL Landfill
**PROJECT NO.:** 56019
**DATE:** 12/12/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**

1. Subgrade — None
2. Geosynthetic Clay Liner (GCL) — Repair R1-4
3. HDPE Geomembrane (FML) — NS2 - NS1~~4~~ P20 - P37
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____

_____ to _____

**REMARKS:** _____

Authorized By: Duy Xay Sang
(Liner Contractor Representative)

(Authorized Signature)

(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

12/12/2019
(Date)

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P: (505) 867-6991
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 12/13/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:48pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 42°F | 72°F | 55°F | 0.02 in. | 0.03 in. | 0.04 in. | 17% | 48% | 74% | 33°F | 10.4 mph | 16 mph | 36 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 45°F | 53°F | 70°F | 72°F | 61°F | 52°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete inspected previous day pout. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme deployed 11 secondary panels along the east slope and east floor.<br><br>The poly crew from Mustang Extreme finished welding and placing of aggregate and leachate pipe in the trench.<br>D. Gray of PSC walked with the survey crew to ensure the pipe was placed with the appropriate slope according to the permit and plan set. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC reviewed the survey in the field and approved placement. Communicated to the poly crew how to install the pipe. Due to excessive fines in the aggregate, PSC approved use if installed in the following sequence.<br>Aggregate placed to approximately 1/2 way up the side of the pipe and placement of 10oz geotextile over the top hole only extending at least 1' either side of the pipe. Additional aggregate placed up to subrage levels on either side.<br>The poly crew completed all activities up to approximately 50' from the southern boundary. Will return on Saturday 12-14-19 to complete installation. | | | | | | | | | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** MUSTANG EXTREME
**FROM:** Gordon/ PSC
**PROJECT NAME:** OWL LANDFILL
**PROJECT NO.:** 560.19
**DATE:** 12/13/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade — EAST SIDE
2. Geosynthetic Clay Liner (GCL) — 201 - 234
3. HDPE Geomembrane (FML) — ES19 - 31 F57 - F110
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: NOE XAYSANG
(Liner Contractor Representative)
(Authorized Signature)
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/13/2019
(Date)

☐ Attachments

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Rio Rancho, New Mexico87124
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F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Saturday 12/14/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:49pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 39°F | 74°F | 55°F | 0.01 in. | 0.03 in. | 0.04 in. | 17% | 48% | 85% | 33°F | 8.9 mph | 14 mph | 23 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 40°F | **clear-day** 50°F | **clear-day** 70°F | **clear-day** 74°F | **clear-night** 63°F | **clear-night** 57°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete inspected previous day pour. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang Extreme did not deploy any FML. Approximately 30' area left open on the east side of the leachate trench to accommodate leachate collection system installation was closed up. This eliminated an additional open edge that had the potential for wind damage.<br><br>As requested, Mustang folded over materials to cover the exposed aggregate in the leachate collection system to help prevent fines infiltration. Weather prediction for heavy winds on 12-15-19. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. Offsite approximately 11am. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon / PSC
**PROJECT NAME:** OWL Landfill
**PROJECT NO.:** 5C019
**DATE:** 12/14/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade — See Remarks
2. Geosynthetic Clay Liner (GCL) — 235 -241
3. HDPE Geomembrane (FML) — Already in place
4. Detection System
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** Tied up 30' open area between each trench & east side Secondary

Authorized By: Noy Xaysang
(Liner Contractor Representative)
(Authorized Signature)
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/14/2019
(Date)

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 12/16/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:51pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 34°F | 55°F | 43°F | 0.01 in. | 0.02 in. | 0.03 in. | 15% | 46% | 69% | 21°F | 9.9 mph | 14 mph | 27 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 36°F | 38°F | 50°F | 55°F | 47°F | 38°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete began removing forms. When the forms were removed, the plate and nails as part of the form saver remained attached to the concrete. This has complicated and slowed down removal of the in place forms. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Along the west side of the cell ME continued placement of the single sided composite materials along the floor. They zip tied and seamed (head tacked) along the long sides but did not along the short sides. Will be done at a future date. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 12/17/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Mon Dec 30, 2019 at 06:24pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 27°F | 47°F | 36°F | 0.01 in. | 0.02 in. | 0.03 in. | 17% | 44% | 69% | 14°F | 5.4 mph | 9 mph | 18 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 28°F | **clear-day** 34°F | **clear-day** 42°F | **clear-day** 48°F | **clear-night** 41°F | **clear-night** 34°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete continued to remove forms. When the forms were removed, the plate and nails as part of the form saver remained attached to the concrete. This has complicated and slowed down removal of the in place forms. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME installed double sided geocomposite on the north slope of the landfill from panels NS1-NS24, and geonet on the east side of the landfill cell from panels 1-72. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 12/18/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Mon Dec 30, 2019 at 06:25pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 25°F | 50°F | 35°F | 0.02 in. | 0.03 in. | 0.04 in. | 10% | 44% | 76% | 12°F | 4.8 mph | 7 mph | 13 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 25°F | 34°F | 47°F | 50°F | 41°F | 33°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete continued to remove forms. Majority of forms have been removed, with only a couple of sections remaining. Next step is to work with PSC in fill and compaction of areas requiring soils for the floor pour. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME installed double sided geocomposite on the east slope of the of the landfill from panels ES25-ES87, and geonet on the east side of the landfill cell from panels 73-144. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. Carl King reviewed concrete walls after majority of forms had been removed. Only a few spots were in need of patches. No exposed re-bar could be found within the entire pour. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 12/19/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Mon Dec 30, 2019 at 06:43pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 26°F | 52°F | 38°F | 0.01 in. | 0.03 in. | 0.04 in. | 21% | 44% | 69% | 17°F | 7.5 mph | 10 mph | 23 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | partly-cloudy-day | partly-cloudy-day | partly-cloudy-night | partly-cloudy-night |
| 26°F | 34°F | 47°F | 52°F | 47°F | 40°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete continued to remove forms. Majority of forms have been removed, with only a couple of sections remaining. Next step is to work with PSC in fill and compaction of areas requiring soils for the floor pour. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME installed the primary FML on the east side of the landfill from panels P40-P75, and single sided geocomposite from panels 88-130. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon / PSC
**PROJECT NAME:** DWL Landfill
**PROJECT NO.:** 56019
**DATE:** 12/19/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade
2. Geosynthetic Clay Liner (GCL)
3. HDPE Geomembrane (FML) P40 - P95
4. ~~Detection System~~ Geocomposite 88 - 130
5. Protective Soil Layer (PSL)

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Roy Vaughan
(Liner Contractor Representative)

(Authorized Signature)

12/19/19
(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

12/19/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 12/20/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Mon Dec 30, 2019 at 06:47pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 29°F | 58°F | 42°F | 0.01 in. | 0.02 in. | 0.04 in. | 10% | 39% | 73% | 14°F | 7.5 mph | 14 mph | 21 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 30°F | **clear-day** 41°F | **clear-day** 55°F | **clear-day** 59°F | **clear-night** 49°F | **clear-night** 40°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete worked with PSC on backfill over the last couple of days. The water truck was unavailable so no compacted fill was placed. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME installed primary FML on the east side of the landfill from panels NS15-NS30, and panels ES31-ES35. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. Diego delivered box of destructive samples to FedEx prior to returning to ABQ. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** MUSTANG EXTREME
**FROM:** GORDON/PSC
**PROJECT NAME:** OWL LANDFILL
**PROJECT NO.:** 560.19
**DATE:** 12/20/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade _____
2. Geosynthetic Clay Liner (GCL) _____
3. HDPE Geomembrane (FML) PRIMARY EAST NS 15 - NS30 & ES 31 - ES5
4. Detection System _____
5. Protective Soil Layer (PSL) _____

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: NOE XAYSANA
(Liner Contractor Representative)
(Authorized Signature)
12/20/2019
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/20/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Saturday 12/21/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 05:55pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 26°F | 62°F | 42°F | 0.01 in. | 0.02 in. | 0.03 in. | 7% | 32% | 61% | 10°F | 4.6 mph | 6 mph | 8 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 27°F | 38°F | 57°F | 62°F | 50°F | 41°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete installed flowable fill in areas previously selected for compacted backfill with soils. Both BSB and DG observed this process at various times through the day. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME deployed remaining primary liner on the east slope. Also worked on seaming primary to secondary along west and south ends. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued working the drying pad, and associated work around the site. This included working on caliche roads etc. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC observed and logged all activities regarding liner installation. Also marked remaining destructive tests to finish with liner installation. Test PDT38 failed, along with PDT38a and B. It is now required that the entire seam be capped. Will confirm this when everyone returns to work on 12-30-19 | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** MUSTANG EXTREME
**FROM:** Gordon / PSC
**PROJECT NAME:** OWL LANDFILL
**PROJECT NO.:**
**DATE:** 12/21/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade _____
2. Geosynthetic Clay Liner (GCL) _____
3. HDPE Geomembrane (FML) ES53-69
4. Detection System _____
5. Protective Soil Layer (PSL) _____

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: NOY XAYSANG
(Liner Contractor Representative)
(Authorized Signature)
12/21/19
(Date)

Accepted By: Braden Belliveau
(CQA Manager)
(Authorized Signature)
12/21/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 12/30/2019

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 06:08pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 28°F | 47°F | 36°F | 0.02 in. | 0.03 in. | 0.08 in. | 18% | 38% | 56% | 12°F | 5.2 mph | 7 mph | 16 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 30°F | **clear-day** 36°F | **clear-day** 45°F | **clear-day** 48°F | **clear-night** 43°F | **clear-night** 35°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME continued extrusion weld repairs and vacuum testing of the primary FML. The final layer of double sided geocomposite was placed on the north slope of the east side from panels NS25-NS62 | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC supervised construction of the berm and double sided geocomposite placement. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 continued excavation of the pond. Placement of PSL on the berm was begun from the north of the west side moving south. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 12/31/2019

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 27°F | 52°F | 38°F | 0.01 in. | 0.03 in. | 0.04 in. | 25% | 48% | 69% | 20°F | 5.6 mph | 9 mph | 13 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night<br>29°F | clear-day<br>36°F | clear-day<br>49°F | clear-day<br>52°F | clear-night<br>46°F | clear-night<br>39°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME completed extrusion weld repairs and vacuum testing of the primary FML. The final layer of double sided geocomposite was placed on the north slope of the east side from panels 62-97. 4'x8' panels were placed along the west and south termination of the liner up to the leachate trench. | | | | | | | | | |
| 2 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC supervised construction of the berm and double sided geocomposite placement. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T5 continued excavation of the pond. Placement of PSL on the berm was begun from the north of the west side moving south. | | | | | | | | | |
| 4 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Held meeting with T-5, ME, and PSC concerning placement of the berm, and access point for PSL placement. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon / PSC
**PROJECT NAME:** OWL
**PROJECT NO.:** 01505619
**DATE:** 12/31/19

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade _____
2. Geosynthetic Clay Liner (GCL) _____
3. HDPE Geomembrane (FML) _____
4. Detection System North Slope of the East Panels (62-67)
5. ~~Protective Soil Layer (PSL)~~ GEOCOMPOSITE Double Sided

**LOCATION:** _____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayalero
(Liner Contractor Representative)

(Authorized Signature)

(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

12/31/2019
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico87124
P: (505) 867-6991
F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 1/2/2020

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Tue Jan 28, 2020 at 06:07pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 59°F | 47°F | 0.04 in. | 0.05 in. | 0.06 in. | 22% | 49% | 74% | 27°F | 10.8 mph | 14 mph | 28 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | partly-cloudy-day | partly-cloudy-day | partly-cloudy-day | partly-cloudy-night | partly-cloudy-night |
| 38°F | 48°F | 58°F | 58°F | 53°F | 47°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME welded the rainflap along the west side of the landfill, and wrapped the double sided geocomposite with geotextile. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued delivery of PSL for the berm. T-5 removed approximately 3 feet from the west side of the west rainflap berm of the landfill as it was wider than needed. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC met with HR, ME, and T-5 and discussed the placement of the plywood for the southern berm, and the extension of the liner system by 20 to 30 feet to the south. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Friday 1/3/2020

**Daily Log Completed**
**The Daily Log was completed by Braden Belliveau on Thu Jan 23, 2020 at 12:55pmMST.**

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 55°F | 45°F | 0.15 in. | 0.19 in. | 0.20 in. | 28% | 59% | 81% | 31°F | 7.0 mph | 12 mph | 21 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **partly-cloudy-night** 42°F | **partly-cloudy-day** 45°F | **clear-day** 51°F | **clear-day** 55°F | **clear-night** 49°F | **clear-night** 41°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** HR conducted a survey of the liner extents for the landfill and a survey of the basegrades for the drying pad. Jerry's Concrete is back on site and continuing rebar placement in preparation for the pouring of the concrete pad early in the week of 01/06/20. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME continued placement of geocomposite on the east side of the landfill. The anchor trench was back filled on the north side from the leachate trench to the northeast corner of the landfill. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC monitored the survey of landfill and drying pad, and geocomposite installation by ME. | | | | | | | | | |
| 4 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continuing excavation of caliche from trench west of the landfill. The east berm for the rainflap was completed. Soil placement for the PSL continues. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon/PSC
**PROJECT NAME:** OWL
**PROJECT NO.:** 01056019
**DATE:** 01/03/2020

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade
2. Geosynthetic Clay Liner (GCL)
3. HDPE Geomembrane (FML)
4. Detection System — GeoComp. Floor Panels C P78 - P135
5. ~~Protective Soil Layer~~ (PSL) — Geocomposite Double Sided

**LOCATION:** _____ to _____

_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayalerth
(Liner Contractor Representative)

(Authorized Signature)

(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

01/03/2020
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Saturday 1/4/2020

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 31°F | 62°F | 45°F | 0.01 in. | 0.16 in. | 0.20 in. | 12% | 46% | 75% | 21°F | 6.5 mph | 10 mph | 16 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night<br>32°F | clear-day<br>40°F | clear-day<br>57°F | clear-day<br>62°F | clear-night<br>54°F | clear-night<br>46°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete continues prepartion of the north side of the floor for a concrete pour on 01/07/20. | | | | | | | | | |
| 2 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** ME finished placement of double sided geocomposite with panels 131 to 143. The rainflap was pulled back as it wasn't able to reach the V-ditch dug by T-5. After T-5 resized the berm, ME redeployed the rainflap. | | | | | | | | | |
| 3 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continues to place soil for the PSL gathered from the north side of the site. They removed more of the western berm so the rainflap could reach into the V-ditch. After ME covered the berm with the rainflap, T-5 backfilled the V-ditch. | | | | | | | | | |
| 4 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Engineer | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC supervised placement of the final layer of geocomposite on the eastern half of the landfill. The outer rainflap berm was approved for rainflap placement. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# APPROVAL/ AUTHORIZATION TO PROCEED

**TO:** Mustang Extreme
**FROM:** Gordon/PSC
**PROJECT NAME:** OWL
**PROJECT NO.:** 01056019
**DATE:** 01/04/2020

The following liner system surface is deemed acceptable on a visual inspection by Liner Contractor Representative:

**LAYER:**
1. Subgrade
2. Geosynthetic Clay Liner (GCL)
3. HDPE Geomembrane (FML)
4. Detection System — Geocomposite
5. ~~Protective Soil Layer (PSL)~~ GEOCOMPOSITE Double Sided

**LOCATION:** Panels (P131 - P143) Floor
Panels (P98 - 124) East Slope
_____ to _____
_____ to _____

**REMARKS:** _____

Authorized By: Paul Sayalath
(Liner Contractor Representative)

(Authorized Signature)

(Date)

Accepted By: Braden Belliveau
(CQA Manager)

(Authorized Signature)

01/04/2020
(Date)

☐ Attachments

Copies: ☐ Owner ☐ A/E ☐ Contractor ☐ Consultants ☐ _____ ☐ _____ ☐ File

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PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Monday 1/6/2020

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 32°F | 64°F | 46°F | 0.00 in. | 0.01 in. | 0.02 in. | 7% | 42% | 85% | 17°F | 9.0 mph | 22 mph | 34 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night<br>34°F | clear-day<br>45°F | clear-day<br>62°F | clear-day<br>63°F | clear-night<br>52°F | clear-night<br>42°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete continued make ready for Wednesday, 1-8-2020 pour. Will include approximately 1/3 of the floor within the walls of the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 started placement of the PSL from the north west side adjacent to the north slope. They were aided by Gordon/PSC on proper placement procedures, what to look out for, and objectional material removal. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Watched and coached T-5 on initial placement of PSL soils atop the lined Landfill surface. Don Gray of PSC and Travis Clark of HR walked the entire west side of the Landfill looking for deficiencies in the final layer of geocomposite. A few were found and marked for repair. The leachate cleanout riser pipe needed additional attention as to seal the aggregate from soon to be placed PSL. Travis to communicate that with Mustang the following morning. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang onsite during the morning to finalize repairs to the top layer of geocomposite along the east side of the Landfill. Poly division of Mustang filled approximately 1/2 of the east anchor trench with clean pre approved fill dirt. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 1/7/2020

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 30°F | 60°F | 43°F | 0.00 in. | 0.00 in. | 0.01 in. | 7% | 37% | 68% | 13°F | 6.5 mph | 10 mph | 24 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night<br>31°F | clear-day<br>40°F | clear-day<br>55°F | clear-day<br>60°F | clear-night<br>50°F | partly-cloudy-night<br>42°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete continued make ready for Wednesday, 1-8-2020 pour. Will include approximately 1/3 of the floor within the walls of the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL from the north west side adjacent to the north slope. They were aided by Gordon/PSC on proper placement procedures, what to look out for, and objectional material removal. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Watched and coached T-5 on initial placement of PSL soils atop the lined Landfill surface. Don Gray of PSC and Travis Clark spoke with Glenn of Mustang about repairs. He was going to have his crew return on Thursday. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang's Poly crew was onsite to finalize the placement of the anchor trench fill material. This included removal of previously excavated materials and replacement with clean, sandy, pre-approved materials. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 1/8/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 30°F | 64°F | 46°F | 0.00 in. | 0.00 in. | 0.00 in. | 9% | 40% | 84% | 19°F | 8.8 mph | 13 mph | 28 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | partly-cloudy-day | partly-cloudy-night | partly-cloudy-night |
| 31°F | 41°F | 57°F | 65°F | 57°F | 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete poured the northern most 1/3 of the inner floor of the processing pad. Approximately 320 yards of concrete was placed utilizing a pumper truck. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL from the north west side adjacent to the north slope. They were aided by Gordon/PSC on proper placement procedures, what to look out for, and objectional material removal. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Watched and coached T-5 on initial placement of PSL soils atop the lined Landfill surface. Don Gray of PSC inspected the east side of the Landfill for deficiencies in the top goecomposite layer and marked them. Don Gray, Carl King, Ravi V., and Travis Clark reviewed the southern edge of liner and came up with a solution as to where to place the stormwater berm. In addition all previous mentioned with the addition of BC Taylor spoke about the drying pad current layout and placement of protective/drainage material atop the secondary geosynthetic liner systems. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang was not onsite | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 1/9/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 69°F | 52°F | 0.01 in. | 0.01 in. | 0.02 in. | 5% | 50% | 96% | 23°F | 7.6 mph | 14 mph | 25 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **partly-cloudy-night** 40°F | **clear-day** 47°F | **clear-day** 66°F | **clear-day** 70°F | **clear-night** 60°F | **clear-night** 49°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete began working on rebar placement for the piers. In addition, Kevin Rankin was watering the blankets atop the previous days pour. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL from the north west side adjacent to the north slope. They were aided by Gordon/PSC on proper placement procedures, what to look out for, and objectional material removal. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Watched and coached T-5 on initial placement of PSL soils atop the lined Landfill surface, they seem to have it down very nicely. Don Gray, BC Taylor, Zach Ramos, and Glenn of Mustang Extreme spoke about placement of the stormwater berm along western side of the southern boundary. Berm was approved by PSC. T-5 was unable to narrow up the berm due to material content and compaction. It was anticipated Mustang would have to add additional material to the stormflap to encapsulate the entire berm. PSC also observed installation of the leak detection pipe at the southern boundary. Zach Ramos would provide input as to placement of the leak detection box that would be best positioned for operations. | | | | | | | | | |
| 4 | Mustang Extreme | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Mustang created a pipe boot along the leachate collection riser pipe where it entered the leachate collection system trench. The updated repair was superior to the previous install and was approved by PSC. The 1" leak detection pipe and valve were installed between the primary and secondary liners at the southern edge of liner in the leachate collection trench, the lowest point in the liner | | | | | | | | | |

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 1/14/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 35°F | 73°F | 52°F | 0.01 in. | 0.02 in. | 0.03 in. | 3% | 21% | 50% | 6°F | 5.6 mph | 10 mph | 16 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | partly-cloudy-day | clear-day | clear-night | clear-night |
| 36°F | 46°F | 67°F | 73°F | 63°F | 53°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete placed approximately 234 yard of concrete within the interior of the processing pad. Jerry Smith of Jerry's concrete was onsite with observation by Carl King of PSC. This is the second floor pour within the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL atop the landfill. In addition T-5 built the stormwater berm along the center and east side of the south end. PSC inspected the berm and confirmed it was built to specs provided. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Watched and coached T-5 on initial placement of PSL soils atop the lined Landfill surface, they seem to have it down very nicely. Don Gray and Carl King of PSC observed placement of the second concrete pad withing the processing pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

**Parkhill, Smith & Cooper, Inc.**
333 Rio Rancho Blvd., Suite 400
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F: (505) 867-6991

**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 1/15/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 46°F | 72°F | 56°F | 0.01 in. | 0.02 in. | 0.03 in. | 5% | 16% | 26% | 8°F | 6.0 mph | 12 mph | 25 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| partly-cloudy-night<br>47°F | cloudy<br>53°F | cloudy<br>69°F | partly-cloudy-day<br>70°F | cloudy<br>61°F | partly-cloudy-night<br>54°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete was working on placement of rebar and forms for the to be installed concrete piers. All work from the previous day was covered in blankets as requred by the project specifications. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL atop the landfill. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Observed placement of PSL soils atop the lined Landfill surface, they seem to have it down very nicely. As stated in the Mustang Extreme notes, PSC worked with ME on field fitting materials around the leak detection valve/box. Zach Ramos of OWL observed the installation and was happy with the efforts. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 1/21/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 35°F | 55°F | 44°F | 0.03 in. | 0.04 in. | 0.05 in. | 39% | 61% | 84% | 31°F | 11.4 mph | 16 mph | 27 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **partly-cloudy-night** 35°F | **partly-cloudy-day** 43°F | **partly-cloudy-day** 53°F | **cloudy** 55°F | **cloudy** 48°F | **cloudy** 46°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete finalized forming of the east side piers for the Processing Pad. All 14 were poured without issue. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL atop the landfill. Also cleared out a knob withing the drying pad excavation that we an error in the plans. Area to be surveyed tomorrow. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Observed placement of PSL soils atop the lined Landfill.<br>Spoke with Travis and BC on removal of the knob within the drying pad that would hold water. It was removed.<br>PSC also spoke with Zach on the southern operational berm. Zach wanted the southern operational berm 10; north of the southern stormwater flap. This information was conveyed to BC of T-5. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 1/22/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 36°F | 66°F | 50°F | 0.01 in. | 0.04 in. | 0.05 in. | 30% | 63% | 94% | 36°F | 8.8 mph | 14 mph | 21 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **clear-night** 37°F | **clear-day** 46°F | **clear-day** 61°F | **clear-day** 66°F | **clear-night** 58°F | **clear-night** 50°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's concrete poured approximately 690 yards of concrete within the containment walls of the processing pad. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL atop the landfill. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Observed placement of PSL soils atop the lined Landfill.<br>Bi-monthly meeting with owner, contractor, and PSC. Mostly scheduling and working out the details on the 1 or 2' of material over the synthetics within the drying pad. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Thursday 1/23/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 37°F | 62°F | 48°F | 0.02 in. | 0.03 in. | 0.06 in. | 25% | 54% | 77% | 31°F | 7.0 mph | 11 mph | 18 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | partly-cloudy-night |
| 38°F | 46°F | 57°F | 63°F | 54°F | 45°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Much of Jerry's concrete crew worked with HR to pour the eastern 300' of the entrance road. Approximately 290 yards were placed. All onsite testing was consistent and within the job specifications. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 continued placement of the PSL atop the landfill. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Observed placement of PSL soils atop the lined Landfill.<br>Most of the day spent observing placement of the eastern 300' of the entrance road. All inspections, tests, and procedures were fulfilled within job specifications. Saw cutting of the top would be completed on Friday 1-24-2020. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Tuesday 1/28/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Don Gray

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 36°F | 59°F | 49°F | 0.02 in. | 0.04 in. | 0.05 in. | 19% | 45% | 67% | 27°F | 16.2 mph | 27 mph | 41 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| **partly-cloudy-night** 46°F | **wind** 47°F | **wind** 54°F | **clear-day** 60°F | **clear-night** 53°F | **clear-night** 42°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## DAILY CONSTRUCTION REPORT LOG

**0 Workers | 0.0 Total Hours**

| No. | Company | Trade | Foreman | | Journeyman | | Apprentice | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours | # of Workers | Total Hours |
| 1 | High Roller EPC | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** Jerry's Concrete began forming the housekeeping pads within the processing pad containment walls. | | | | | | | | | |
| 2 | T-5 Construction | General Contractor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** T-5 finalized placement of PSL atop the landfill and is set to build a temporary access road so that the first half, northern, section of the entrance road can be formed and placed. | | | | | | | | | |
| 3 | Parkhill, Smith & Cooper, Inc. (Rio Rancho) | Resident Project Representative | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| | **Notes:** PSC met with Travis, BC, and Glenn regarding the subgrade for the drying pad. Both Don Gray of PSC and Glenn of Mustang felt the subgrade had too many rough spots or voids that contained sharp rocks or caliche. This observation was pointed out to BC by PSC on 1-21-2020 when reviewing the "knob" that had to be removed.<br><br>Don spoke with Ravi later the afternoon regarding the subgrade surface. While several options were discussed at the earlier meeting, no plan has been set into place. Ravi was to look at the options and go from there. | | | | | | | | | |
| | | **TOTAL** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Daily Construction Report Log's Attachments:**

PARKHILLSMITH&COOPER

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**Project: 01.0560.19 - OWL Surface Waste Management Facility Construction**
Mile Marker 30 Highway 128
Lea County, New Mexico88252

# Daily Log: Wednesday 1/29/2020

**Daily Log Completed**
**The Daily Log was completed by Carl King on Fri Jan 31, 2020 at 08:42amMST.** for Charles Fiedler

## WEATHER REPORT

| Temperature | | | Precipitation Since | | | Humidity | | | | Windspeed | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low | High | Avg | Midnight | 2 Days Ago | 3 Days Ago | Low | Avg | High | Dew | Avg | Max | Gust |
| 28°F | 61°F | 43°F | 0.01 in. | 0.03 in. | 0.05 in. | 15% | 48% | 74% | 22°F | 9.8 mph | 14 mph | 27 mph |

## DAILY SNAPSHOT

| 06:00AM | 09:00AM | 12:00PM | 03:00PM | 06:00PM | 09:00PM |
|---|---|---|---|---|---|
| clear-night | clear-day | clear-day | clear-day | clear-night | clear-night |
| 29°F | 40°F | 54°F | 62°F | 53°F | 44°F |

## OBSERVED WEATHER CONDITIONS

| No. | Weather Delay | Sky | Temp | Average | Precipitation | Wind | Ground/Sea |
|---|---|---|---|---|---|---|---|
| 1 | No | | | | | | |

## INSPECTION LOG

| No. | Start Time | End Time | Inspection Type | Inspecting Entity | Inspector Name | Location | Area |
|---|---|---|---|---|---|---|---|
| 1 | 04:26PM | 04:26PM | CQA at Cell | PSC | | | CellC1A |

**Comments:** cell completion

1.



IMG_2020_01_29_16_27_41_596.jpg



IMG_2020_01_29_16_29_29_481.jpg



IMG_2020_01_29_16_27_30_099.jpg



IMG_2020_01_29_16_27_35_931.jpg

VID_2020_01_29_16_29_55_621.mp4

# FIELD LOG AND PHOTOGRAPHS

## Project Photographs

# Project Photographs



04-23-2019 Initial clearing and grubbing of the project site. North view.

## Project Photographs



04-26-2019 Landfill excavation and berm construction. West view.

## Project Photographs



05-31-2019 Berm construction density test in progress.

## Project Photographs



05-31-2019 Construction of berm. North northwest view.



11-20-2019 Cell 1A berm construction nearing completion. Southwest view.

## Project Photographs



11-21-2019 North slope berm. East view.



11-22-2019 Properly stacking HDPE 60-mil black smooth. Forklift and sling.

## Project Photographs



11-25-2019 Properly stacked GCL on GCL storage pad.

## Project Photographs



12-03-2019 Anchor trench excavation. East view.



12-03-2019 Placement of GCL panels for Cell 1A. North view

## Project Photographs

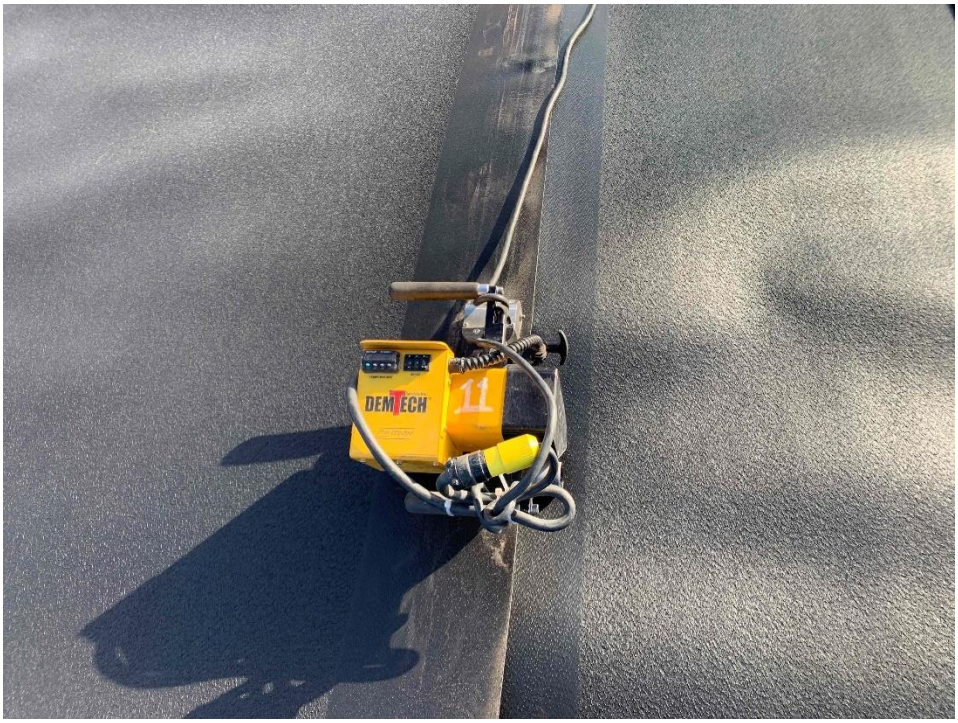


12-05-19 On-site destructive test in progress.

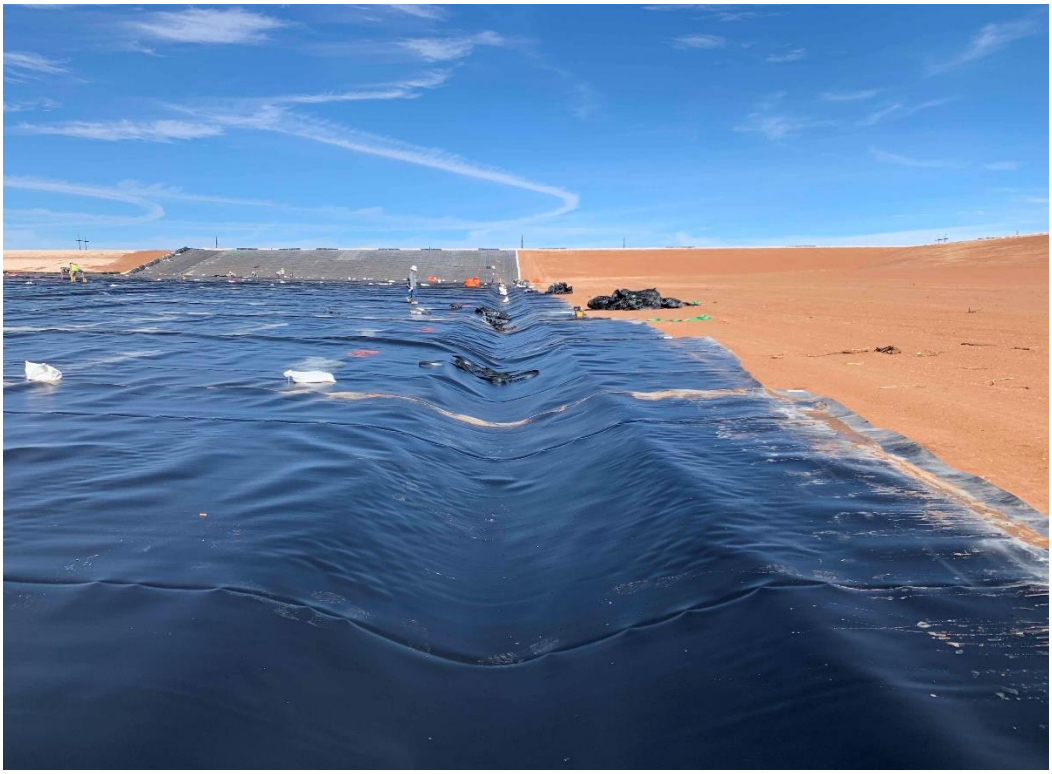


12-06-19 Air pressure testing of wedge “two-track” welding in process.

## Project Photographs




12-06-19 Wedge welding in process.



12-06-19 Secondary FML placed across the leachate trench. North view.

## Project Photographs



12-08-19 Textured FML on sideslope and smooth FML panel(s) installed atop the GCL. Southwest view.

## Project Photographs



12-10-19 200-mil geonet panel installation atop the 60-mil smooth HDPE liner. Northwest view.

## Project Photographs



12-11-19 Template for perforating leachate collection pipe.
Three rows of perforations at 120 degrees apart;
each row of ½-inch diameter holes off-set by 2-inches; and
each hole off-set by 6 inches along the length of a row.

## Project Photographs



12-12-19 60-mil double-sided textured HDPE Liner panel(s) installed atop the double-sided geocomposite. South view from north slope.

## Project Photographs




12-12-19 Placement of GCL for repairs on the south leachate trench. Note replacement GCL overlap on undamaged GCL panels.



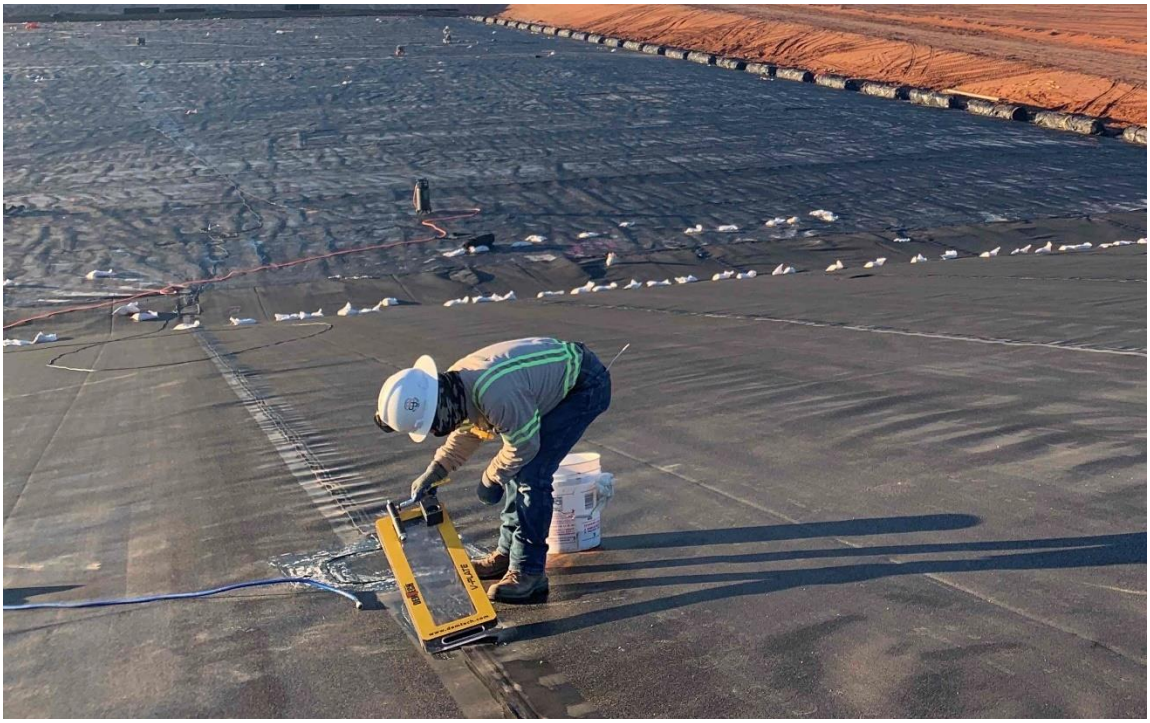

12-13-19 Installation of aggregate bedding layer in leachate collection trench. Note equipment rub sheet over geocomposite and FML. North view.

## Project Photographs

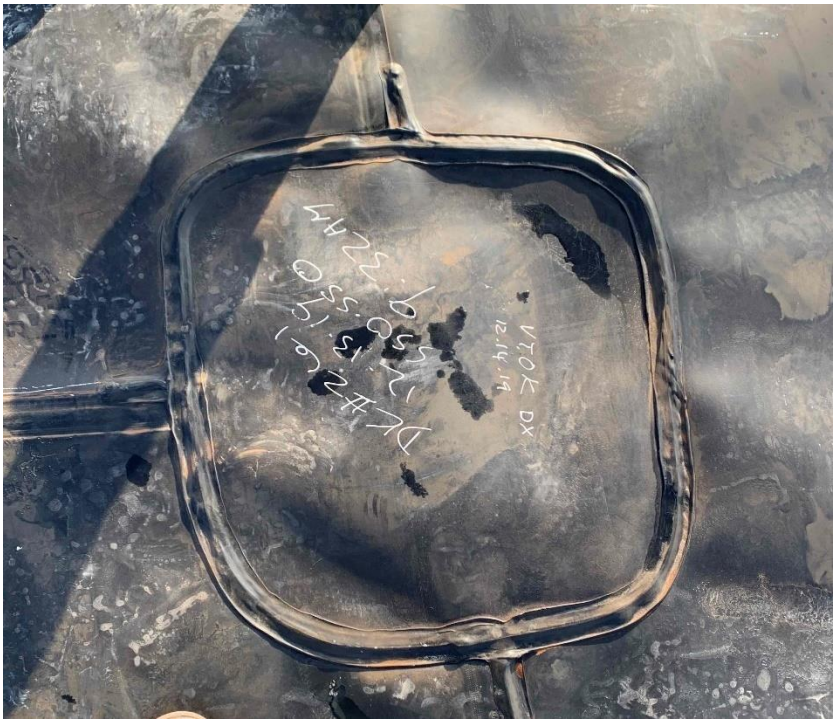



12-13-19 Extrusion welding of a patch in progress.

## Project Photographs



12-14-19 Vacuum testing of north slope extrusion welding. South view.



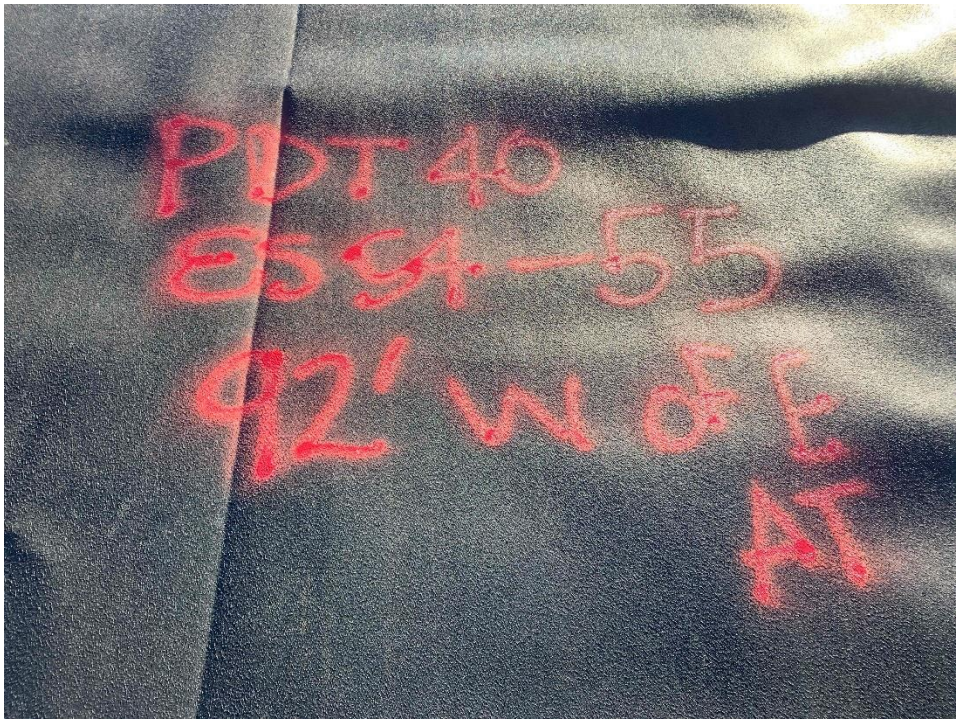
12-16-19 View of a patch extrusion welded in place.
Vacuum testing complete and marked.

## Project Photographs

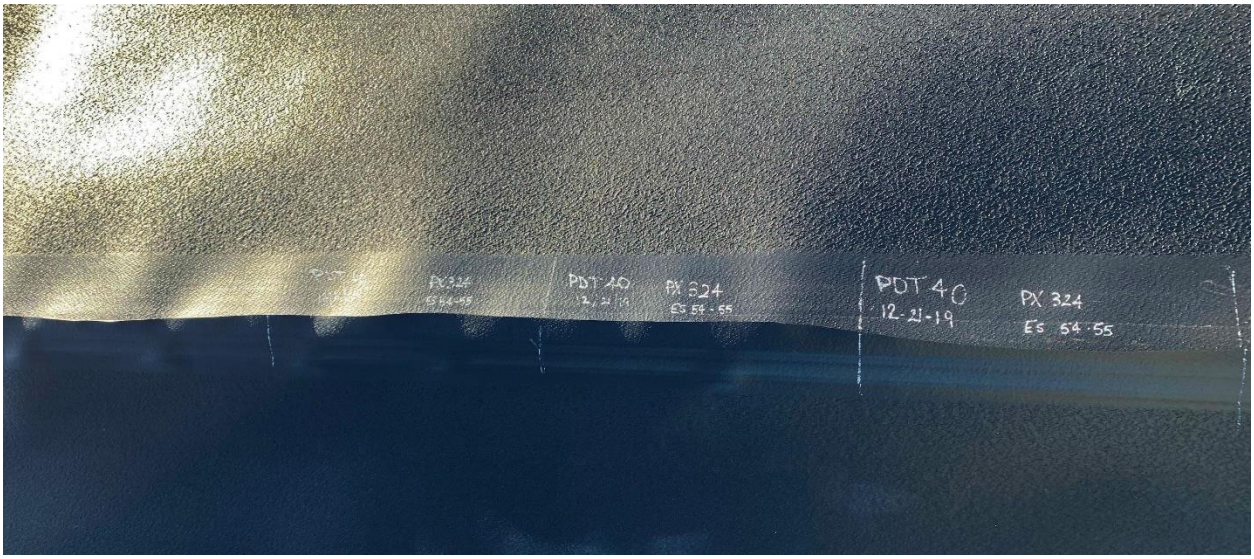


12-19-19 Double-sided geocomposite leak detection layer on slope, and 60-mil smooth HDPE liner panel(s) installed atop the 200-mil geonet leak detection layer. Northwest view.

## Project Photographs




12-21-19 Primary destructive test on east slope with location and panel numbers marked.




12-21-19 Destructive test marked and ready for removal.

## Project Photographs



12-31-19 Installation of final double-sided geocomposite layer on the east side. South view.



12-31-19 Plywood installed on west side edge of Cell A1. Southwest view.

## Project Photographs



01-03-20 One-foot excavation for burial of storm flap on west edge of Cell A1. North view.



01-04-20 Completion of double-sided geocomposite installation on the east slope. East view.

## Project Photographs



01-07-20 Use of zip ties to seam geocomposite geonet layers.



01-09-20 Liner system geosynthetics complete. PSL placement in progress. West view.

## Project Photographs

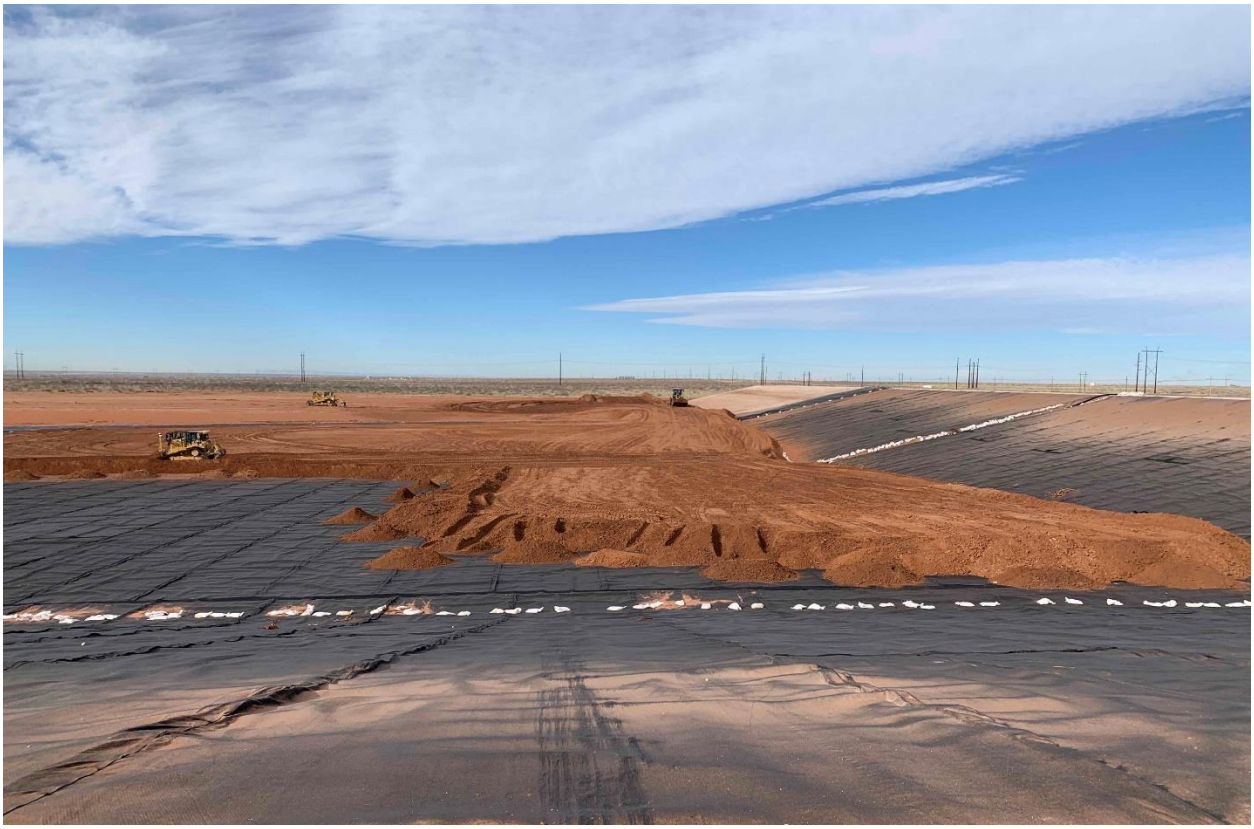


01-09-20 Leachate collection pipe to cleanout riser transition at toe of slope.



01-09-20 Installation of ¾ inch temporary leak detection tubing.

## Project Photographs



01-14-20 Liner system geosynthetics complete. PSL placement in progress on east floor. West view.

## Project Photographs



01-15-20 Leak detection sampling valve box at south of leachate trench. North view.

## Project Photographs




01-15-20 Vacuum testing on seaming between double-sided textured HDPE liner and stormwater berm rain flap. West view.

## Project Photographs



01-27-19 PSL placement in progress. Cell 1A PSL placement nearing completion. Looking North.

# Project Photographs



01-30-20 Completed Cell 1A. Northwest view.

# APPENDIX A

## Geotechnical Soil Testing

A.1. Moisture / Density Relationships

# Soils / Aggregates

**Report Date:** April 18, 2019

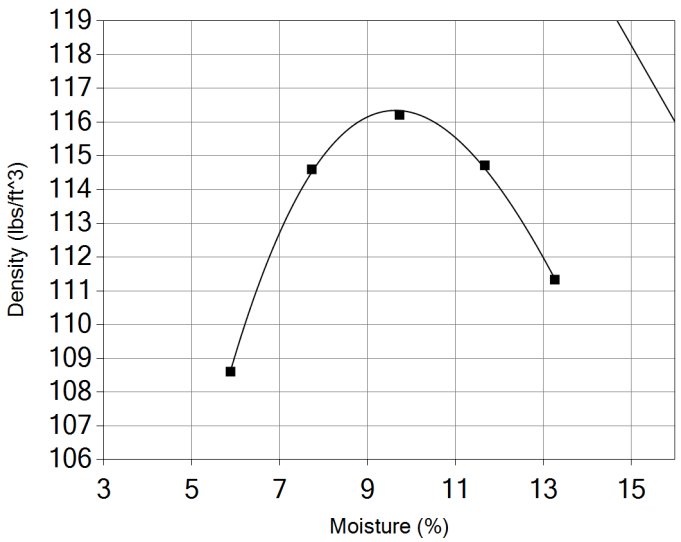
| Client | | Project | |
|---|---|---|---|
| **Name:** | ParkHill Smith & Cooper | **Name:** | (19-519-02232) OWL PSC #56018 |
| **Address:** | 4222 85th Street Lubbock, TX 79423 | **Address:** | Jal, NM |
| **Attention:** | Don Gray | **Phase:** | **Task:** |
| **PO Number:** | | **Manager:** | Roberto Balderrama |
| **Sample Date:** | 4/17/2019 by Client | **Lab/Ref. #:** | 2232-01L |
| **Source:** | Onsite native | **Description:** | Field description: Red silty sand ASTM D2487 lab description: Silty sand, Fine grain, No PI |

**Type of Specification:** No project specification was provided.

**Sieve Analysis: (ASTM C117-13/C136-14)**

**200 Wash Procedure:** A

| Sieve Size | Passing | Specification Min | Specification Max |
|---|---|---|---|
| #4 | 100% | | |
| #8 | 100% | | |
| #10 | 100% | | |
| #16 | 100% | | |
| #30 | 100% | | |
| #40 | 98% | | |
| #50 | 88% | | |
| #100 | 42% | | |
| #200 | 15% | | |




**Plasticity Index (ASTM D4318-10) PI Air Dried.**

**Preparation Method:** Dry **Liquid Limit Method:** A

**Soil Classification (ASTM D2487-11)** SM

| | | Specification Min | Specification Max |
|---|---|---|---|
| **Liquid Limit:** | NV | | |
| **Plastic Limit:** | NV | | |
| **Plasticity Index:** | NP | | |

**Moisture Density Relationship: (ASTM D698-12) Method: A**

**Preparation Method:** Dry **Rammer Type:** Mechanical

**Specific Gravity:** 2.651
Assumed

**Maximum Density (lbs/ft^3): 116.3**

**Optimum Moisture (%): 9.6**

**Remarks:**

**Distribution:** Wood

**Reviewed By:** Roberto Balderrama

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# Soils / Aggregates

**Report Date:** April 23, 2019

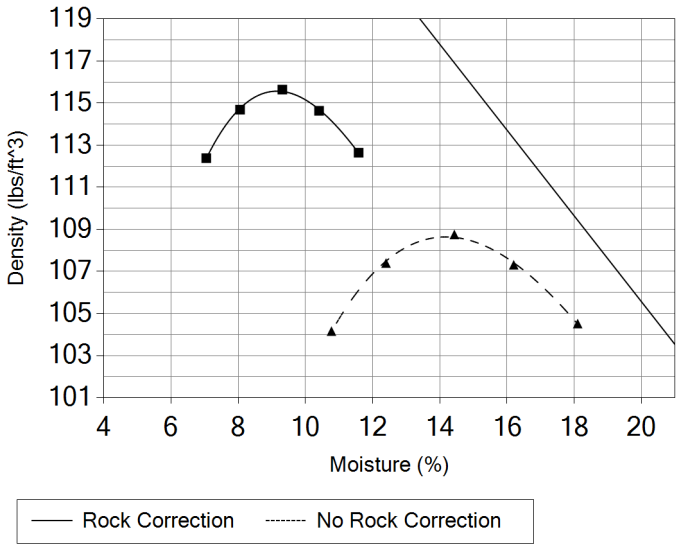
| Client | | Project | |
|---|---|---|---|
| **Name:** | ParkHill Smith & Cooper | **Name:** | (19-519-02232) OWL PSC #56018 |
| **Address:** | 4222 85th Street Lubbock, TX 79423 | **Address:** | Jal, NM |
| **Attention:** | Don Gray | **Phase:** | **Task:** |
| **PO Number:** | | **Manager:** | Roberto Balderrama |
| **Sample Date:** | 4/17/2019 by Client | **Lab/Ref. #:** | 2232-02L |
| **Source:** | Onsite native, blend of -5' and -8' over-ex | **Description:** | Field description: Tan/white silty sand with caliche ASTM D2487 lab description: Poorly graded gravel with silt and sand, Coarse to Fine grain, No PI |

**Type of Specification:** No project specification was provided.

**Sieve Analysis: (ASTM C117-13/C136-14)**

**200 Wash Procedure:** A

| | Sieve Size | Passing | Specification Min | Specification Max |
|---|---|---|---|---|
| Coarse Portion: | 4in. | 100% | | |
| | 3in. | 98% | | |
| | 2in. | 90% | | |
| | 1 1/2in. | 83% | | |
| | 1in. | 70% | | |
| | 3/4in. | 62% | | |
| | 1/2in. | 50% | | |
| | 3/8in. | 44% | | |
| | #4 | 32% | | |
| Fine Portion: | #8 | 25% | | |
| | #10 | 23% | | |
| | #16 | 20% | | |
| | #30 | 17% | | |
| | #40 | 16% | | |
| | #50 | 14% | | |
| | #100 | 9% | | |
| | #200 | 5.3% | | |




**Plasticity Index (ASTM D4318-10) PI Air Dried.**

**Preparation Method:** Dry **Liquid Limit Method:** A

**Soil Classification (ASTM D2487-11)** GP-GM

| | | Specification Min | Specification Max |
|---|---|---|---|
| **Liquid Limit:** | NV | | |
| **Plastic Limit:** | NV | | |
| **Plasticity Index:** | NP | | |

**Correction Soil Containing Oversize Particles (ASTM D4718-15)**

**Moisture Density Relationship: (ASTM D698-12) Method: C**

**Preparation Method:** Dry **Rammer Type:** Mechanical

**Specific Gravity:** 2.551 Assumed **Coarse Specific Gravity:** 2.065

**Maximum Density (lbs/ft^3): 108.6 Rock Corrected: 115.6**

**Optimum Moisture (%): 14.2 Rock Corrected: 9.2**

**Remarks:**

**Distribution:** Carl King, Don Gray

**Reviewed By:** Roberto Balderrama

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# Soils / Aggregates

**Report Date:** October 11, 2019

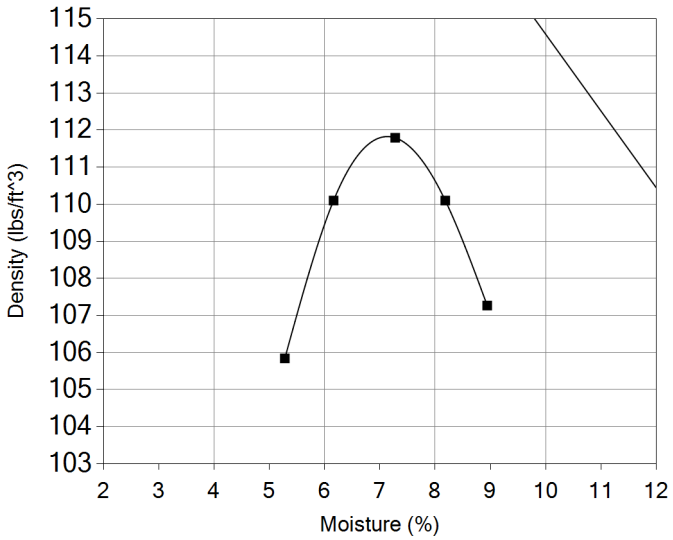
| Client | | Project | |
|---|---|---|---|
| **Name:** | ParkHill Smith & Cooper | **Name:** | (19-519-02368) Owl Landfill Services |
| **Address:** | 4222 85th Street Lubbock, TX 79423 | **Address:** | Hobbs, NM |
| **Attention:** | Carl King P.E. | **Phase:** | **Task:** |
| **PO Number:** | 560.19.001.01 | **Manager:** | Hugo Carreon |
| **Sample Date:** | 10/4/2019 by Client / Contractor (Constructor's Inc.) | **Lab/Ref. #:** | 2368-01L |
| **Source:** | Landfill berm material (current processed) | **Description:** | Tan Poorly Graded Gravel (durable caliche) w/Silt and Sand (Job 560-19), No PI |

**Type of Specification:** No project specification was provided.

**Sieve Analysis: (ASTM C117-13/C136-14)**

**200 Wash Procedure:** A

| | Sieve Size | Passing | Specification Min | Specification Max |
|---|---|---|---|---|
| Coarse Portion: | 4in. | 100% | | |
| | 3in. | 96% | | |
| | 2in. | 84% | | |
| | 1 1/2in. | 73% | | |
| | 1in. | 56% | | |
| | 3/4in. | 49% | | |
| | 1/2in. | 41% | | |
| | 3/8in. | 36% | | |
| | #4 | 28% | | |
| Fine Portion: | #8 | 24% | | |
| | #10 | 24% | | |
| | #16 | 22% | | |
| | #30 | 20% | | |
| | #40 | 19% | | |
| | #50 | 17% | | |
| | #100 | 11% | | |
| | #200 | 6.8% | | |




**Plasticity Index (ASTM D4318-10) PI Air Dried.**

**Preparation Method:** Dry **Liquid Limit Method:** A

**Soil Classification (ASTM D2487-11)** GP-GM

| | | Specification Min | Specification Max |
|---|---|---|---|
| **Liquid Limit:** | 31 | | |
| **Plastic Limit:** | NV | | |
| **Plasticity Index:** | NP | | |

**Correction Soil Containing Oversize Particles (ASTM D4718-15)**

**Moisture Density Relationship: (ASTM D698-12) Method: C**

**Preparation Method:** Moist **Rammer Type:** Manual

**Specific Gravity:** 2.251 **Coarse Specific Gravity:** 1.973

**Rock Corrected Maximum Density (lbs/ft^3): 111.8**

**Rock Corrected Optimum Moisture (%): 7.1**

**Remarks:** Material would not roll, flattens. Sandy non-plastic.

**Distribution:** Don Gray, Carl King P.E.

**Reviewed By:** Hugo Carreon

Hugo Carreon

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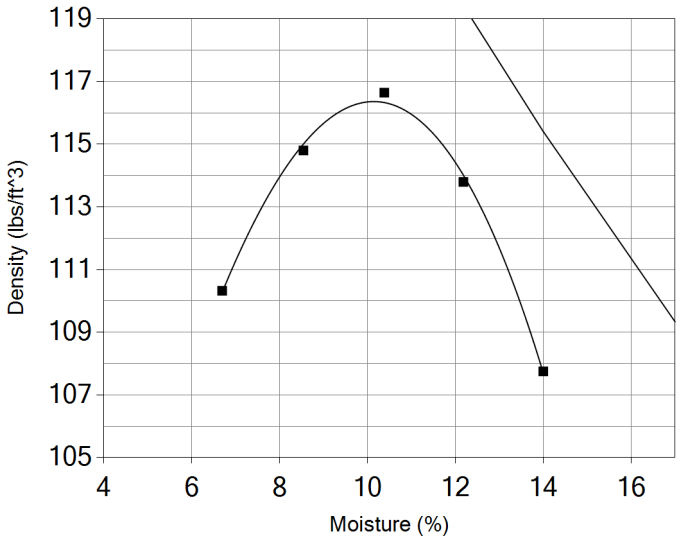
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# Moisture / Density Relationship

**Report Date:** December 10, 2019

| Client | | Project | |
|---|---|---|---|
| **Name:** | ParkHill Smith & Cooper | **Name:** | (19-519-02368) Oilfield Water Logistics - Landfill Services, NM 128 at MM 30 |
| **Address:** | 4222 85th Street Lubbock, TX 79423 | **Address:** | Hobbs, NM |
| **Attention:** | Carl King P.E. | **Phase:** | **Task:** |
| **PO Number:** | 560.19.001.01 | **Manager:** | Hugo Carreon |
| **Sample Date:** | 12/5/2019 by Christopher Wawrin | **Lab/Ref. #:** | 2368-05L |
| **Source:** | Stockpile west of holding pond, various east site finish grade locations | **Description:** | Red fine clean sand |

**Type of Specification:**




**Moisture Density Relationship: (ASTM D1557-12) Method: A**

**Preparation Method:** Dry **Rammer Type:** Manual

**Specific Gravity:** 2.5 Assumed

**Maximum Density (lbs/ft^3): 116.4**

**Optimum Moisture (%): 10.1**

**Remarks:**

**Distribution:** Don Gray, Andy Yuhas, Carl King P.E.

**Reviewed By:** Hugo Carreon

Hugo Carreon

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# APPENDIX A

## Geotechnical Soil Testing

A.2. Subgrade (Cell 1A Floor) Test Results

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Subgrade
**PROJECT NO.:** 10156019
**PAGE NO.:** 1

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | | **Averages (Not including A):** | **113.7** | | **102.3** | |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | 1 | 96% | 110.8 | 6.2% | 11/27/2019 | FLOOR |
| B | 2 | 99% | 114.4 | 7.9% | 11/27/2019 | FLOOR |
| B | 3 | 98% | 113.4 | 7.1% | 11/27/2019 | FLOOR |
| B | 4 | 96% | 110.5 | 5.9% | 11/27/2019 | FLOOR |
| B | 5 | 97% | 112.7 | 6.5% | 11/27/2019 | FLOOR |
| B | 6 | 96% | 111.2 | 4.8% | 11/27/2019 | FLOOR |
| B | 7 | 98% | 113.7 | 7.5% | 11/27/2019 | FLOOR |
| B | 8 | 91% | 104.9 | 5.8% | 11/27/2019 | FLOOR |
| B | 9 | 99% | 114.1 | 5.5% | 11/27/2019 | FLOOR |
| B | 10 | 92% | 105.8 | 6.3% | 11/27/2019 | FLOOR |
| B | 11 | 96% | 111.2 | 5.3% | 11/27/2019 | FLOOR |
| B | 12 | 98% | 113.7 | 6.5% | 11/27/2019 | FLOOR |
| B | 13 | 98% | 113.5 | 6.5% | 11/27/2019 | FLOOR |
| B | 14 | 94% | 108.7 | 6.7% | 11/27/2019 | FLOOR |
| B | 15 | 96% | 111.4 | 8.5% | 11/27/2019 | FLOOR |
| B | 16 | 94% | 108.5 | 6.0% | 11/27/2019 | FLOOR |
| B | 17 | 99% | 114.8 | 5.6% | 11/27/2019 | FLOOR |
| B | 18 | 96% | 110.6 | 6.8% | 11/27/2019 | FLOOR |
| B | 19 | 95% | 109.7 | 6.9% | 11/27/2019 | FLOOR |
| B | 20 | 99% | 114.3 | 6.2% | 11/27/2019 | FLOOR |
| B | 21 | 99% | 114.4 | 4.5% | 11/27/2019 | FLOOR |
| B | 22 | 98% | 113.1 | 5.7% | 11/27/2019 | FLOOR |
| B | 23 | 94% | 109.2 | 6.8% | 11/27/2019 | FLOOR |
| B | 24 | 100% | 115.5 | 7.2% | 11/27/2019 | FLOOR |
| B | 25 | 99% | 114.0 | 5.5% | 11/27/2019 | FLOOR |
| B | 26 | 98% | 112.9 | 5.7% | 11/27/2019 | FLOOR |
| B | 27 | 97% | 111.7 | 7.6% | 11/27/2019 | FLOOR |
| B | 28 | 100% | 115.3 | 5.2% | 11/27/2019 | FLOOR |
| B | 29 | 99% | 114.1 | 7.4% | 11/27/2019 | FLOOR |
| B | 30 | 99% | 114.3 | 6.8% | 11/27/2019 | FLOOR |
| B | 31 | 96% | 111.0 | 5.8% | 11/27/2019 | FLOOR |
| B | 32 | 97% | 112.2 | 6.2% | 11/27/2019 | FLOOR |
| B | 33 | 99% | 114.3 | 7.1% | 11/27/2019 | EAST SLOPE |
| B | 34 | 91% | 105.5 | 4.7% | 11/27/2019 | EAST SLOPE |
| B | 35 | 91% | 105.3 | 6.3% | 11/27/2019 | EAST SLOPE |
| B | 36 | 90% | 104.4 | 5.0% | 11/27/2019 | EAST SLOPE |
| B | 37 | 96% | 111.0 | 5.6% | 11/27/2019 | NORTH SLOPE |
| B | 38 | 93% | 107.4 | 6.3% | 11/27/2019 | NORTH SLOPE |
| B | 39 | 90% | 104.6 | 6.6% | 11/27/2019 | NORTH SLOPE |
| B | 40 | 95% | 110.0 | 8.1% | 11/27/2019 | NORTH SLOPE |

# APPENDIX A

## Geotechnical Soil Testing

A.3. Berm Density Testing Results

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 1

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray, Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | N1-1 | 94% | 108.5 | 14.0% | 4/26/2019 | |
| B | N2-1 | 90% | 104.4 | 12.8% | 4/26/2019 | |
| B | N3-1 | 95% | 110.1 | 9.7% | 4/26/2019 | |
| B | N4-1 | 94% | 108.9 | 10.0% | 4/29/2019 | |
| B | N5-1 | 95% | 110.3 | 8.9% | 4/29/2019 | |
| B | N6-1 | 96% | 110.5 | 7.4% | 4/29/2019 | |
| B | N7-1 | 96% | 110.8 | 8.2% | 4/29/2019 | |
| B | N8-1 | 92% | 106.0 | 6.0% | 4/29/2019 | |
| B | N9-1 | 99% | 114.0 | 6.8% | 5/1/2019 | |
| | | | | | | |
| B | N1-2 | 96% | 110.5 | 9.3% | 4/30/2019 | |
| B | N2-2 | 94% | 108.6 | 8.5% | 4/30/2019 | |
| B | N3-2 | 91% | 105.7 | 7.0% | 4/30/2019 | |
| B | N4-2 | 98% | 113.5 | 9.1% | 5/1/2019 | |
| B | N5-2 | 96% | 110.9 | 10.8% | 5/1/2019 | |
| B | N6-2 | 93% | 107.0 | 8.0% | 4/30/2019 | |
| B | N7-2 | 91% | 105.3 | 7.5% | 4/30/2019 | |
| B | N8-2 | 96% | 110.6 | 9.2% | 4/30/2019 | |
| B | N9-2 | 97% | 111.9 | 7.3% | 5/1/2019 | |
| | | | | | | |
| B | E1-0 | 99% | 114.1 | 9.4% | 5/1/2019 | |
| B | E2-0 | 90% | 104.4 | 8.0% | 5/1/2019 | |
| B | E3-0 | 95% | 109.4 | 7.9% | 5/1/2019 | |
| | | | | | | |
| B | E1-1 | 91% | 105.4 | 6.5% | 5/22/2019 | |
| B | E2-1 | 94% | 109.2 | 7.0% | 5/22/2019 | |
| B | E3-1 | 96% | 110.6 | 8.0% | 5/22/2019 | |
| B | E4-1 | 92% | 106.3 | 8.3% | 5/1/2019 | |
| B | E5-1 | 94% | 109.1 | 6.8% | 5/1/2019 | |
| B | E6-1 | 96% | 110.4 | 6.6% | 5/1/2019 | |
| B | E7-1 | 92% | 106.3 | 11.4% | 5/1/2019 | |
| B | E8-1 | 93% | 107.0 | 14.0% | 5/1/2019 | |
| B | E9-1 | 90% | 104.4 | 15.9% | 5/1/2019 | |
| B | E10-1 | 90% | 104.4 | 14.0% | 5/1/2019 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

GORDON PSC ENVIRONMENTAL

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Rio Rancho, New Mexico 87124
505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 2

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray, Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | N1-3 | 93% | 107.8 | 9.9% | 5/16/2019 | |
| B | N2-3 | 91% | 104.9 | 8.0% | 5/16/2019 | |
| B | N3-3 | 100% | 115.1 | 8.8% | 5/16/2019 | |
| B | N4-3 | 91% | 104.8 | 8.0% | 5/16/2019 | |
| B | N5-3 | 93% | 107.6 | 7.8% | 5/16/2019 | |
| B | N6-3 | 93% | 107.7 | 7.4% | 5/16/2019 | |
| B | N7-3 | 90% | 104.0 | 9.7% | 5/16/2019 | |
| B | N8-3 | 92% | 106.3 | 8.8% | 5/16/2019 | |
| B | N9-3 | 91% | 105.5 | 11.6% | 5/16/2019 | |
| | | | | | | |
| B | N1-4 | 91% | 105.5 | 11.3% | 5/22/2019 | |
| B | N2-4 | 90% | 104.4 | 9.7% | 5/22/2019 | |
| B | N3-4 | 94% | 109.1 | 7.1% | 5/22/2019 | |
| B | N4-4 | 94% | 108.4 | 8.9% | 5/22/2019 | |
| B | N5-4 | 92% | 106.9 | 8.1% | 5/22/2019 | |
| B | N6-4 | 93% | 108.0 | 8.1% | 5/22/2019 | |
| B | N7-4 | 95% | 110.0 | 10.6% | 5/22/2019 | |
| B | N8-4 | 94% | 108.6 | 10.1% | 5/22/2019 | |
| B | N9-4 | 94% | 108.5 | 11.8% | 5/22/2019 | |
| | | | | | | |
| B | E1-2 | 99% | 114.6 | 5.7% | 5/30/2019 | |
| B | E2-2 | 96% | 110.7 | 9.3% | 5/30/2019 | |
| B | E3-2 | 100% | 115.4 | 9.4% | 5/30/2019 | |
| B | E4-2 | 99% | 114.3 | 13.2% | 5/30/2019 | |
| B | E5-2 | 92% | 106.2 | 11.9% | 5/30/2019 | |
| B | E6-2 | 94% | 109.0 | 6.9% | 5/30/2019 | |
| B | E7-2 | 96% | 110.5 | 13.7% | 5/30/2019 | |
| B | E8-2 | 93% | 107.9 | 11.5% | 5/30/2019 | |
| B | E9-2 | 99% | 114.5 | 11.6% | 5/30/2019 | |
| B | E10-2 | 95% | 110.2 | 8.8% | 5/30/2019 | |
| | | | | | | |
| B | N1-5 | 92% | 106.4 | 12.8% | 5/31/2019 | |
| B | N2-5 | 99% | 114.6 | 7.3% | 5/31/2019 | |
| B | N3-5 | 91% | 105.7 | 9.2% | 5/31/2019 | |
| B | N4-5 | 94% | 109.0 | 9.3% | 5/31/2019 | |
| B | N5-5 | 92% | 106.2 | 7.9% | 5/31/2019 | |
| B | N6-5 | 93% | 107.9 | 8.8% | 5/31/2019 | |
| B | N7-5 | 94% | 109.0 | 8.1% | 5/31/2019 | |
| B | N8-5 | 93% | 107.8 | 12.4% | 5/31/2019 | |
| B | N9-5 | 93% | 107.9 | 7.4% | 5/31/2019 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 3

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray, Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | E1-3 | 94% | 108.3 | 11.9% | 6/3/2019 | |
| B | E2-3 | 92% | 106.6 | 10.7% | 6/3/2019 | |
| B | E3-3 | 96% | 110.6 | 11.9% | 6/3/2019 | |
| B | E4-3 | 93% | 108.0 | 10.5% | 6/3/2019 | |
| B | E5-3 | 91% | 104.9 | 11.1% | 6/3/2019 | |
| B | E6-3 | 91% | 104.9 | 12.1% | 6/3/2019 | |
| B | E7-3 | 92% | 106.5 | 11.0% | 6/3/2019 | |
| B | E8-3 | 96% | 110.8 | 12.3% | 6/3/2019 | |
| B | E9-3 | 94% | 108.3 | 9.8% | 6/3/2019 | |
| B | E10-3 | 94% | 108.8 | 9.5% | 6/3/2019 | |
| | | | | | | |
| B | N1-6 | 95% | 110.0 | 13.5% | 6/5/2019 | |
| B | N2-6 | 99% | 113.9 | 14.8% | 6/5/2019 | |
| B | N3-6 | 95% | 109.7 | 15.2% | 6/5/2019 | |
| B | N4-6 | 94% | 108.6 | 13.9% | 6/5/2019 | |
| B | N5-6 | 93% | 107.1 | 12.8% | 6/4/2019 | |
| B | N6-6 | 93% | 107.6 | 13.4% | 6/4/2019 | |
| B | N7-6 | 96% | 110.7 | 13.5% | 6/4/2019 | |
| B | N8-6 | 92% | 106.8 | 11.0% | 6/5/2019 | |
| B | N9-6 | 93% | 107.3 | 12.1% | 6/5/2019 | |
| | | | | | | |
| B | E1-4 | 92% | 106.9 | 13.7% | 6/5/2019 | |
| B | E2-4 | 91% | 105.4 | 14.9% | 6/5/2019 | |
| B | E3-4 | 94% | 109.2 | 14.3% | 6/5/2019 | |
| B | E4-4 | 90% | 104.4 | 14.2% | 6/5/2019 | |
| B | E5-4 | 93% | 107.7 | 13.8% | 6/5/2019 | |
| B | E6-4 | 92% | 105.8 | 13.3% | 6/5/2019 | |
| B | E7-4 | 90% | 104.4 | 14.1% | 6/5/2019 | |
| B | E8-4 | 93% | 107.4 | 14.4% | 6/5/2019 | |
| B | E9-4 | 93% | 107.8 | 15.0% | 6/5/2019 | |
| B | E10-4 | 94% | 108.7 | 15.1% | 6/5/2019 | |
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GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
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505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 4

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | E1-5 | 90% | 104.4 | 9.6% | 9/10/2019 | |
| B | E2-5 | 95% | 110.2 | 9.6% | 9/12/2019 | |
| B | E3-5 | 92% | 106.9 | 8.9% | 9/12/2019 | |
| B | E4-5 | 93% | 107.9 | 11.9% | 9/12/2019 | |
| B | E5-5 | 96% | 110.6 | 9.6% | 9/12/2019 | |
| B | E6-5 | 91% | 105.7 | 15.3% | 9/12/2019 | |
| B | E7-5 | 95% | 109.6 | 19.0% | 9/12/2019 | |
| B | E8-5 | 96% | 110.8 | 9.9% | 9/12/2019 | |
| B | E9-5 | 90% | 104.4 | 14.6% | 9/12/2019 | |
| B | E10-5 | 98% | 112.9 | 9.3% | 9/12/2019 | |
| | | | | | | |
| B | N1-7 | 96% | 110.4 | 10.1% | 9/12/2019 | |
| B | N2-7 | 92% | 106.3 | 7.7% | 9/12/2019 | |
| B | N3-7 | 96% | 110.9 | 12.5% | 9/12/2019 | |
| B | N4-7 | 96% | 110.6 | 8.7% | 9/12/2019 | |
| B | N5-7 | 94% | 108.8 | 5.9% | 9/12/2019 | |
| B | N6-7 | 93% | 107.8 | 6.1% | 9/12/2019 | |
| B | N7-7 | 90% | 104.6 | 7.5% | 9/12/2019 | |
| B | N8-7 | 95% | 109.6 | 6.7% | 9/12/2019 | |
| B | N9-7 | 95% | 109.4 | 7.6% | 9/12/2019 | |
| | | | | | | |
| B | N1-8 | 92% | 106.4 | 15.1% | 9/24/2019 | |
| B | N2-8 | 95% | 110.0 | 14.8% | 9/24/2019 | |
| B | N3-8 | 94% | 108.6 | 15.2% | 9/24/2019 | |
| B | N4-8 | 90% | 104.4 | 15.2% | 9/24/2019 | |
| B | N5-8 | 90% | 104.5 | 15.3% | 9/24/2019 | |
| B | N6-8 | 94% | 108.6 | 14.6% | 9/24/2019 | |
| B | N7-8 | 90% | 104.3 | 16.3% | 9/24/2019 | |
| B | N8-8 | 93% | 107.9 | 15.2% | 9/24/2019 | |
| B | N9-8 | 92% | 106.3 | 15.7% | 9/24/2019 | |
| | | | | | | |
| B | E1-6 | 91% | 105.1 | 13.1% | 9/24/2019 | |
| B | E2-6 | 99% | 114.1 | 11.2% | 9/24/2019 | |
| B | E3-6 | 97% | 112.7 | 12.8% | 9/24/2019 | |
| B | E4-6 | 94% | 108.2 | 14.6% | 9/24/2019 | |
| B | E5-6 | 93% | 107.9 | 12.4% | 9/24/2019 | |
| B | E6-6 | 91% | 105.1 | 17.4% | 9/24/2019 | |
| B | E7-6 | 92% | 106.6 | 17.6% | 9/24/2019 | |
| B | E8-6 | 97% | 112.7 | 13.6% | 9/24/2019 | |
| B | E9-6 | 93% | 107.1 | 14.1% | 9/24/2019 | |
| B | E10-6 | 94% | 108.5 | 15.9% | 9/24/2019 | |

GORDON ENVIRONMENTAL PSC

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# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 5

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | N1-9 | 91% | 105.6 | 1934.0% | 9/26/2019 | |
| B | N2-9 | 90% | 104.4 | 15.4% | 9/26/2019 | |
| B | N3-9 | 91% | 105.0 | 15.9% | 9/26/2019 | |
| B | N4-9 | 93% | 107.1 | 16.7% | 9/26/2019 | |
| B | N5-9 | 94% | 109.2 | 17.2% | 10/2/2019 | |
| B | N6-9 | 94% | 108.9 | 17.6% | 10/2/2019 | |
| B | N7-9 | 97% | 111.9 | 17.3% | 10/2/2019 | |
| B | N8-9 | 94% | 108.8 | 18.1% | 10/2/2019 | |
| B | N9-9 | 94% | 108.3 | 19.8% | 10/2/2019 | |
| | | | | | | |
| B | E1-7 | 93% | 108.0 | 19.2% | 10/2/2019 | |
| B | E2-7 | 90% | 104.3 | 20.9% | 10/2/2019 | |
| B | E3-7 | 99% | 114.6 | 15.0% | 10/2/2019 | |
| B | E4-7 | 91% | 104.9 | 20.9% | 10/2/2019 | |
| B | E5-7 | 91% | 105.0 | 20.9% | 10/2/2019 | |
| B | E6-7 | 90% | 104.6 | 21.3% | 10/2/2019 | |
| B | E7-7 | 92% | 106.8 | 21.5% | 10/2/2019 | |
| B | E8-7 | 93% | 107.1 | 20.1% | 10/2/2019 | |
| B | E9-7 | 98% | 113.5 | 17.0% | 10/2/2019 | |
| B | E10-7 | 90% | 104.5 | 22.0% | 10/2/2019 | |
| | | | | | | |
| B | N1-10 | 95% | 109.3 | 19.6% | 10/3/2019 | |
| B | N2-10 | 93% | 107.1 | 20.6% | 10/3/2019 | |
| B | N3-10 | 98% | 112.8 | 17.4% | 10/3/2019 | |
| B | N4-10 | 90% | 104.3 | 23.3% | 10/3/2019 | |
| B | N5-10 | 91% | 105.4 | 20.4% | 10/3/2019 | |
| B | N6-10 | 92% | 105.8 | 18.8% | 10/3/2019 | |
| B | N7-10 | 90% | 104.4 | 22.3% | 10/3/2019 | |
| B | N8-10 | 92% | 106.5 | 20.5% | 10/3/2019 | |
| B | N9-10 | 91% | 105.4 | 19.8% | 10/3/2019 | |
| | | | | | | |
| D | E1-8 | 91% | 106.1 | 19.5% | 10/5/2019 | CRK |
| D | E2-8 | 91% | 105.5 | 20.6% | 10/5/2019 | CRK |
| D | E3-8 | 90% | 104.3 | 17.9% | 10/5/2019 | CRK |
| D | E4-8 | 90% | 105.2 | 15.3% | 10/5/2019 | CRK |
| D | E5-8 | 90% | 104.3 | 24.3% | 10/5/2019 | CRK |
| D | E6-8 | 90% | 105.1 | 23.9% | 10/5/2019 | CRK |
| D | E7-8 | 90% | 104.3 | 21.4% | 10/5/2019 | CRK |
| D | E8-8 | 90% | 105.1 | 17.3% | 10/5/2019 | CRK |
| D | E9-8 | 91% | 105.4 | 18.9% | 10/5/2019 | CRK |
| D | E10-8 | 91% | 106.1 | 15.1% | 10/5/2019 | CRK |

GORDON ENVIRONMENTAL PSC

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# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 6

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray, Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| C | N1-11 | 97% | 108.2 | 13.7% | 10/10/2019 | |
| C | N2-11 | 90% | 101.0 | 13.1% | 10/10/2019 | |
| C | N3-11 | 96% | 107.0 | 9.1% | 10/10/2019 | |
| C | N4-11 | 88% | 98.1 | 12.6% | 10/10/2019 | |
| C | N5-11 | 91% | 102.0 | 12.0% | 10/10/2019 | |
| C | N6-11 | 93% | 103.8 | 8.7% | 10/10/2019 | |
| C | N7-11 | 90% | 100.1 | 12.7% | 10/10/2019 | |
| C | N8-11 | 90% | 100.5 | 12.8% | 10/10/2019 | |
| C | N9-11 | 91% | 101.3 | 9.0% | 10/10/2019 | |
| | | | | | | |
| D | E1-9 | 92% | 106.8 | 9.6% | 10/14/2019 | |
| D | E2-9 | 86% | 100.4 | 11.0% | 10/14/2019 | |
| C | E3-9 | 94% | 105.5 | 10.4% | 10/14/2019 | |
| C | E4-9 | 91% | 101.5 | 10.0% | 10/14/2019 | |
| C | E5-9 | 90% | 101.0 | 11.9% | 10/14/2019 | |
| C | E6-9 | 91% | 101.5 | 10.9% | 10/14/2019 | |
| C | E7-9 | 91% | 101.5 | 9.4% | 10/14/2019 | |
| C | E8-9 | 92% | 102.3 | 8.1% | 10/14/2019 | |
| C | E9-9 | 96% | 106.9 | 8.2% | 10/14/2019 | |
| C | E10-9 | 92% | 102.5 | 10.6% | 10/14/2019 | |
| | | | | | | |
| C | N1-12 | 91% | 101.8 | 16.6% | 10/17/2019 | |
| C | N2-12 | 90% | 100.4 | 13.1% | 10/17/2019 | |
| C | N3-12 | 92% | 102.7 | 10.0% | 10/17/2019 | |
| C | N4-12 | 91% | 101.6 | 13.1% | 10/17/2019 | |
| C | N5-12 | 91% | 101.7 | 11.0% | 10/17/2019 | |
| C | N6-12 | 92% | 102.3 | 12.0% | 10/17/2019 | |
| C | N7-12 | 92% | 102.9 | 10.9% | 10/17/2019 | |
| C | N8-12 | 90% | 100.9 | 13.9% | 10/17/2019 | |
| C | N9-12 | 90% | 101.1 | 15.7% | 10/17/2019 | |
| | | | | | | |
| C | E1-10 | 95% | 106.6 | 12.9% | 10/17/2019 | |
| C | E2-10 | 90% | 100.2 | 12.7% | 10/17/2019 | |
| C | E3-10 | 90% | 100.8 | 11.7% | 10/17/2019 | |
| C | E4-10 | 90% | 100.2 | 13.2% | 10/17/2019 | |
| C | E5-10 | 93% | 104.2 | 11.0% | 10/17/2019 | |
| C | E6-10 | 91% | 102.0 | 8.7% | 10/17/2019 | |
| C | E7-10 | 90% | 100.5 | 10.8% | 10/17/2019 | |
| C | E8-10 | 91% | 101.6 | 10.2% | 10/17/2019 | |
| C | E9-10 | 92% | 102.4 | 10.8% | 10/17/2019 | |
| C | E10-10 | 91% | 101.2 | 10.2% | 10/17/2019 | |

GORDON ENVIRONMENTAL PSC

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# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 7

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Andy Yuhas

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | **Top Soil, Silty Sand-Brown** | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| C | N1-13 | 93% | 104.3 | 11.1% | 10/21/2019 | |
| C | N2-13 | 90% | 100.3 | 12.2% | 10/21/2019 | |
| C | N3-13 | 94% | 104.9 | 11.0% | 10/21/2019 | |
| C | N4-13 | 95% | 105.8 | 11.2% | 10/21/2019 | |
| C | N5-13 | 91% | 101.4 | 12.5% | 10/21/2019 | |
| C | N6-13 | 91% | 101.9 | 11.0% | 10/21/2019 | |
| C | N7-13 | 92% | 102.4 | 13.0% | 10/21/2019 | |
| C | N8-13 | 94% | 105.5 | 9.1% | 10/21/2019 | |
| C | N9-13 | 90% | 100.6 | 11.0% | 10/21/2019 | |
| | | | | | | |
| C | E1-11 | 91% | 101.2 | 11.1% | 10/22/2019 | |
| C | E2-11 | 92% | 102.6 | 13.2% | 10/22/2019 | |
| C | E3-11 | 93% | 103.5 | 12.2% | 10/22/2019 | |
| C | E4-11 | 91% | 101.4 | 13.2% | 10/22/2019 | |
| C | E5-11 | 91% | 101.8 | 9.5% | 10/22/2019 | |
| C | E6-11 | 90% | 100.5 | 12.3% | 10/22/2019 | |
| C | E7-11 | 94% | 105.4 | 11.9% | 10/22/2019 | |
| C | E8-11 | 94% | 105.6 | 10.2% | 10/22/2019 | |
| C | E9-11 | 93% | 103.9 | 14.2% | 10/22/2019 | |
| C | E10-11 | 90% | 100.3 | 13.0% | 10/22/2019 | |
| | | | | | | |
| D | N1-14 | 95% | 110.2 | 12.7% | 10/25/2019 | |
| D | N2-14 | 97% | 113.2 | 9.0% | 10/25/2019 | |
| D | N3-14 | 98% | 114.3 | 9.1% | 10/25/2019 | |
| D | N4-14 | 98% | 114.5 | 9.9% | 10/25/2019 | |
| D | N5-14 | 93% | 107.9 | 9.4% | 10/25/2019 | |
| D | N6-14 | 94% | 108.9 | 9.5% | 10/25/2019 | |
| D | N7-14 | 97% | 113.0 | 8.7% | 10/25/2019 | |
| D | N8-14 | 98% | 114.0 | 9.1% | 10/25/2019 | |
| D | N9-14 | 96% | 111.8 | 9.6% | 10/25/2019 | |
| | | | | | | |
| C | E1-12 | 92% | 102.4 | 11.9% | 10/26/2019 | |
| C | E2-12 | 91% | 102.2 | 12.2% | 10/26/2019 | |
| C | E3-12 | 93% | 104.1 | 10.4% | 10/26/2019 | |
| C | E4-12 | 96% | 107.4 | 12.4% | 10/26/2019 | |
| C | E5-12 | 90% | 100.2 | 10.1% | 10/26/2019 | |
| C | E6-12 | 98% | 109.2 | 11.4% | 10/26/2019 | |
| C | E7-12 | 99% | 110.5 | 10.3% | 10/26/2019 | |
| C | E8-12 | 95% | 106.2 | 11.5% | 10/26/2019 | |
| C | E9-12 | 93% | 104.5 | 12.4% | 10/26/2019 | |
| C | E10-12 | 92% | 102.3 | 16.9% | 10/26/2019 | |

GORDON ENVIRONMENTAL PSC

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# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 8

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | N1-15 | 92% | 106.1 | 6.8% | 10/29/2019 | |
| B | N2-15 | 96% | 110.9 | 8.7% | 10/29/2019 | |
| B | N3-15 | 94% | 108.2 | 5.8% | 10/29/2019 | |
| B | N4-15 | 96% | 111.5 | 6.4% | 10/29/2019 | |
| B | N5-15 | 99% | 114.1 | 5.2% | 10/29/2019 | |
| B | N6-15 | 94% | 108.2 | 5.8% | 10/29/2019 | |
| B | N7-15 | 97% | 112.1 | 10.5% | 10/29/2019 | |
| B | N8-15 | 98% | 113.3 | 5.7% | 10/29/2019 | |
| B | N9-15 | 99% | 114.9 | 7.5% | 10/29/2019 | |
| | | | | | | |
| B | E1-13 | 97% | 112.1 | 6.8% | 10/29/2019 | |
| B | E2-13 | 96% | 110.8 | 7.6% | 10/29/2019 | |
| B | E3-13 | 97% | 112.0 | 11.7% | 10/29/2019 | |
| B | E4-13 | 99% | 114.8 | 7.9% | 10/29/2019 | |
| B | E5-13 | 96% | 111.2 | 9.9% | 10/29/2019 | |
| B | E6-13 | 97% | 111.6 | 9.7% | 10/29/2019 | |
| B | E7-13 | 92% | 106.9 | 7.0% | 10/29/2019 | |
| B | E8-13 | 99% | 114.1 | 7.7% | 10/29/2019 | |
| B | E9-13 | 92% | 106.0 | 9.7% | 10/29/2019 | |
| D | E10-13 | 90% | 105.0 | 12.0% | 10/29/2019 | |
| | | | | | | |
| B | N1-16 | 98% | 113.4 | 10.1% | 10/31/2019 | |
| B | N2-16 | 99% | 114.3 | 9.0% | 10/31/2019 | |
| B | N3-16 | 93% | 107.8 | 4.9% | 10/31/2019 | |
| B | N4-16 | 100% | 115.6 | 8.1% | 10/31/2019 | |
| B | N5-16 | 99% | 114.8 | 5.5% | 10/31/2019 | |
| B | N6-16 | 94% | 108.6 | 3.9% | 10/31/2019 | |
| B | N7-16 | 92% | 106.8 | 5.6% | 10/31/2019 | |
| B | N8-16 | 94% | 109.0 | 6.0% | 10/31/2019 | |
| B | N9-16 | 96% | 111.3 | 5.7% | 10/31/2019 | |
| | | | | | | |
| B | E1-14 | 99% | 114.2 | 6.3% | 10/31/2019 | |
| B | E2-14 | 95% | 109.5 | 6.5% | 10/31/2019 | |
| B | E3-14 | 98% | 113.3 | 6.4% | 10/31/2019 | |
| B | E4-14 | 94% | 108.9 | 5.0% | 10/31/2019 | |
| B | E5-14 | 98% | 113.3 | 6.3% | 10/31/2019 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 9

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray, Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | N1-17 | 98% | 112.8 | 8.4% | 11/6/2019 | |
| B | N2-17 | 99% | 113.9 | 10.4% | 11/6/2019 | |
| B | N3-17 | 99% | 114.8 | 11.5% | 11/6/2019 | |
| B | N4-17 | 97% | 111.9 | 9.8% | 11/6/2019 | |
| B | N5-17 | 99% | 114.9 | 8.5% | 11/6/2019 | |
| B | N6-17 | 99% | 114.4 | 10.6% | 11/6/2019 | |
| B | N7-17 | 95% | 109.7 | 6.1% | 11/6/2019 | |
| B | N8-17 | 99% | 114.7 | 11.1% | 11/6/2019 | |
| B | N9-17 | 91% | 105.3 | 5.9% | 11/6/2019 | |
| | | | | | | |
| B | E1-15 | 91% | 105.7 | 5.8% | 11/6/2019 | |
| B | E2-15 | 99% | 114.5 | 9.0% | 11/6/2019 | |
| B | E3-15 | 94% | 108.8 | 7.7% | 11/6/2019 | |
| B | E4-15 | 99% | 114.5 | 13.0% | 11/6/2019 | |
| B | E5-15 | 99% | 114.1 | 8.4% | 11/6/2019 | |
| | | | | | | |
| B | N1-18 | 99% | 114.5 | 14.9% | 11/8/2019 | |
| B | N2-18 | 97% | 112.1 | 12.4% | 11/8/2019 | |
| B | N3-18 | 94% | 108.1 | 11.0% | 11/8/2019 | |
| B | N4-18 | 97% | 112.0 | 10.8% | 11/8/2019 | |
| B | N5-18 | 91% | 104.7 | 8.7% | 11/8/2019 | |
| B | N6-18 | 99% | 114.4 | 10.6% | 11/8/2019 | |
| B | N7-18 | 93% | 107.5 | 10.3% | 11/8/2019 | |
| B | N8-18 | 96% | 110.6 | 6.6% | 11/8/2019 | |
| B | N9-18 | 90% | 104.4 | 11.0% | 11/8/2019 | |
| | | | | | | |
| D | E1-16 | 97% | 112.5 | 8.8% | 11/12/2019 | |
| D | E2-16 | 90% | 105.1 | 9.1% | 11/12/2019 | |
| D | E3-16 | 90% | 105.2 | 12.3% | 11/12/2019 | |
| D | E4-16 | 91% | 105.9 | 8.6% | 11/12/2019 | |
| | | | | | | |
| B | N1-19 | 91% | 105.0 | 5.3% | 11/12/2019 | |
| B | N2-19 | 94% | 108.1 | 6.4% | 11/12/2019 | |
| B | N3-19 | 92% | 106.4 | 6.8% | 11/12/2019 | |
| B | N4-19 | 94% | 108.2 | 8.5% | 11/12/2019 | |
| B | N5-19 | 94% | 108.8 | 8.1% | 11/12/2019 | |
| B | N6-19 | 90% | 104.4 | 8.5% | 11/12/2019 | |
| B | N7-19 | 91% | 104.9 | 7.2% | 11/12/2019 | |
| B | N8-19 | 92% | 106.3 | 6.8% | 11/12/2019 | |
| B | N9-19 | 91% | 104.9 | 7.0% | 11/12/2019 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 10

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | E1-17 | 93% | 107.4 | 9.3% | 11/13/2019 | |
| B | E2-17 | 93% | 107.5 | 7.9% | 11/13/2019 | |
| B | E3-17 | 93% | 107.2 | 8.3% | 11/13/2019 | |
| B | E4-17 | 92% | 106.3 | 15.5% | 11/13/2019 | |
| | | | | | | |
| B | N1-20 | 93% | 107.7 | 9.9% | 11/13/2019 | |
| B | N2-20 | 92% | 106.3 | 7.1% | 11/13/2019 | |
| B | N3-20 | 90% | 104.4 | 11.9% | 11/13/2019 | |
| B | N4-20 | 93% | 107.4 | 8.5% | 11/13/2019 | |
| B | N5-20 | 96% | 110.5 | 7.1% | 11/13/2019 | |
| B | N6-20 | 91% | 105.3 | 8.8% | 11/13/2019 | |
| B | N7-20 | 95% | 109.9 | 10.7% | 11/13/2019 | |
| B | N8-20 | 97% | 112.4 | 13.4% | 11/13/2019 | |
| B | N9-20 | 93% | 107.5 | 10.0% | 11/13/2019 | |
| | | | | | | |
| B | E1-18 | 96% | 111.0 | 8.0% | 11/13/2019 | |
| B | E2-18 | 90% | 104.5 | 9.4% | 11/13/2019 | |
| B | E3-18 | 90% | 104.5 | 7.8% | 11/13/2019 | |
| B | E4-18 | 92% | 106.6 | 14.7% | 11/13/2019 | |
| | | | | | | |
| B | N1-21 | 97% | 112.5 | 7.9% | 11/14/2019 | |
| B | N2-21 | 95% | 109.7 | 6.0% | 11/14/2019 | |
| B | N3-21 | 93% | 107.8 | 6.5% | 11/14/2019 | |
| B | N4-21 | 99% | 114.1 | 13.7% | 11/14/2019 | |
| B | N5-21 | 93% | 108.0 | 6.1% | 11/14/2019 | |
| B | N6-21 | 94% | 109.2 | 8.5% | 11/14/2019 | |
| B | N7-21 | 94% | 108.2 | 6.9% | 11/14/2019 | |
| B | N8-21 | 94% | 109.0 | 7.6% | 11/14/2019 | |
| B | N9-21 | 94% | 108.3 | 8.6% | 11/14/2019 | |
| | | | | | | |
| B | E1-19 | 98% | 112.9 | 9.2% | 11/14/2019 | |
| B | E2-19 | 96% | 110.5 | 5.5% | 11/14/2019 | |
| B | E3-19 | 94% | 108.6 | 7.8% | 11/14/2019 | |
| | | | | | | |
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# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Berm
**PROJECT NO.:** 10156019
**PAGE NO.:** 11

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray, Braden Belliveau

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| B | N1-22 | 98% | 113.0 | 6.4% | 11/20/2019 | |
| B | N2-22 | 95% | 109.6 | 8.7% | 11/20/2019 | |
| B | N3-22 | 93% | 107.9 | 7.9% | 11/20/2019 | |
| B | N4-22 | 94% | 108.2 | 8.4% | 11/20/2019 | |
| B | N5-22 | 94% | 108.9 | 8.2% | 11/20/2019 | |
| B | N6-22 | 95% | 109.3 | 8.5% | 11/20/2019 | |
| B | N7-22 | 94% | 108.6 | 7.3% | 11/20/2019 | |
| B | N8-22 | 97% | 112.1 | 7.1% | 11/20/2019 | |
| B | N9-22 | 94% | 108.9 | 9.1% | 11/20/2019 | |
| | | | | | | |
| B | E1-20 | 91% | 105.4 | 9.7% | 11/20/2019 | |
| B | E2-20 | 99% | 115.0 | 9.3% | 11/20/2019 | |
| B | E3-20 | 92% | 106.1 | 8.5% | 11/20/2019 | |

# APPENDIX A

## Geotechnical Soil Testing

A.4. Anchor Trench Density Test Results

GORDON ENVIRONMENTAL PSC

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505.867.6990

# FIELD COMPACTION TESTING FORM

**PROJECT NAME:** OWL Landfill Construction
**OWNER:** Oil Field Water Logistics
**PROJECT LOCATION:** Lea County, NM

**LOCATION:** Landfill Anchor Trench
**PROJECT NO.:** 10156019
**PAGE NO.:** 1

**TESTING INSTRUMENT:** IntroTek 3500 Xplorer®

**TECHNICIAN:** Don Gray

| SOIL CLASSIFICATION | | DESCRIPTION | REF STD PROCTOR | | 90% (PCF) | OPTIMAL MOISTURE |
|---|---|---|---|---|---|---|
| A | SM | Top Soil, Silty Sand-Brown | 116.3 pcf | 90% optimum | 104.7 | 9.6 % Moisture |
| B | GP-GM | Caliche 5-8' (Rock Corrected) | 115.6 pcf | 90% optimum | 104.0 | 9.2 % Moisture |
| C | GP-GM | Caliche ~12' | 111.8 pcf | 90% optimum | 100.6 | 7.0 % Moisture |
| D | GP-GM | Caliche ~12' | 116.4 pcf | 90% optimum | 104.8 | 10.1 % Moisture |

| Soil Type | TEST NUMBER | % RSP | DRY DENSGITY (PCF) | % MOISTURE | DATE COMPLETED | NOTES |
|---|---|---|---|---|---|---|
| C | 1 | 98% | 109.1 | 2.6% | 11/27/2019 | North Anchor Trench |
| C | 2 | 96% | 107.2 | 3.4% | 11/27/2019 | North Anchor Trench |
| C | 3 | 97% | 108.8 | 4.8% | 11/27/2019 | North Anchor Trench |
| C | 4 | 94% | 105.3 | 4.0% | 11/27/2019 | North Anchor Trench |
| C | 5 | 92% | 102.7 | 3.0% | 11/27/2019 | North Anchor Trench |
| C | 6 | 92% | 102.8 | 3.2% | 11/27/2019 | North Anchor Trench |
| C | 7 | 90% | 101.0 | 2.6% | 1/23/2020 | East Anchor Trench |
| C | 8 | 92% | 103.2 | 3.2% | 1/23/2020 | East Anchor Trench |
| C | 9 | 92% | 102.6 | 2.3% | 1/23/2020 | East Anchor Trench |
| C | 10 | 91% | 101.9 | 2.9% | 1/23/2020 | East Anchor Trench |
| C | 11 | 92% | 102.3 | 3.0% | 1/23/2020 | East Anchor Trench |
| C | 12 | 91% | 101.8 | 3,1% | 1/23/2020 | East Anchor Trench |

# APPENDIX A

## Geotechnical Soil Testing

A.5. PSL Hydraulic Conductivity

wood.

**Client:** Parkhill Smith & Cooper
4222 85th St
Lubbock, TX 79423

**Attn:** Carl King

**Project Name:** Oilfield Water Logistics - Landfill Services, NM 128 @ MM

Hobbs, NM

**Project Manager:** Hugo Carreon

**Report Date:** December 16, 2019

**Project #:** 19-519-02368
**Work Order #:** 3
**Lab #:** 2368-05L
**Sampled By:** Chris Wawrin
**Date Sampled:** 12/5/2019
**Visual Description of Material:** Red fine clean sand
**Sample Source:** Red fine clean sand

**SOILS / AGGREGATES**

**Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (ASTM D5084-16)**

**Method:** C

**Sample Preparation:** 80% of Density @ opt.
**Compaction Method:** Hand Compacted

| | | | |
|---|---|---|---|
| **Initial Diameter (cm):** | 6.02 | **Final Diameter (cm):** | 6.02 |
| **Initial Length (cm):** | 7.52 | **Final Length (cm):** | 7.52 |
| **Initial Moisture:** | 14.7% | **Final Moisture:** | 24.2% |
| **Initial Unit Weight (pcf):** | 92.7 | **Final Unit Weight (pcf):** | 92.7 |
| **Initial Volume (in³):** | 13.1 | **Final Volume (in³):** | 13.1 |
| **Initial Degree of Saturation:** | 57% | **Final Degree of Saturation:** | 94% |

**Permeant Liquid:** City Water
**Magnitude of Total Backpressure:** 83.0
**Effective Stress:** 2.0
**Range of Hydraulic Gradient Used:** -2.66 **To** -2.54
**Estimated Specific Gravity:** 2.4

| Time Interval (sec) | Corrected Hydraulic Conductivity (cm/sec) |
|---|---|
| 1 | 1.27E-03 |
| 1 | 1.28E-03 |
| 1 | 1.30E-03 |
| 1 | 1.31E-03 |
| **Average:** | 1.3E-03 |

**Note: All final sample dimensions are subject to sample deformation caused by exsolution of air in pore water and handling during removal from cell.**

Reviewed By:_____

**Distribution:** **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

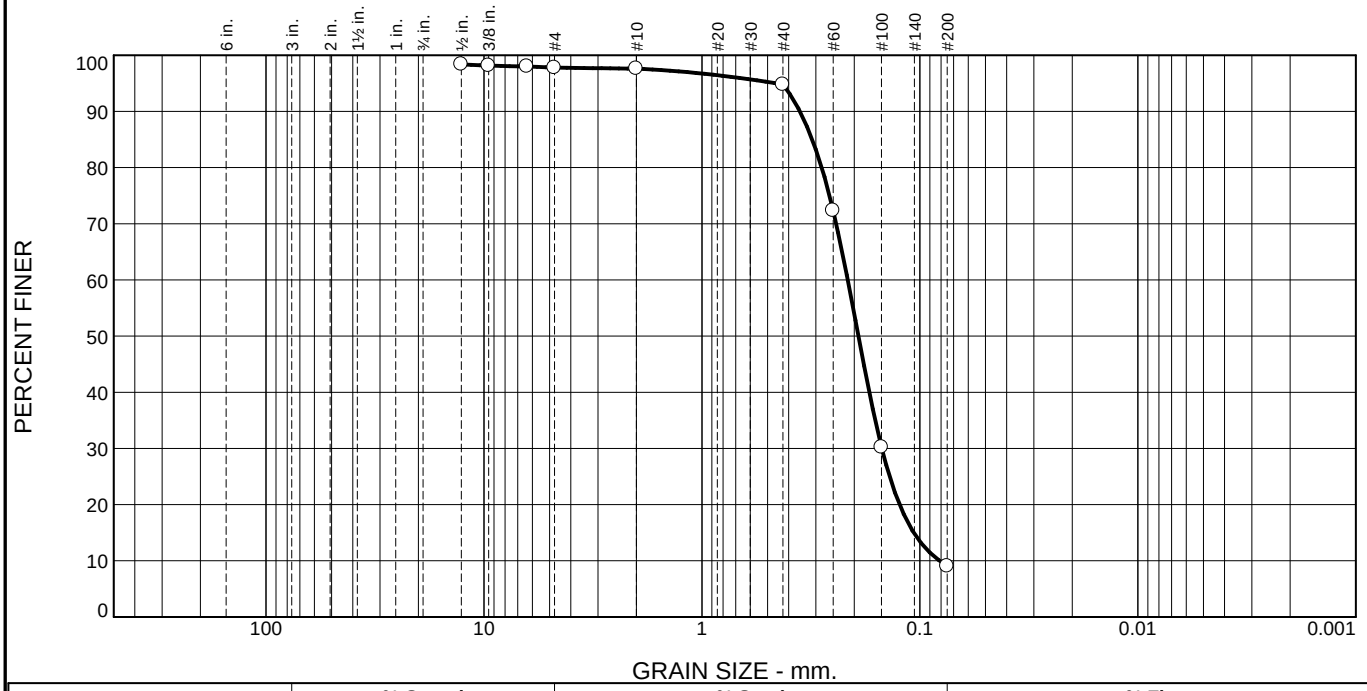
Wood.
8519 Jefferson NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371
www.woodplc.com

# APPENDIX A

## Geotechnical Soil Testing

A.6. PSL Grain Size Distribution Test Results

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.2 | 2.8 | 85.8 | 9.0 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 98.4 | | |
| 3/8 in. | 98.2 | | |
| 1/4 in. | 98.0 | | |
| #4 | 97.8 | | |
| #10 | 97.6 | | |
| #40 | 94.8 | | |
| #60 | 72.3 | | |
| #100 | 30.2 | | |
| #200 | 9.0 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3552 $D_{85}$= 0.3118 $D_{60}$= 0.2144
$D_{50}$= 0.1914 $D_{30}$= 0.1495 $D_{15}$= 0.1068
$D_{10}$= 0.0812 $C_u$= 2.64 $C_c$= 1.28

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-1

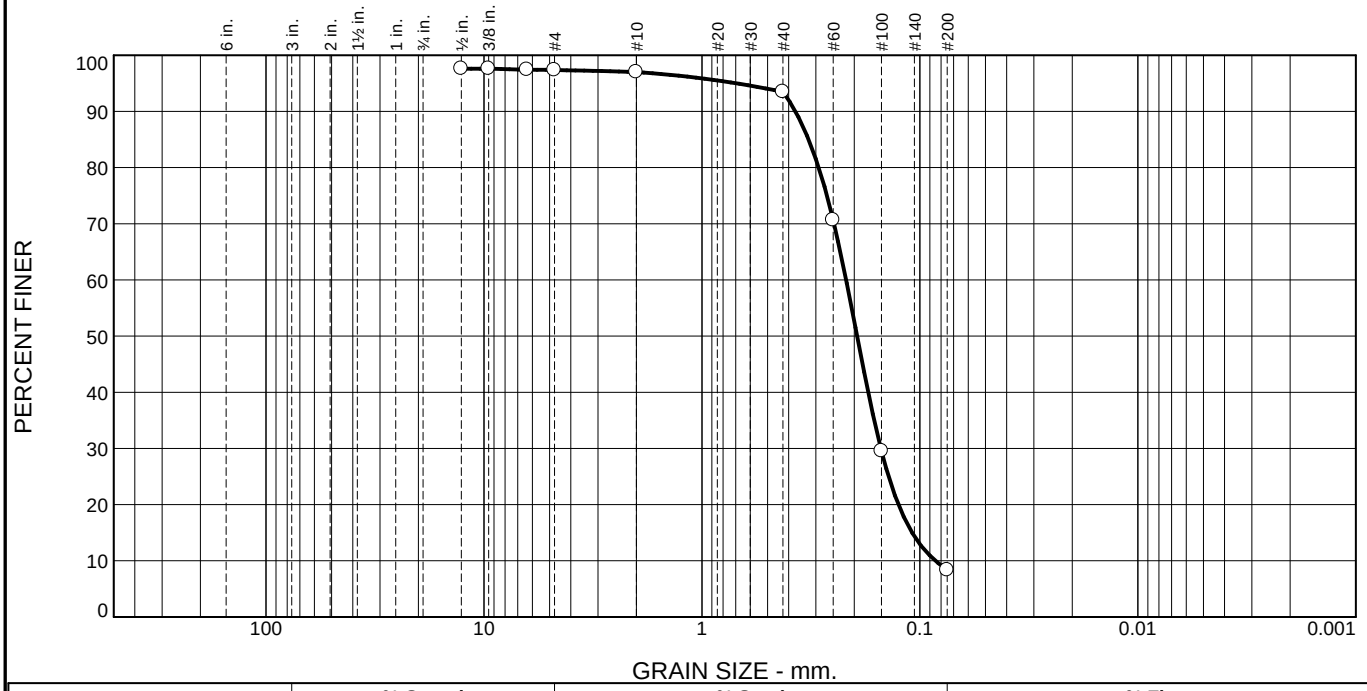
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-1

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.4 | 3.5 | 85.2 | 8.3 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 97.6 | | |
| 3/8 in. | 97.6 | | |
| 1/4 in. | 97.4 | | |
| #4 | 97.4 | | |
| #10 | 97.0 | | |
| #40 | 93.5 | | |
| #60 | 70.7 | | |
| #100 | 29.5 | | |
| #200 | 8.3 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3726 $D_{85}$= 0.3241 $D_{60}$= 0.2181
$D_{50}$= 0.1941 $D_{30}$= 0.1510 $D_{15}$= 0.1086
$D_{10}$= 0.0848 $C_u$= 2.57 $C_c$= 1.23

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-2

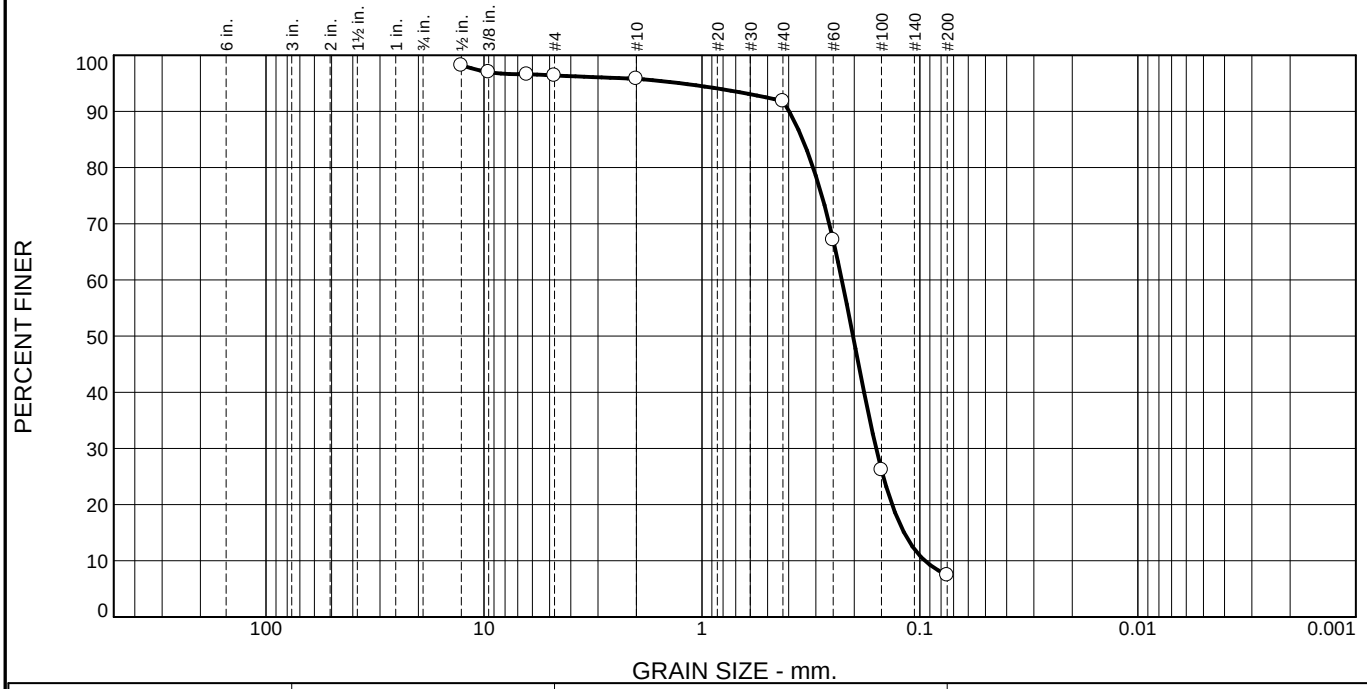
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-2

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.6 | 4.0 | 84.4 | 7.4 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 98.2 | | |
| 3/8 in. | 97.0 | | |
| 1/4 in. | 96.6 | | |
| #4 | 96.4 | | |
| #10 | 95.8 | | |
| #40 | 91.8 | | |
| #60 | 67.1 | | |
| #100 | 26.2 | | |
| #200 | 7.4 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3980 $D_{85}$= 0.3450 $D_{60}$= 0.2281
$D_{50}$= 0.2027 $D_{30}$= 0.1587 $D_{15}$= 0.1182
$D_{10}$= 0.0949 $C_u$= 2.40 $C_c$= 1.16

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-3

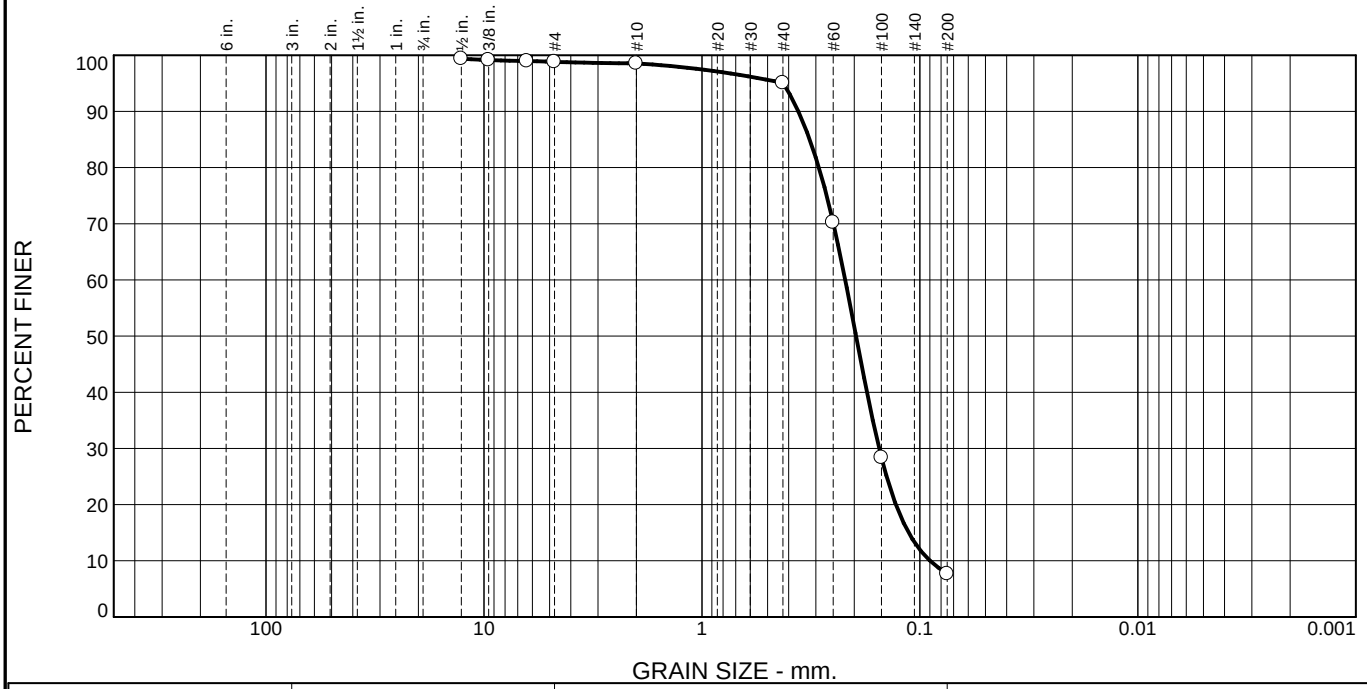
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-3

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.3 | 3.4 | 87.4 | 7.7 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 99.4 | | |
| 3/8 in. | 99.1 | | |
| 1/4 in. | 99.0 | | |
| #4 | 98.8 | | |
| #10 | 98.5 | | |
| #40 | 95.1 | | |
| #60 | 70.2 | | |
| #100 | 28.3 | | |
| #200 | 7.7 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3611 $D_{85}$= 0.3203 $D_{60}$= 0.2202
$D_{50}$= 0.1963 $D_{30}$= 0.1537 $D_{15}$= 0.1127
$D_{10}$= 0.0898 $C_u$= 2.45 $C_c$= 1.19

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-4

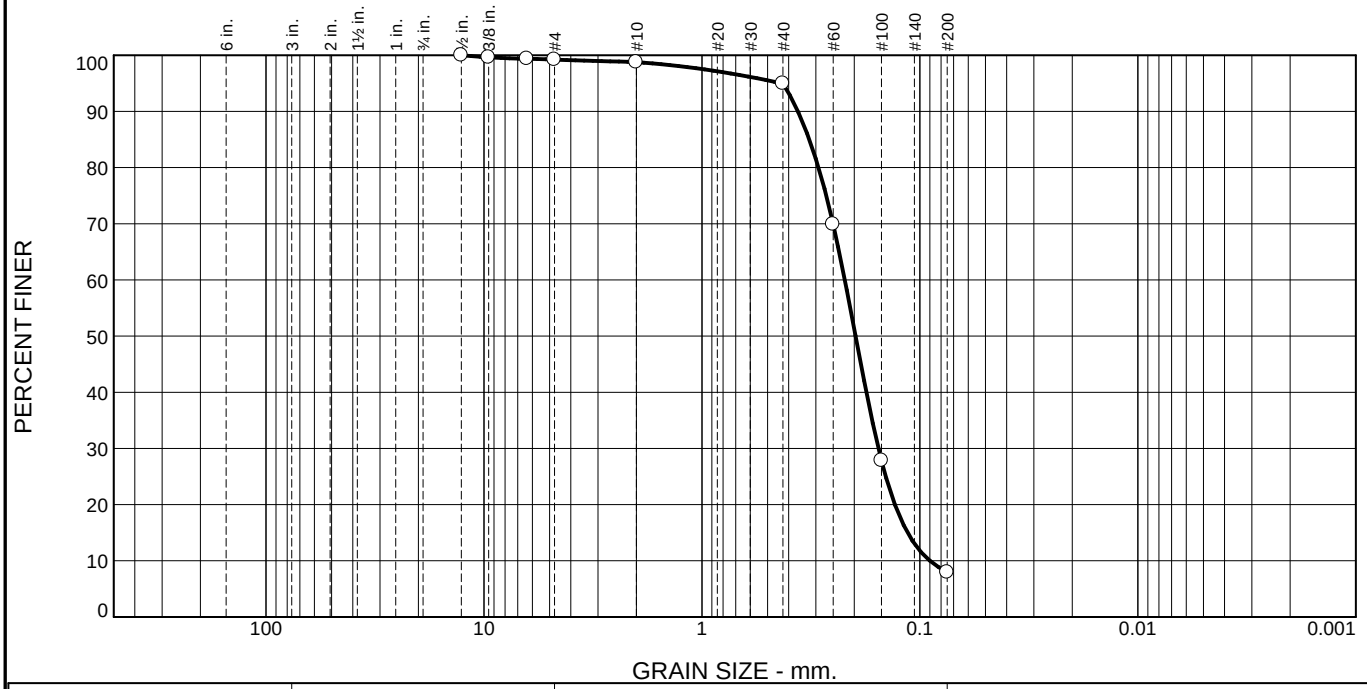
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-4

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.8 | 0.4 | 3.9 | 87.0 | 7.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 99.6 | | |
| 1/4 in. | 99.4 | | |
| #4 | 99.2 | | |
| #10 | 98.8 | | |
| #40 | 94.9 | | |
| #60 | 69.9 | | |
| #100 | 27.8 | | |
| #200 | 7.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3627 $D_{85}$= 0.3216 $D_{60}$= 0.2211
$D_{50}$= 0.1974 $D_{30}$= 0.1549 $D_{15}$= 0.1140
$D_{10}$= 0.0899 $C_u$= 2.46 $C_c$= 1.21

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-5

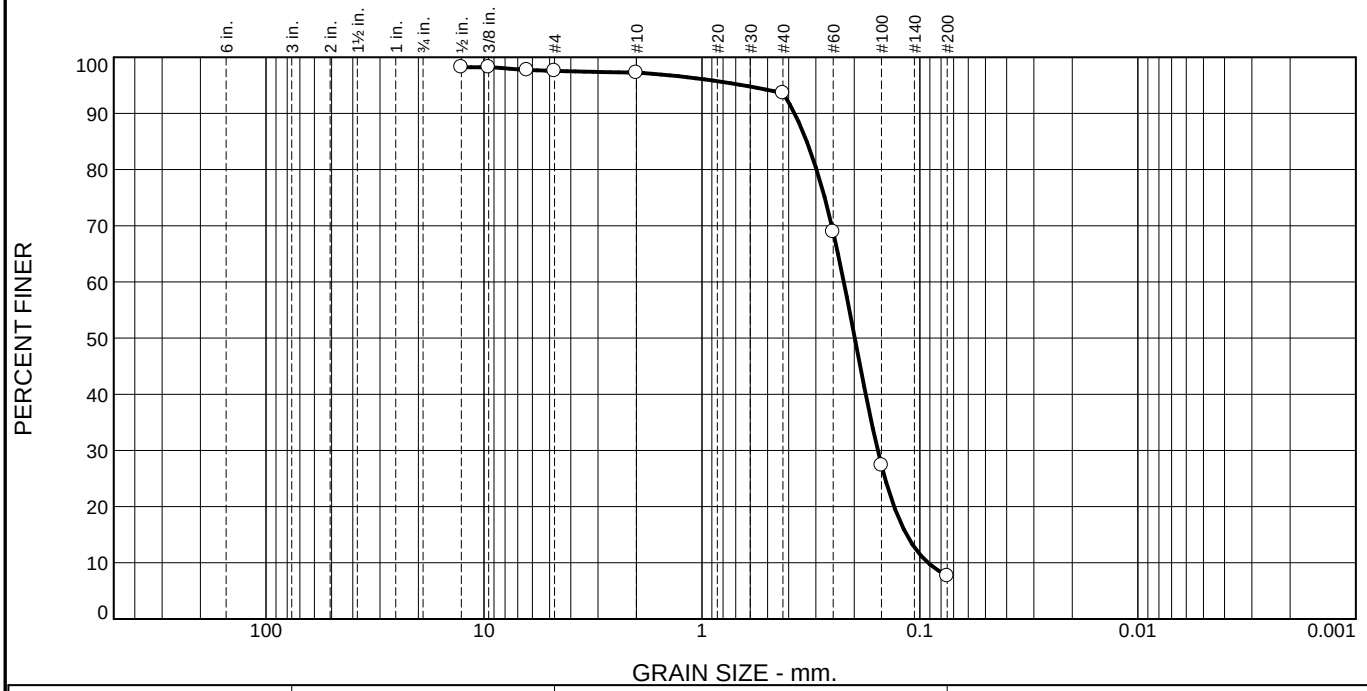
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-5

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.3 | 3.7 | 85.9 | 7.7 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 98.2 | | |
| 3/8 in. | 98.2 | | |
| 1/4 in. | 97.7 | | |
| #4 | 97.6 | | |
| #10 | 97.3 | | |
| #40 | 93.6 | | |
| #60 | 68.9 | | |
| #100 | 27.4 | | |
| #200 | 7.7 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3760 $D_{85}$= 0.3302 $D_{60}$= 0.2234
$D_{50}$= 0.1990 $D_{30}$= 0.1560 $D_{15}$= 0.1152
$D_{10}$= 0.0917 $C_u$= 2.44 $C_c$= 1.19

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-6

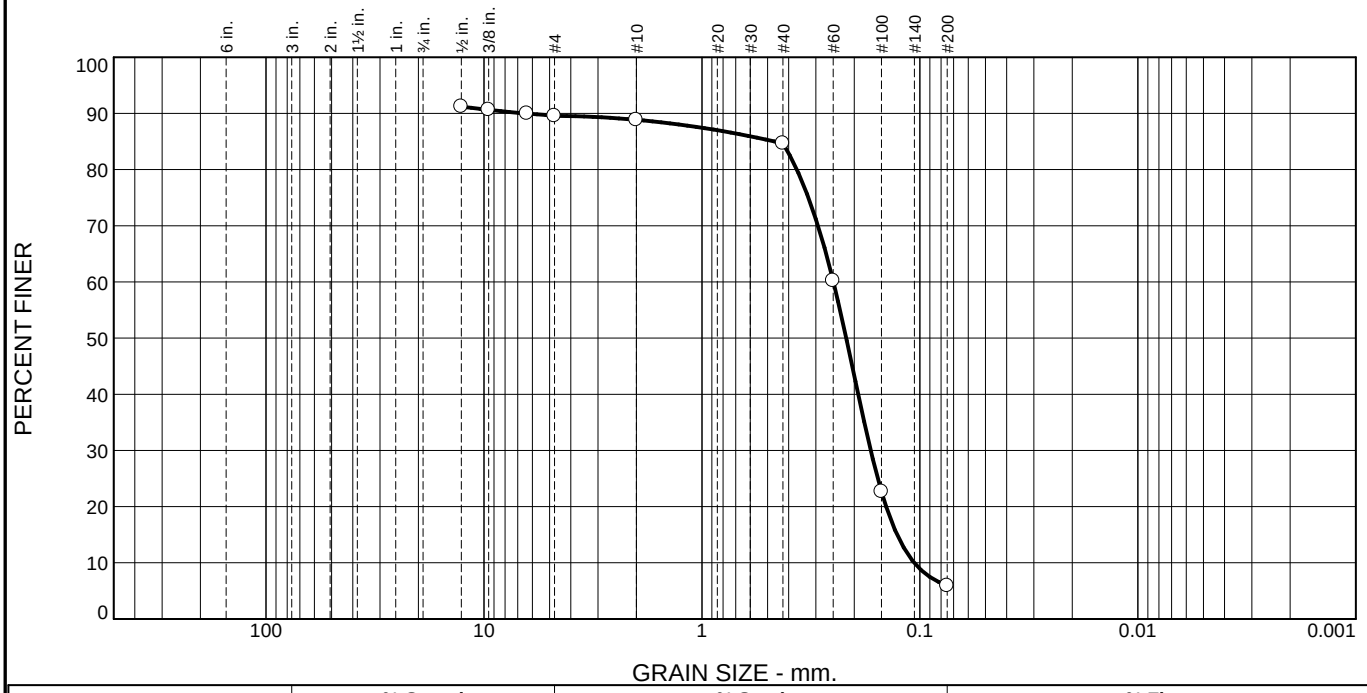
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-6

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.7 | 4.2 | 78.8 | 5.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 91.2 | | |
| 3/8 in. | 90.6 | | |
| 1/4 in. | 90.0 | | |
| #4 | 89.6 | | |
| #10 | 88.9 | | |
| #40 | 84.7 | | |
| #60 | 60.2 | | |
| #100 | 22.7 | | |
| #200 | 5.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 6.4631 $D_{85}$= 0.4634 $D_{60}$= 0.2493
$D_{50}$= 0.2178 $D_{30}$= 0.1680 $D_{15}$= 0.1272
$D_{10}$= 0.1063 $C_u$= 2.34 $C_c$= 1.07

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-7

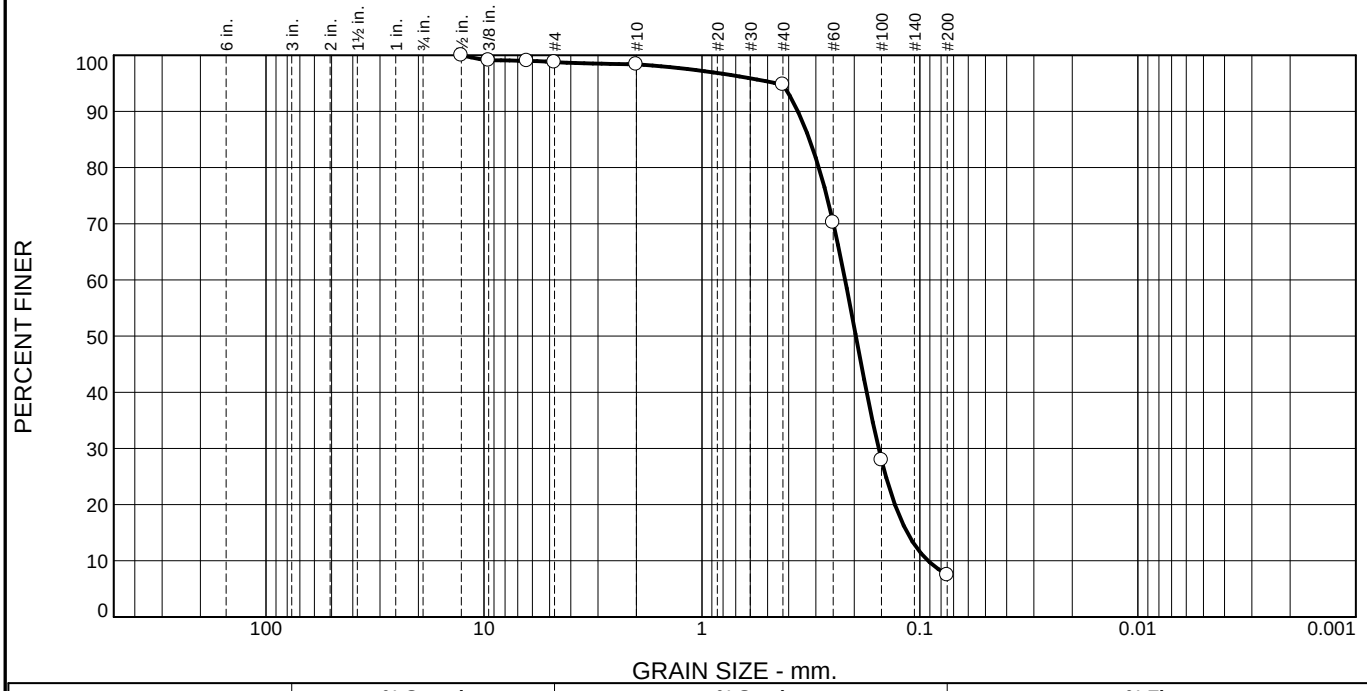
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-7

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.2 | 0.4 | 3.6 | 87.3 | 7.5 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 99.1 | | |
| 1/4 in. | 99.0 | | |
| #4 | 98.8 | | |
| #10 | 98.4 | | |
| #40 | 94.8 | | |
| #60 | 70.2 | | |
| #100 | 27.9 | | |
| #200 | 7.5 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3629 $D_{85}$= 0.3208 $D_{60}$= 0.2203
$D_{50}$= 0.1967 $D_{30}$= 0.1545 $D_{15}$= 0.1143
$D_{10}$= 0.0917 $C_u$= 2.40 $C_c$= 1.18

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-8

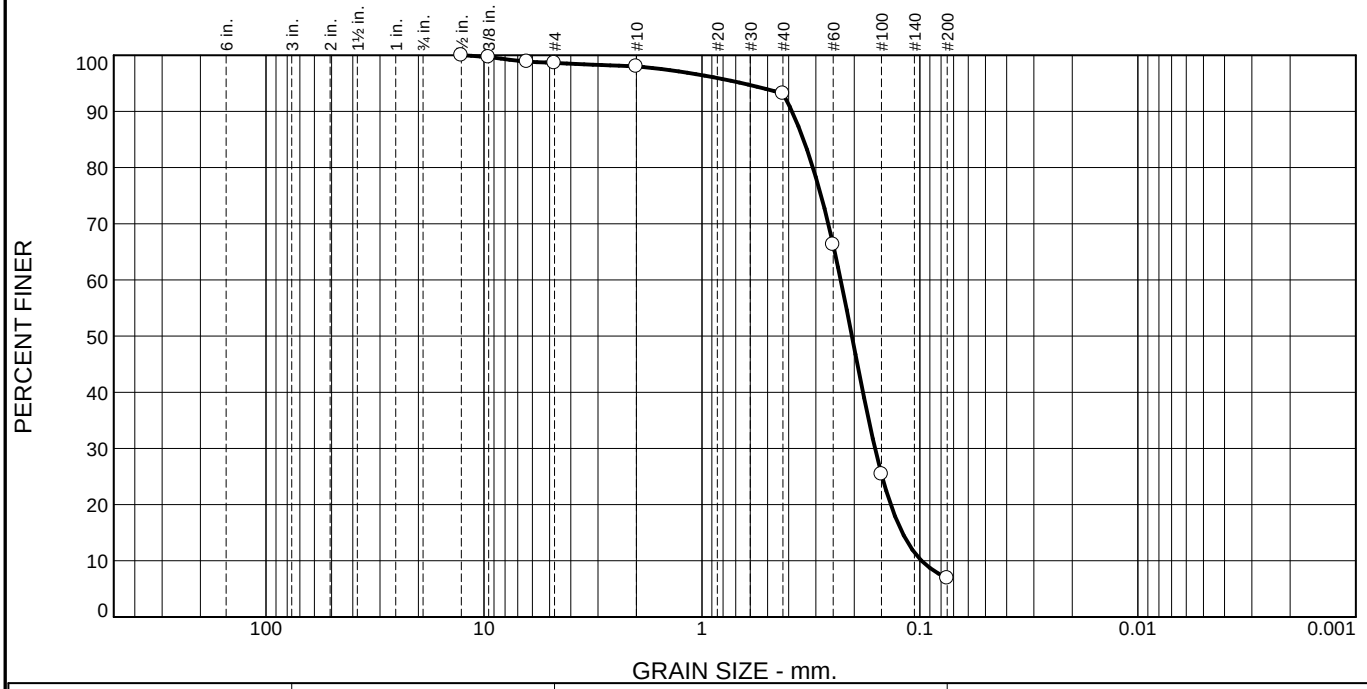
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-8

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.4 | 0.6 | 4.8 | 86.3 | 6.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 99.7 | | |
| 1/4 in. | 98.9 | | |
| #4 | 98.6 | | |
| #10 | 98.0 | | |
| #40 | 93.2 | | |
| #60 | 66.3 | | |
| #100 | 25.4 | | |
| #200 | 6.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3863 $D_{85}$= 0.3421 $D_{60}$= 0.2309
$D_{50}$= 0.2051 $D_{30}$= 0.1606 $D_{15}$= 0.1204
$D_{10}$= 0.0983 $C_u$= 2.35 $C_c$= 1.14

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-9

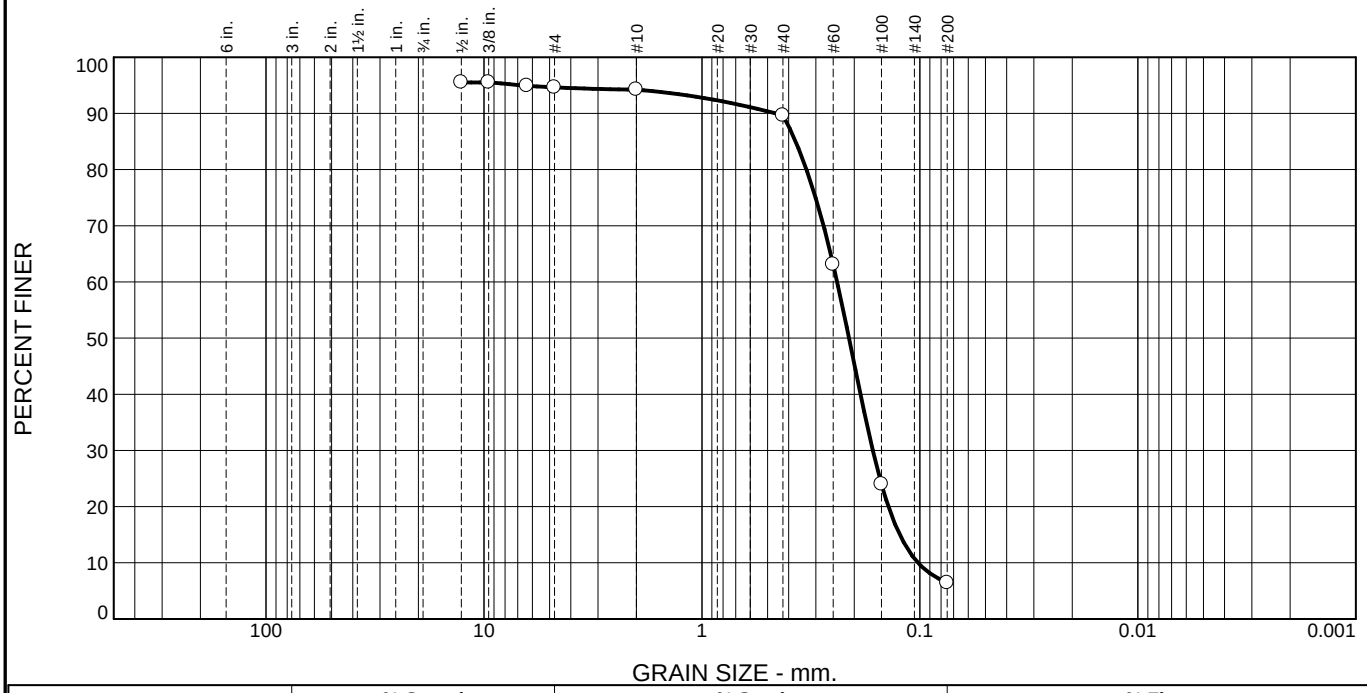
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-9

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.4 | 4.5 | 83.3 | 6.4 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 95.5 | | |
| 3/8 in. | 95.5 | | |
| 1/4 in. | 94.9 | | |
| #4 | 94.6 | | |
| #10 | 94.2 | | |
| #40 | 89.7 | | |
| #60 | 63.1 | | |
| #100 | 24.0 | | |
| #200 | 6.4 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4586 $D_{85}$= 0.3717 $D_{60}$= 0.2398
$D_{50}$= 0.2116 $D_{30}$= 0.1644 $D_{15}$= 0.1238
$D_{10}$= 0.1021 $C_u$= 2.35 $C_c$= 1.10

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-10

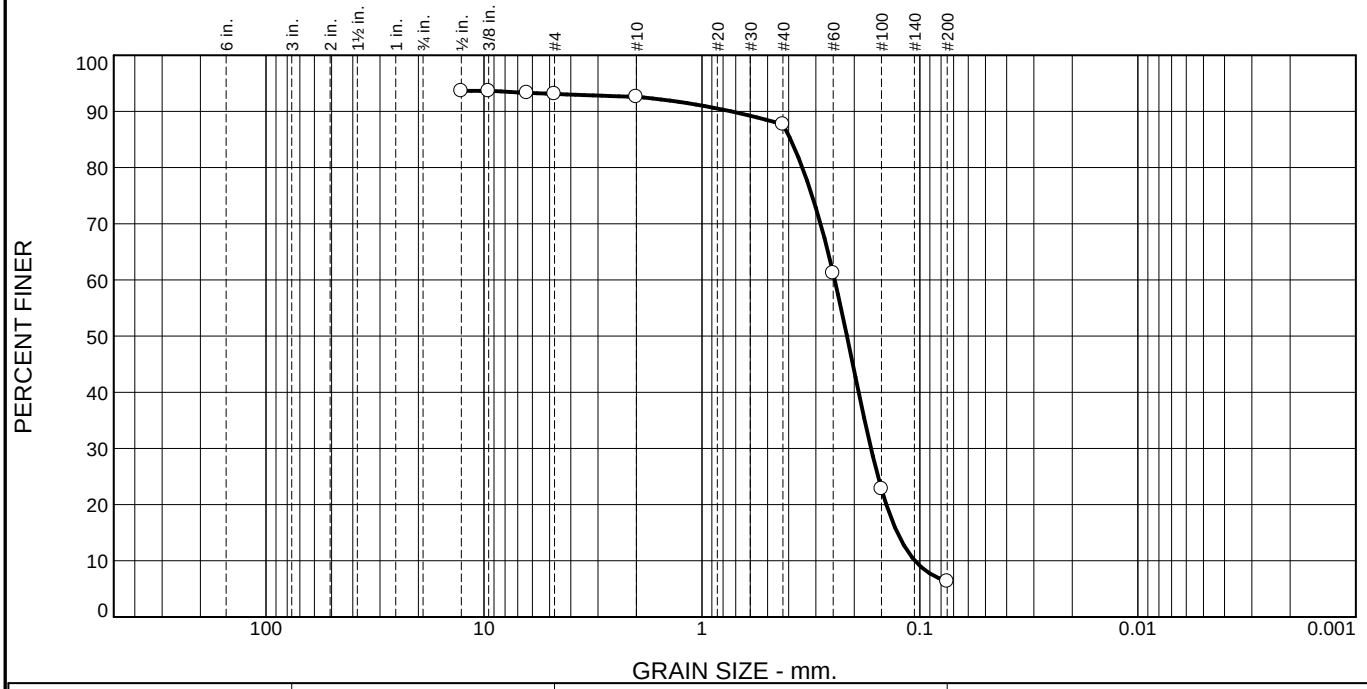
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-10

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.5 | 4.9 | 81.4 | 6.3 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 93.7 | | |
| 3/8 in. | 93.7 | | |
| 1/4 in. | 93.3 | | |
| #4 | 93.1 | | |
| #10 | 92.6 | | |
| #40 | 87.7 | | |
| #60 | 61.2 | | |
| #100 | 22.8 | | |
| #200 | 6.3 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.7330 $D_{85}$= 0.3919 $D_{60}$= 0.2459
$D_{50}$= 0.2161 $D_{30}$= 0.1675 $D_{15}$= 0.1269
$D_{10}$= 0.1055 $C_u$= 2.33 $C_c$= 1.08

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-11

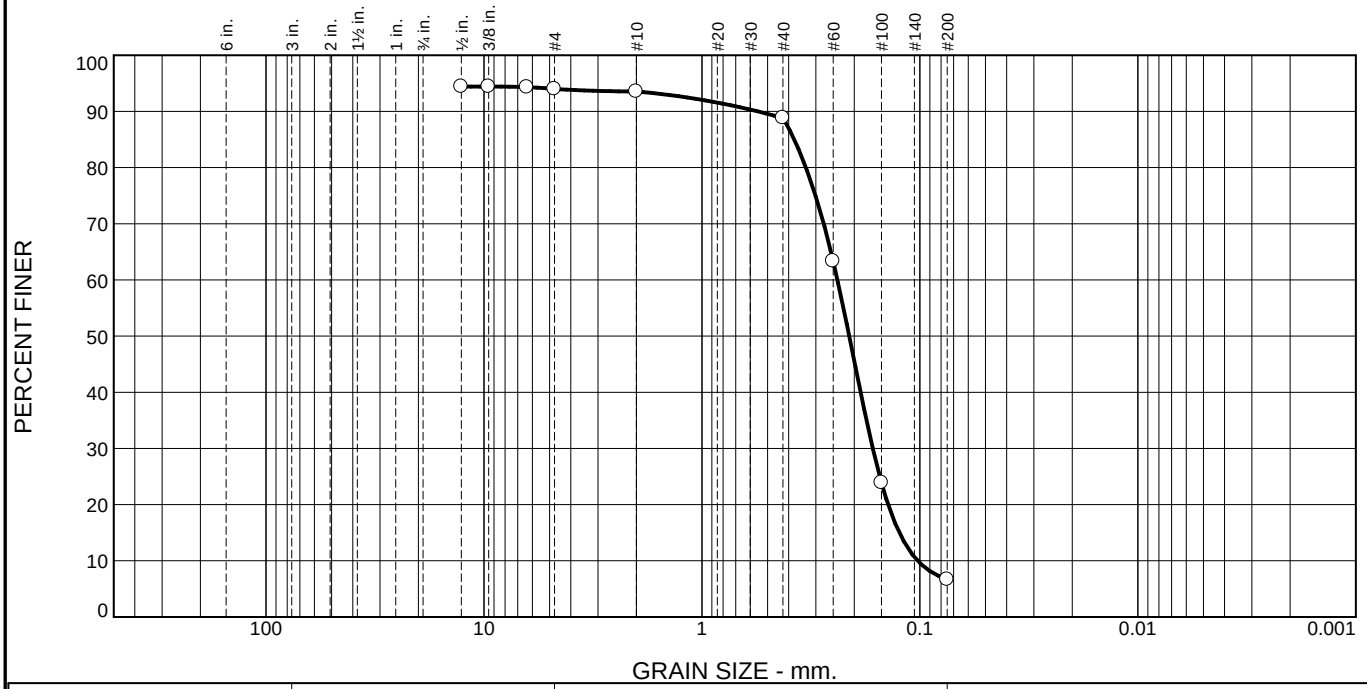
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-11

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.5 | 4.7 | 82.2 | 6.6 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 94.4 | | |
| 3/8 in. | 94.4 | | |
| 1/4 in. | 94.3 | | |
| #4 | 94.0 | | |
| #10 | 93.5 | | |
| #40 | 88.8 | | |
| #60 | 63.3 | | |
| #100 | 23.9 | | |
| #200 | 6.6 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.5542 $D_{85}$= 0.3771 $D_{60}$= 0.2390
$D_{50}$= 0.2110 $D_{30}$= 0.1644 $D_{15}$= 0.1243
$D_{10}$= 0.1025 $C_u$= 2.33 $C_c$= 1.10

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** East of Landfill
**Sample Number:** E-12

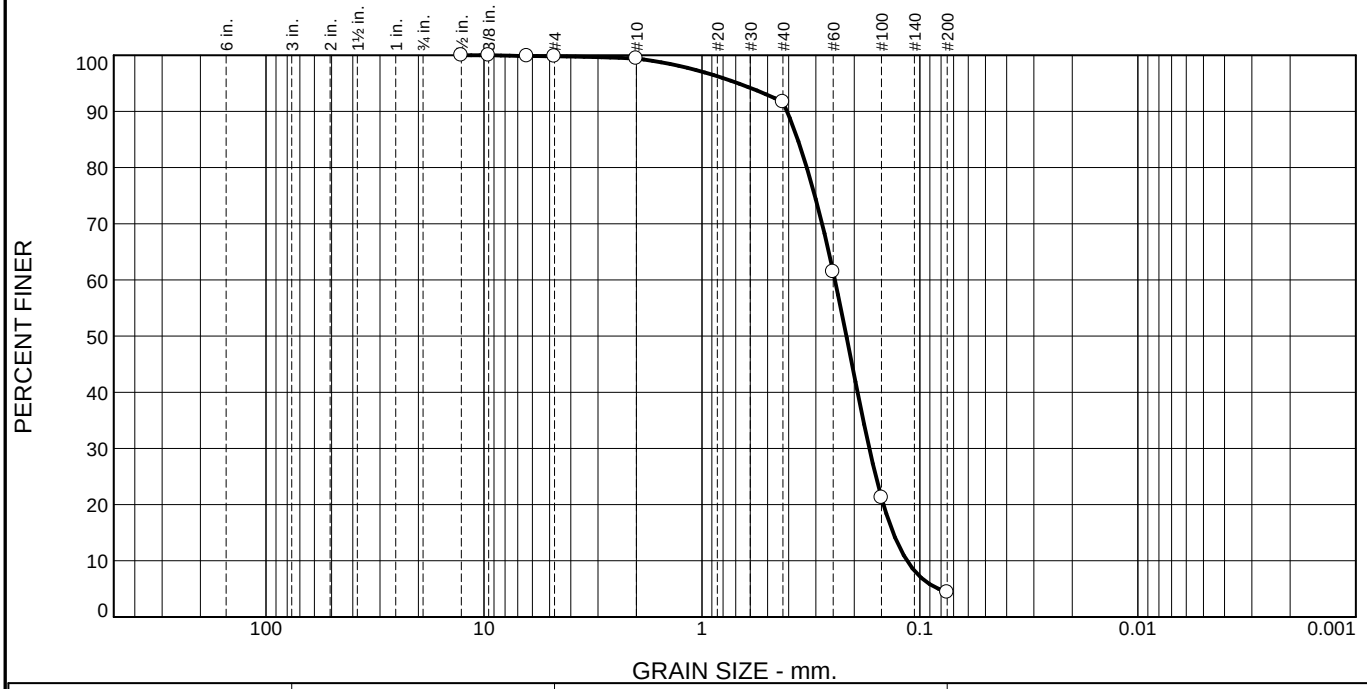
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** E-12

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.2 | 0.4 | 7.7 | 87.3 | 4.4 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 99.9 | | |
| #4 | 99.8 | | |
| #10 | 99.4 | | |
| #40 | 91.7 | | |
| #60 | 61.5 | | |
| #100 | 21.2 | | |
| #200 | 4.4 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4069 $D_{85}$= 0.3635 $D_{60}$= 0.2454
$D_{50}$= 0.2174 $D_{30}$= 0.1706 $D_{15}$= 0.1327
$D_{10}$= 0.1146 $C_u$= 2.14 $C_c$= 1.03

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-1

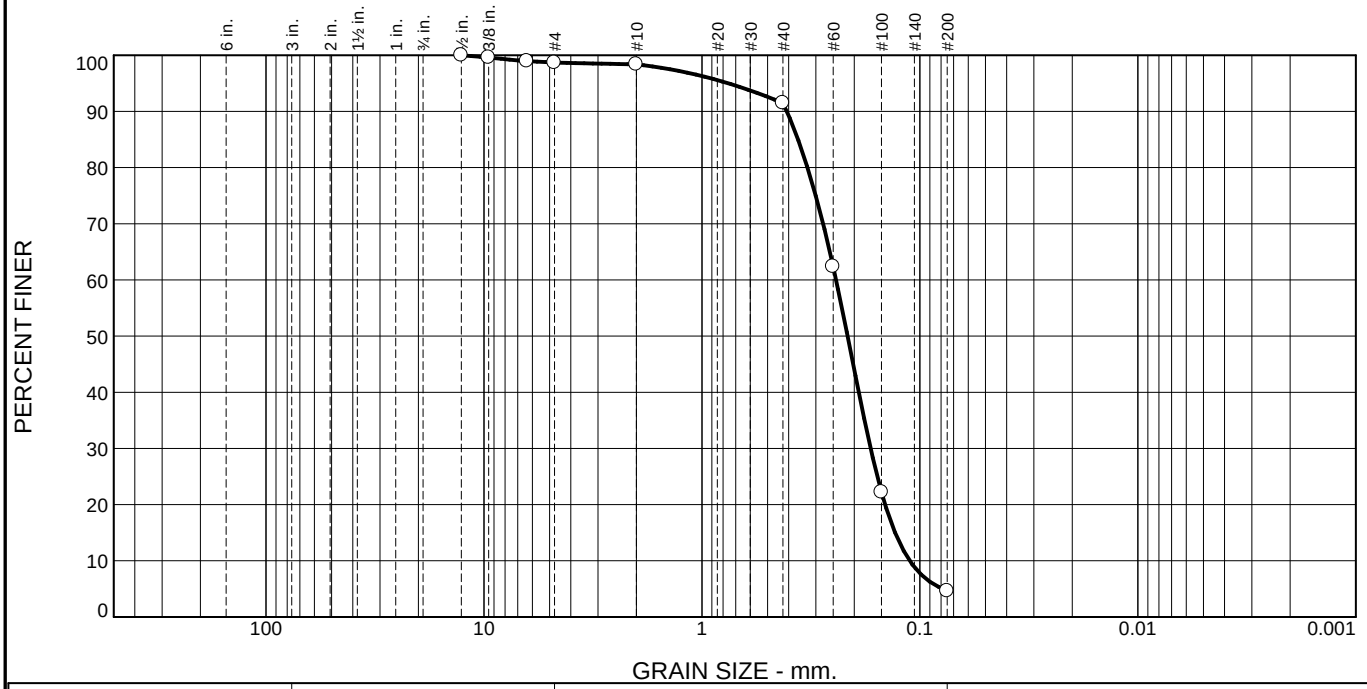
**Date Sampled:** 12/9/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-1

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.3 | 0.3 | 6.9 | 86.9 | 4.6 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 99.6 | | |
| 1/4 in. | 99.0 | | |
| #4 | 98.7 | | |
| #10 | 98.4 | | |
| #40 | 91.5 | | |
| #60 | 62.4 | | |
| #100 | 22.2 | | |
| #200 | 4.6 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4080 $D_{85}$= 0.3623 $D_{60}$= 0.2425
$D_{50}$= 0.2147 $D_{30}$= 0.1682 $D_{15}$= 0.1299
$D_{10}$= 0.1114 $C_u$= 2.18 $C_c$= 1.05

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-2

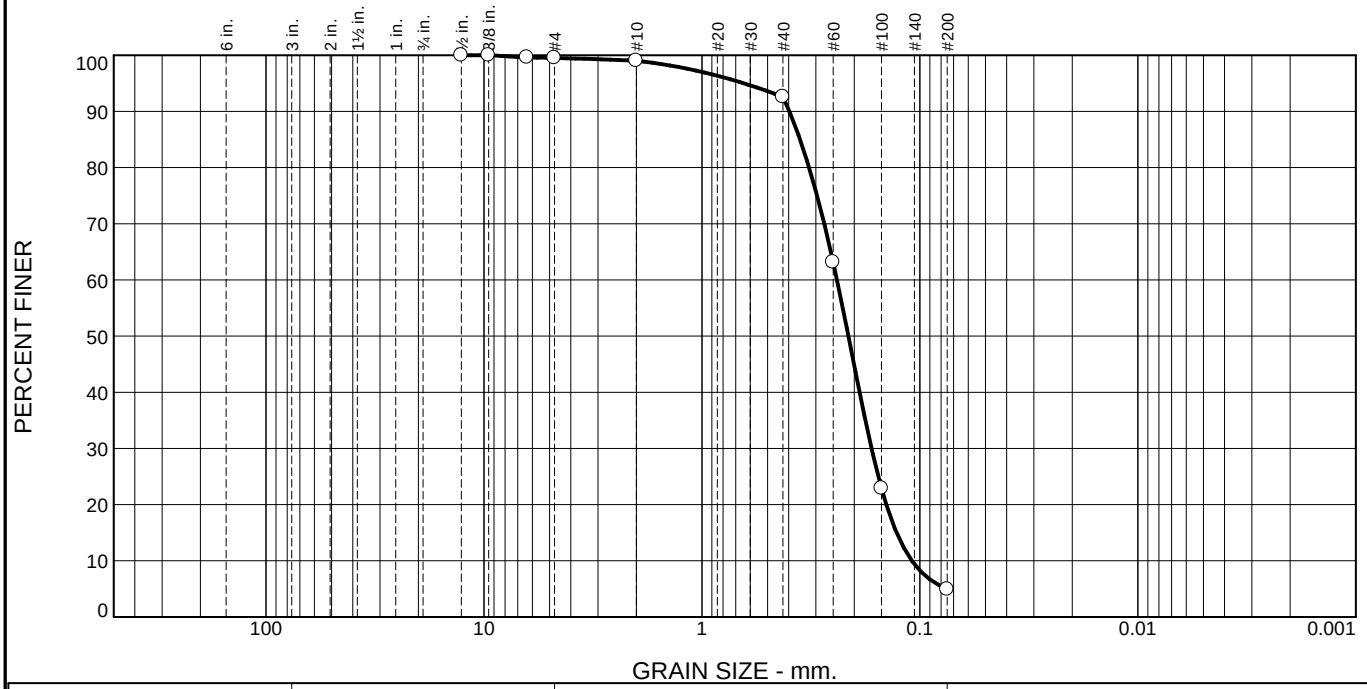
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-2

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.5 | 0.5 | 6.4 | 87.7 | 4.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 99.6 | | |
| #4 | 99.5 | | |
| #10 | 99.0 | | |
| #40 | 92.6 | | |
| #60 | 63.1 | | |
| #100 | 22.9 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3969 $D_{85}$= 0.3547 $D_{60}$= 0.2402
$D_{50}$= 0.2129 $D_{30}$= 0.1666 $D_{15}$= 0.1279
$D_{10}$= 0.1089 $C_u$= 2.21 $C_c$= 1.06

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-3

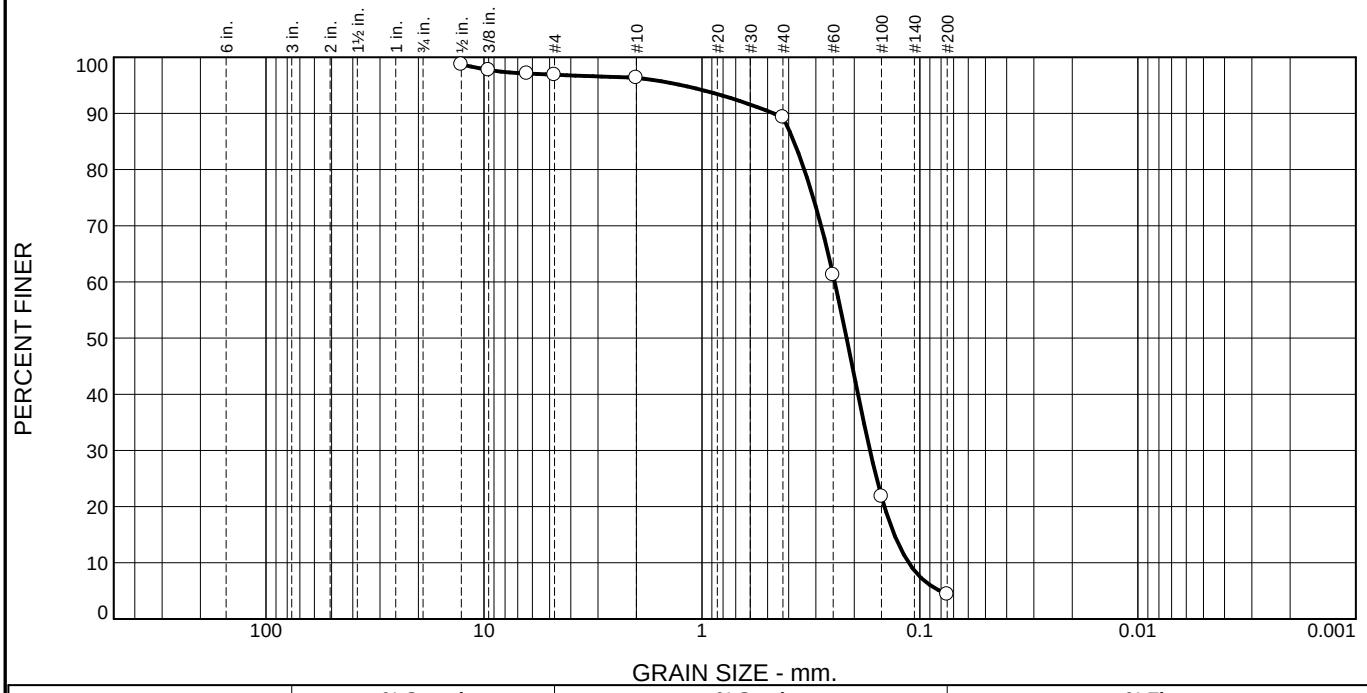
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-3

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.5 | 7.1 | 84.9 | 4.4 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 98.7 | | |
| 3/8 in. | 97.7 | | |
| 1/4 in. | 97.1 | | |
| #4 | 96.9 | | |
| #10 | 96.4 | | |
| #40 | 89.3 | | |
| #60 | 61.2 | | |
| #100 | 21.8 | | |
| #200 | 4.4 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4686 $D_{85}$= 0.3786 $D_{60}$= 0.2459
$D_{50}$= 0.2170 $D_{30}$= 0.1694 $D_{15}$= 0.1310
$D_{10}$= 0.1126 $C_u$= 2.18 $C_c$= 1.04

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-4

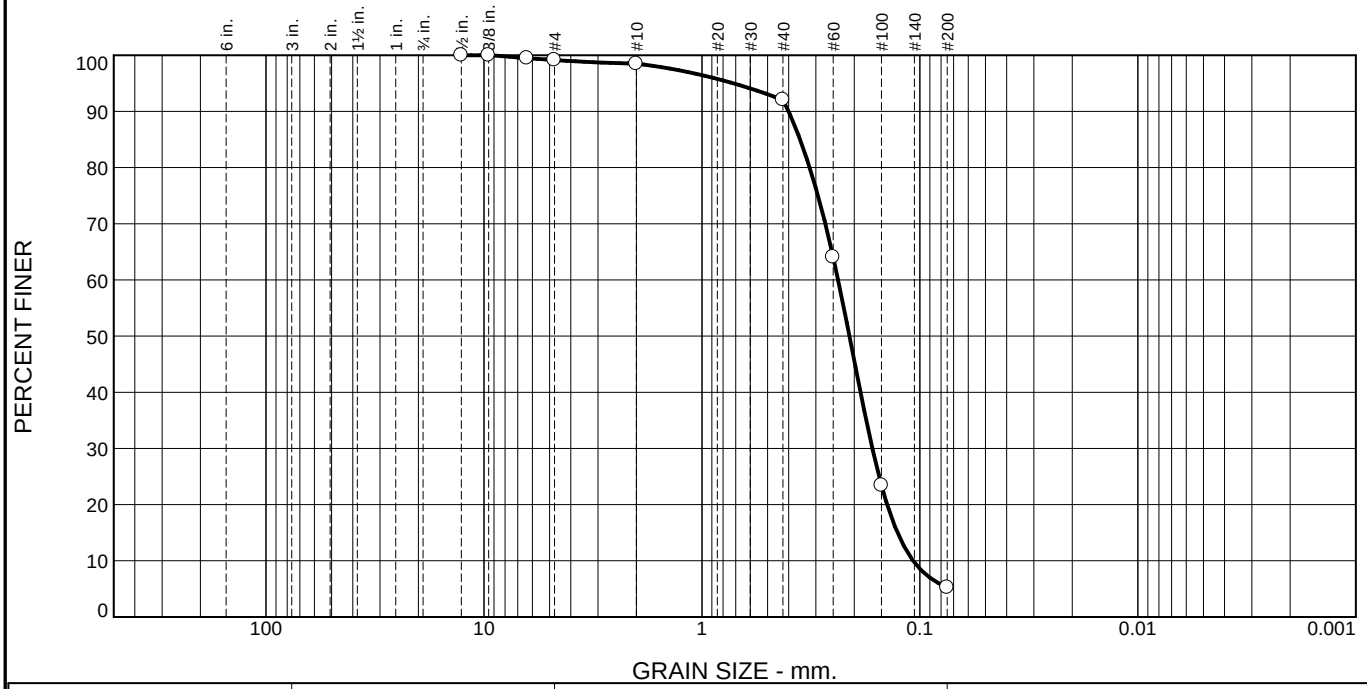
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-4

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.9 | 0.6 | 6.4 | 86.9 | 5.2 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 99.5 | | |
| #4 | 99.1 | | |
| #10 | 98.5 | | |
| #40 | 92.1 | | |
| #60 | 64.1 | | |
| #100 | 23.4 | | |
| #200 | 5.2 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4005 $D_{85}$= 0.3545 $D_{60}$= 0.2373
$D_{50}$= 0.2106 $D_{30}$= 0.1652 $D_{15}$= 0.1267
$D_{10}$= 0.1075 $C_u$= 2.21 $C_c$= 1.07

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-5

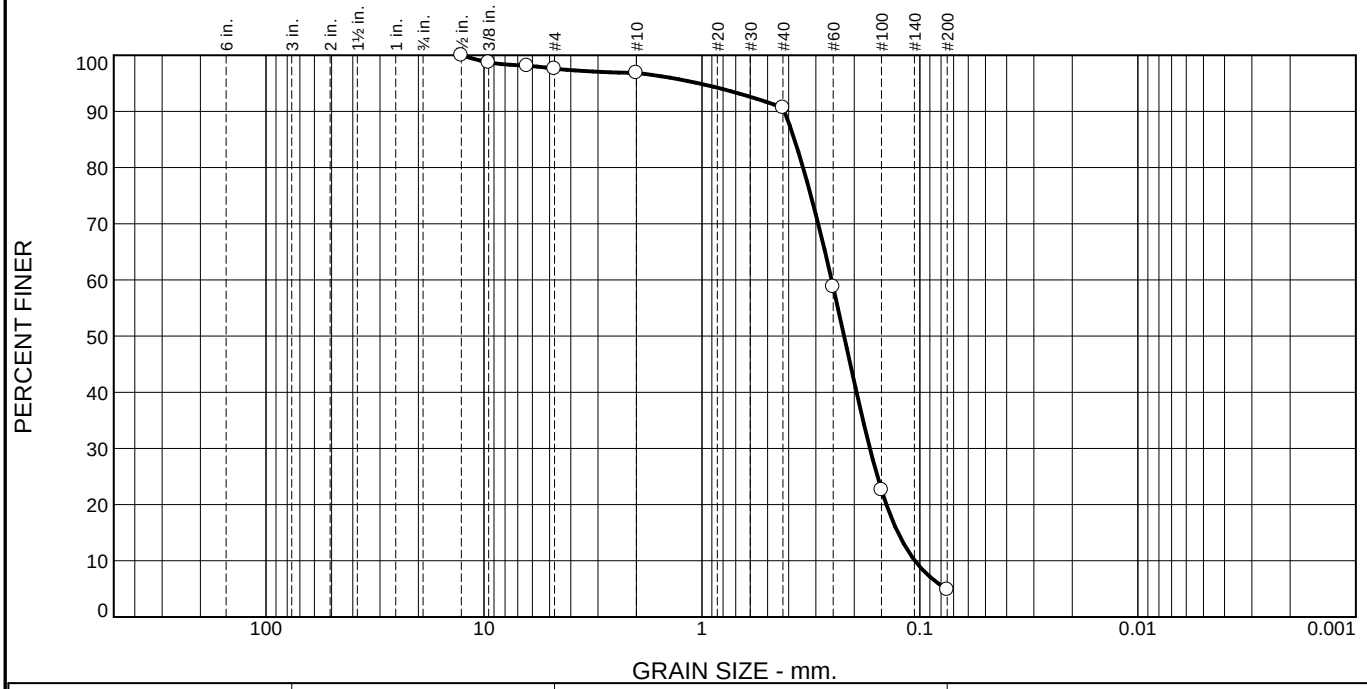
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-5

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.4 | 0.7 | 6.2 | 85.8 | 4.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 98.7 | | |
| 1/4 in. | 98.1 | | |
| #4 | 97.6 | | |
| #10 | 96.9 | | |
| #40 | 90.7 | | |
| #60 | 58.8 | | |
| #100 | 22.6 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4183 $D_{85}$= 0.3763 $D_{60}$= 0.2542
$D_{50}$= 0.2227 $D_{30}$= 0.1696 $D_{15}$= 0.1261
$D_{10}$= 0.1055 $C_u$= 2.41 $C_c$= 1.07

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-6

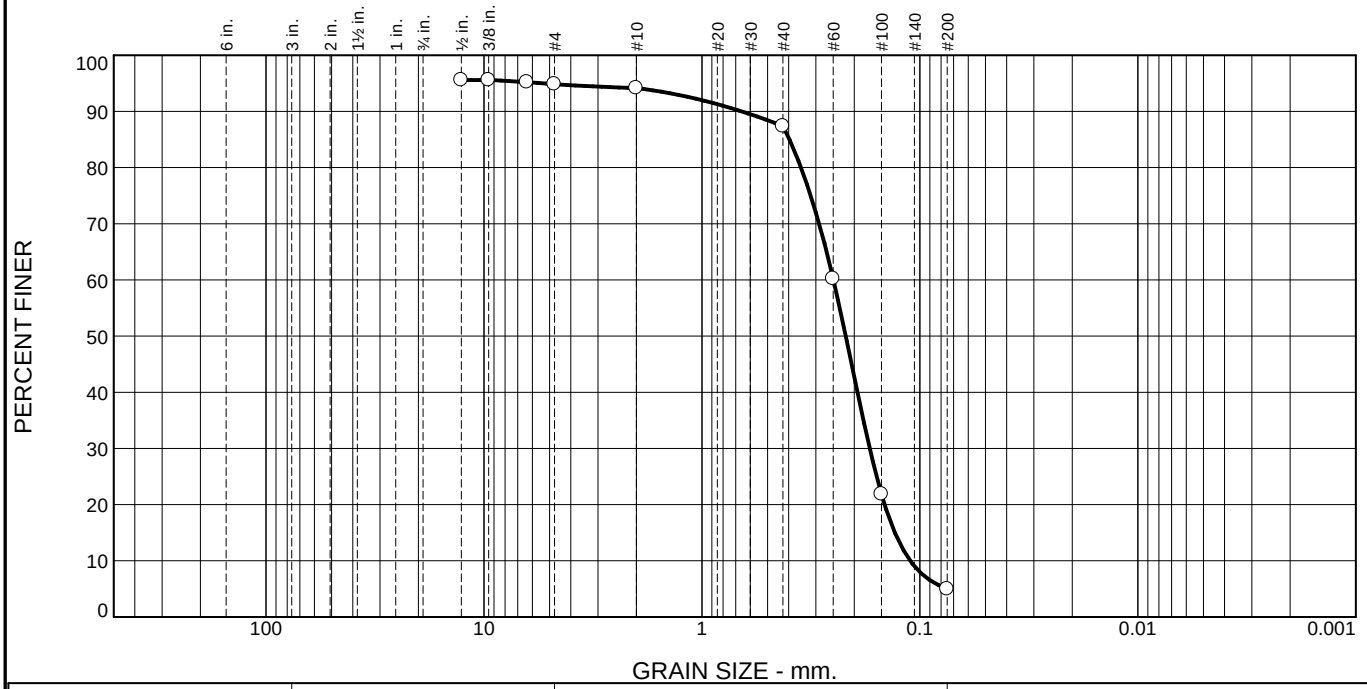
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-6

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.6 | 6.8 | 82.4 | 5.0 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 95.6 | | |
| 3/8 in. | 95.6 | | |
| 1/4 in. | 95.2 | | |
| #4 | 94.8 | | |
| #10 | 94.2 | | |
| #40 | 87.4 | | |
| #60 | 60.2 | | |
| #100 | 21.8 | | |
| #200 | 5.0 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.6561 $D_{85}$= 0.3967 $D_{60}$= 0.2493
$D_{50}$= 0.2189 $D_{30}$= 0.1698 $D_{15}$= 0.1302
$D_{10}$= 0.1109 $C_u$= 2.25 $C_c$= 1.04

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-7

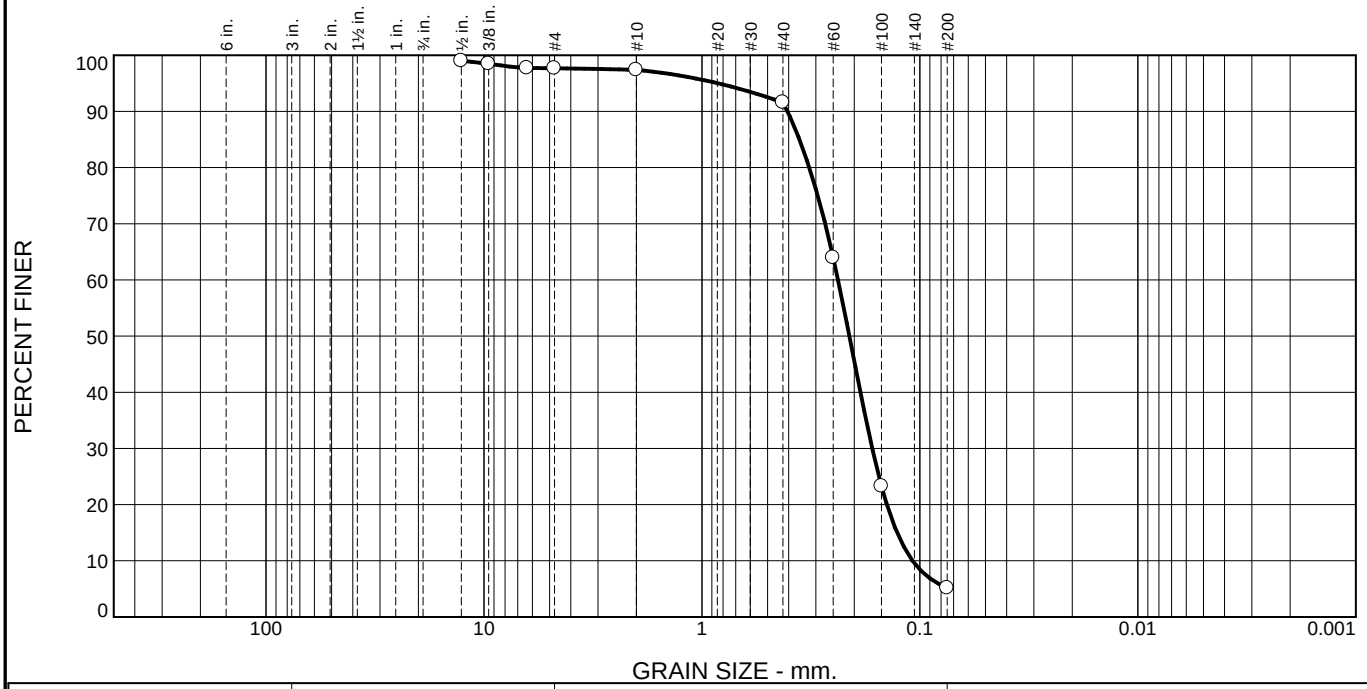
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-7

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.3 | 5.8 | 86.5 | 5.1 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 99.0 | | |
| 3/8 in. | 98.5 | | |
| 1/4 in. | 97.7 | | |
| #4 | 97.7 | | |
| #10 | 97.4 | | |
| #40 | 91.6 | | |
| #60 | 64.0 | | |
| #100 | 23.3 | | |
| #200 | 5.1 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4052 $D_{85}$= 0.3569 $D_{60}$= 0.2375
$D_{50}$= 0.2107 $D_{30}$= 0.1654 $D_{15}$= 0.1272
$D_{10}$= 0.1082 $C_u$= 2.20 $C_c$= 1.06

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-8

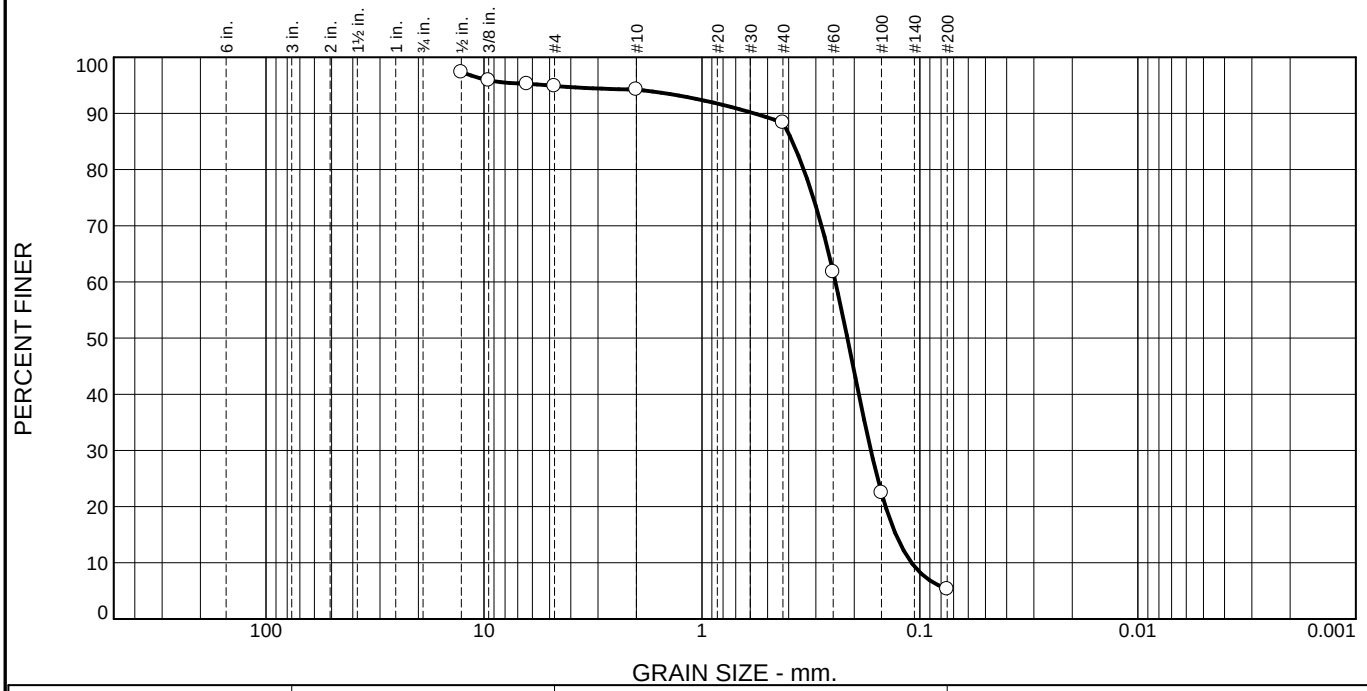
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-8

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.7 | 5.8 | 83.1 | 5.3 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 97.4 | | |
| 3/8 in. | 95.9 | | |
| 1/4 in. | 95.3 | | |
| #4 | 94.9 | | |
| #10 | 94.2 | | |
| #40 | 88.4 | | |
| #60 | 61.8 | | |
| #100 | 22.5 | | |
| #200 | 5.3 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.5761 $D_{85}$= 0.3848 $D_{60}$= 0.2441
$D_{50}$= 0.2152 $D_{30}$= 0.1678 $D_{15}$= 0.1288
$D_{10}$= 0.1093 $C_u$= 2.23 $C_c$= 1.06

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-9

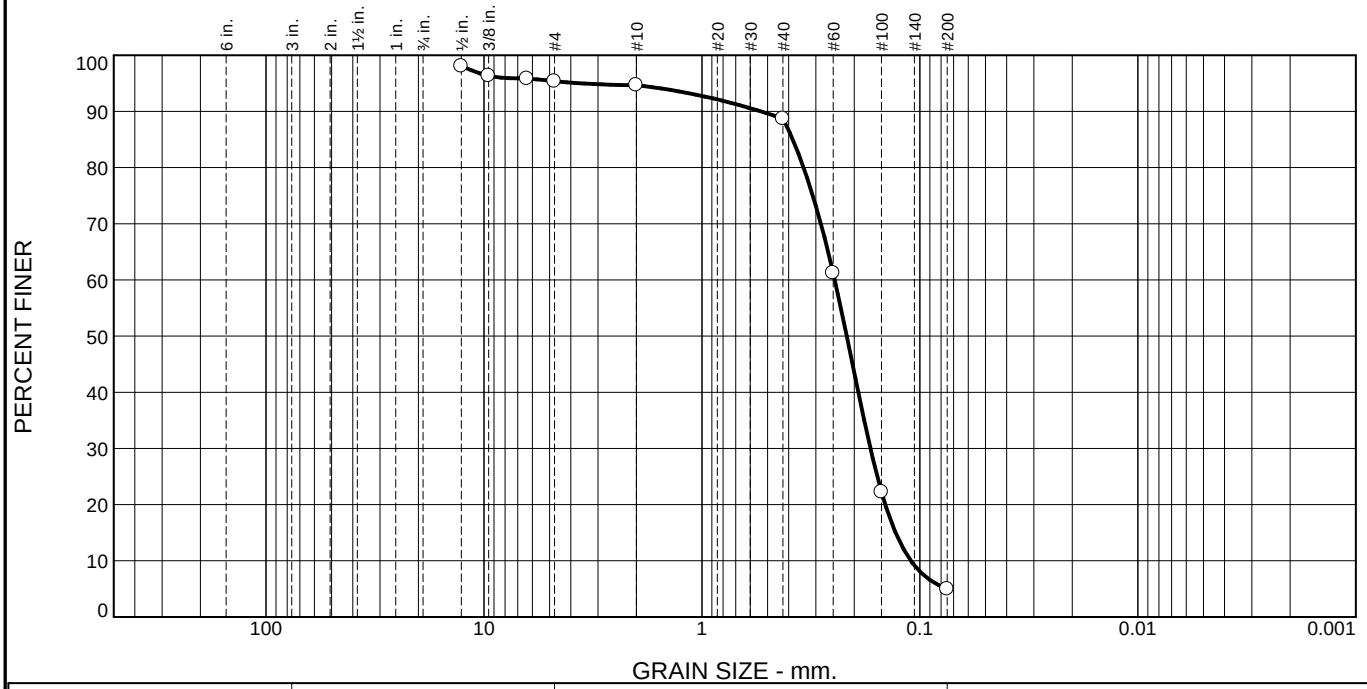
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-9

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.6 | 6.0 | 83.8 | 4.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 98.1 | | |
| 3/8 in. | 96.3 | | |
| 1/4 in. | 95.8 | | |
| #4 | 95.3 | | |
| #10 | 94.7 | | |
| #40 | 88.7 | | |
| #60 | 61.2 | | |
| #100 | 22.2 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.5364 $D_{85}$= 0.3832 $D_{60}$= 0.2459
$D_{50}$= 0.2166 $D_{30}$= 0.1686 $D_{15}$= 0.1293
$D_{10}$= 0.1101 $C_u$= 2.23 $C_c$= 1.05

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-10

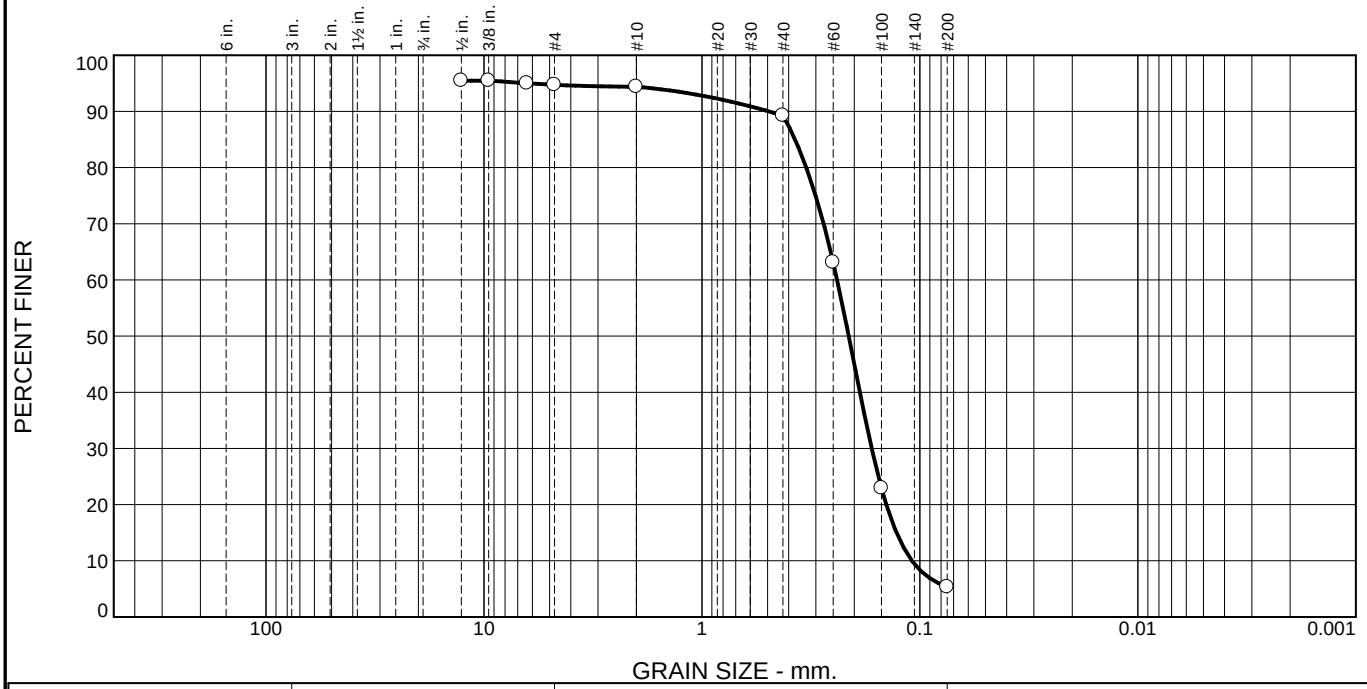
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-10

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.3 | 5.1 | 84.0 | 5.3 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 95.5 | | |
| 3/8 in. | 95.5 | | |
| 1/4 in. | 95.0 | | |
| #4 | 94.7 | | |
| #10 | 94.4 | | |
| #40 | 89.3 | | |
| #60 | 63.1 | | |
| #100 | 22.9 | | |
| #200 | 5.3 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4931 $D_{85}$= 0.3740 $D_{60}$= 0.2399
$D_{50}$= 0.2122 $D_{30}$= 0.1663 $D_{15}$= 0.1280
$D_{10}$= 0.1088 $C_u$= 2.20 $C_c$= 1.06

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-11

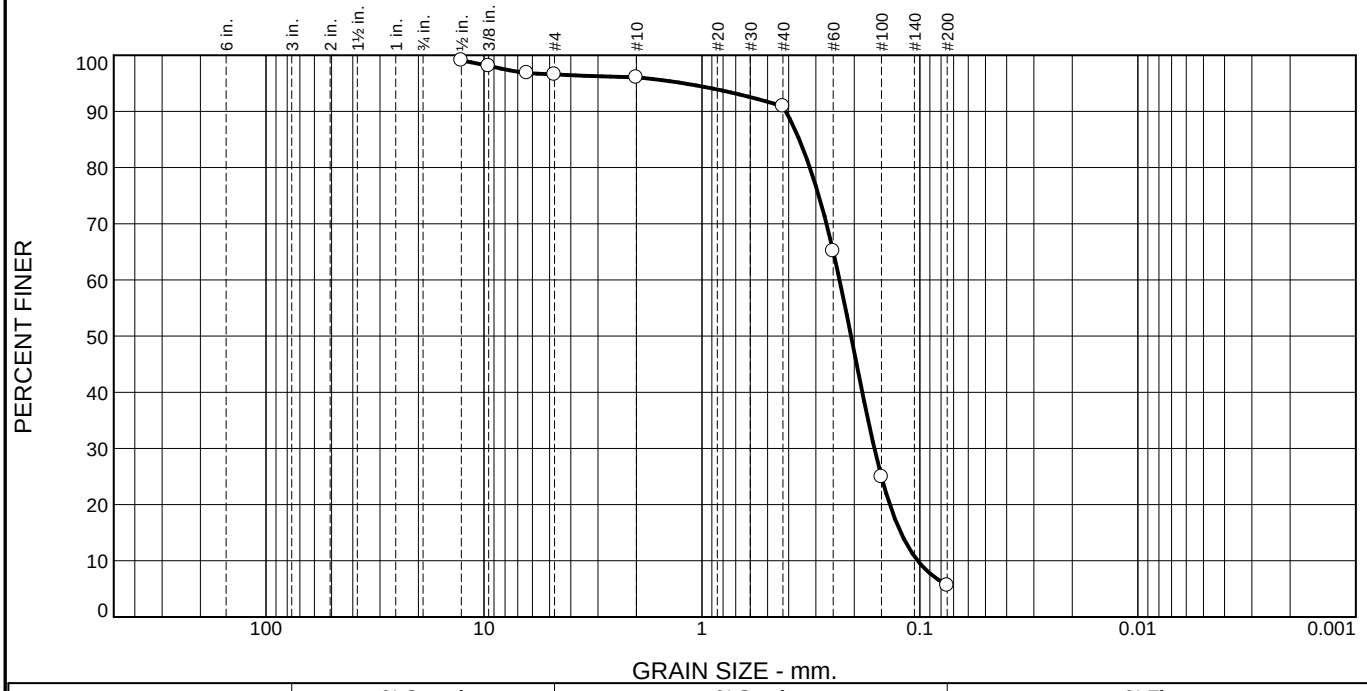
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-11

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.5 | 5.2 | 85.3 | 5.6 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 99.1 | | |
| 3/8 in. | 98.1 | | |
| 1/4 in. | 96.8 | | |
| #4 | 96.6 | | |
| #10 | 96.1 | | |
| #40 | 90.9 | | |
| #60 | 65.1 | | |
| #100 | 24.9 | | |
| #200 | 5.6 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.4122 $D_{85}$= 0.3576 $D_{60}$= 0.2337
$D_{50}$= 0.2070 $D_{30}$= 0.1617 $D_{15}$= 0.1223
$D_{10}$= 0.1024 $C_u$= 2.28 $C_c$= 1.09

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/12/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** Northeast of Landfill
**Sample Number:** NE-12

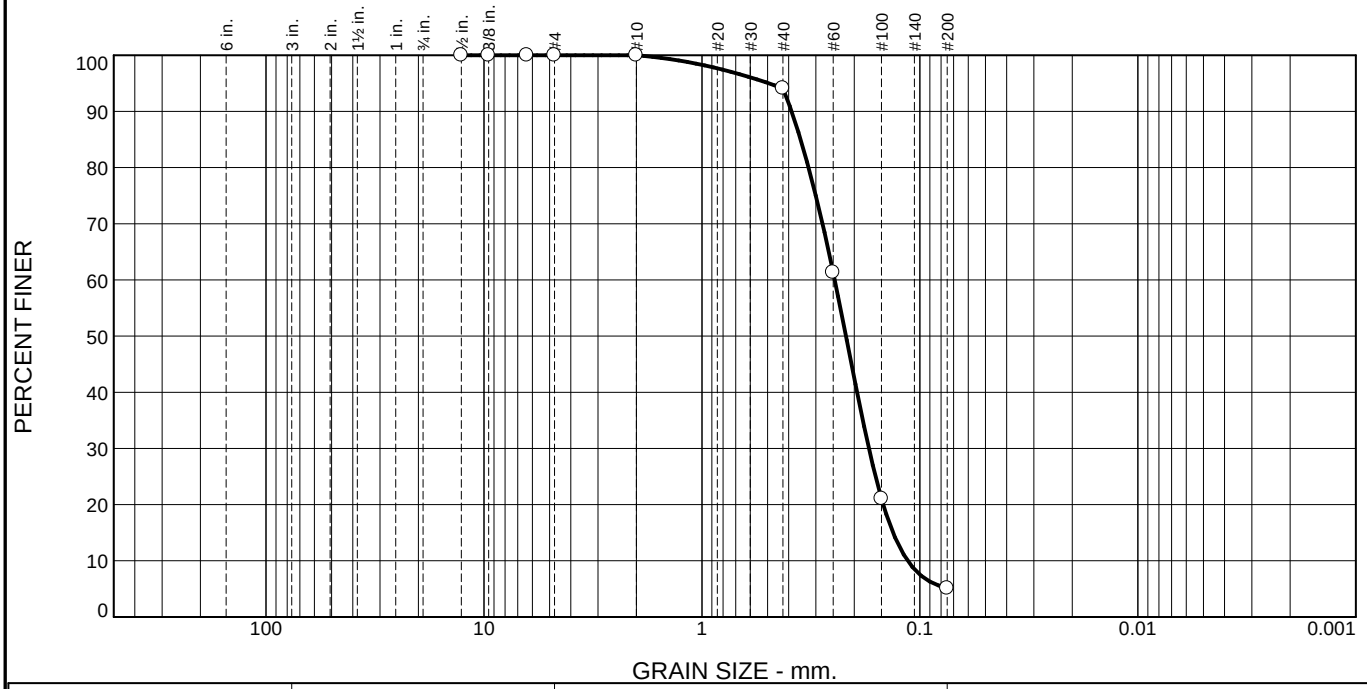
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** NE-12

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.0 | 5.9 | 89.0 | 5.1 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #40 | 94.1 | | |
| #60 | 61.3 | | |
| #100 | 21.0 | | |
| #200 | 5.1 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3879 $D_{85}$= 0.3526 $D_{60}$= 0.2459
$D_{50}$= 0.2184 $D_{30}$= 0.1713 $D_{15}$= 0.1328
$D_{10}$= 0.1138 $C_u$= 2.16 $C_c$= 1.05

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-1

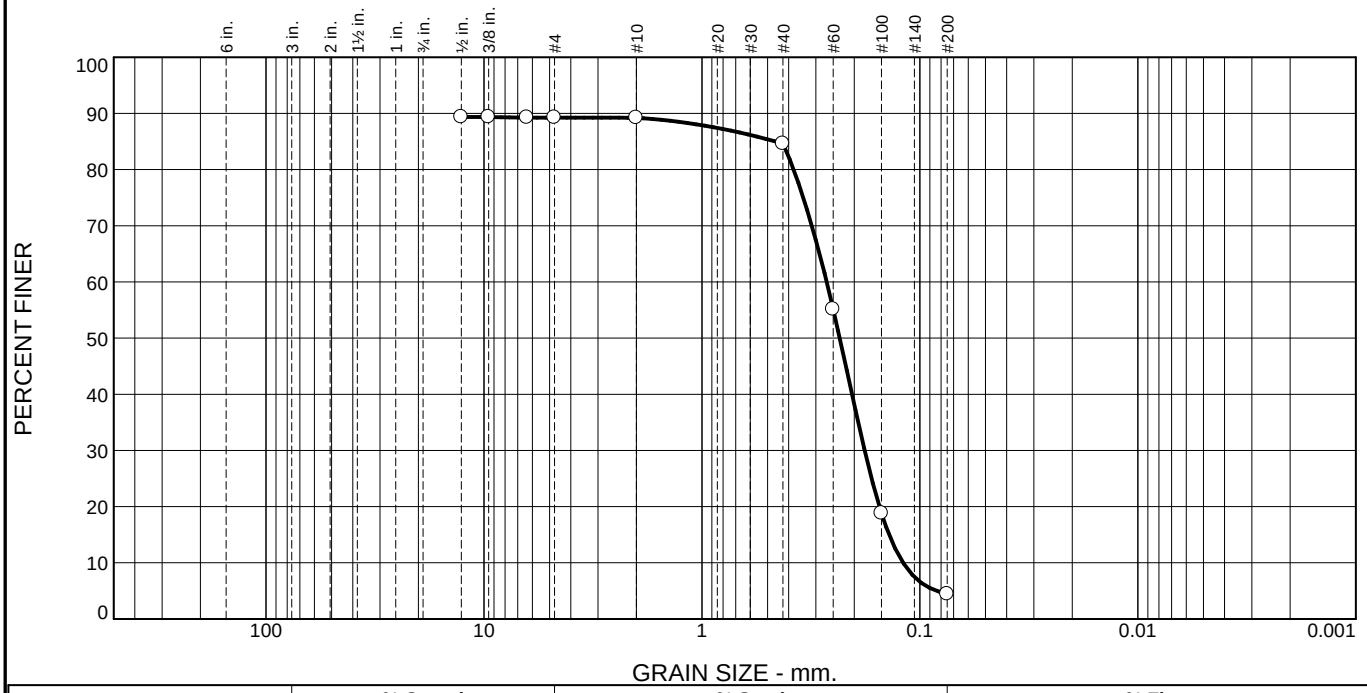
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-1

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.1 | 4.6 | 80.2 | 4.4 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 89.4 | | |
| 3/8 in. | 89.4 | | |
| 1/4 in. | 89.3 | | |
| #4 | 89.3 | | |
| #10 | 89.2 | | |
| #40 | 84.6 | | |
| #60 | 55.2 | | |
| #100 | 18.8 | | |
| #200 | 4.4 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= $D_{85}$= 0.4597 $D_{60}$= 0.2677
$D_{50}$= 0.2333 $D_{30}$= 0.1792 $D_{15}$= 0.1384
$D_{10}$= 0.1194 $C_u$= 2.24 $C_c$= 1.00

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-2

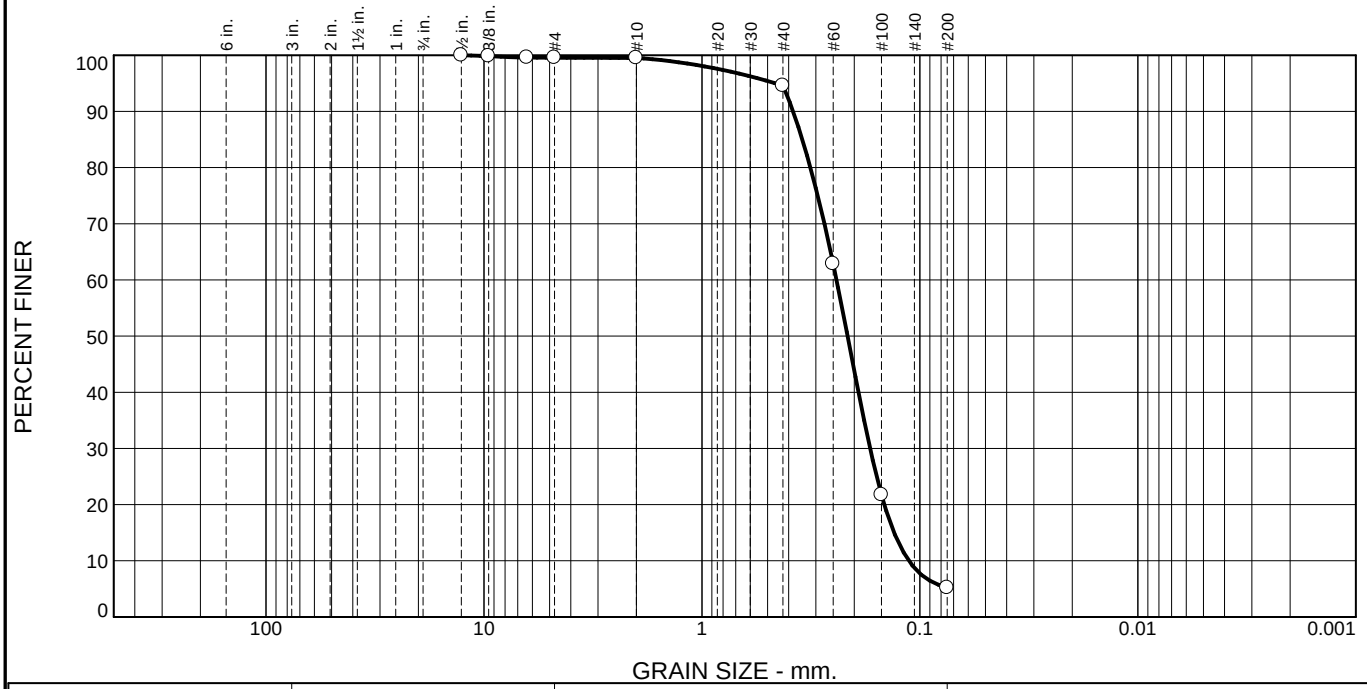
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-2

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.5 | 0.0 | 4.9 | 89.4 | 5.2 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 99.8 | | |
| 1/4 in. | 99.6 | | |
| #4 | 99.5 | | |
| #10 | 99.5 | | |
| #40 | 94.6 | | |
| #60 | 62.9 | | |
| #100 | 21.7 | | |
| #200 | 5.2 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3818 $D_{85}$= 0.3462 $D_{60}$= 0.2413
$D_{50}$= 0.2148 $D_{30}$= 0.1692 $D_{15}$= 0.1313
$D_{10}$= 0.1125 $C_u$= 2.15 $C_c$= 1.05

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-3

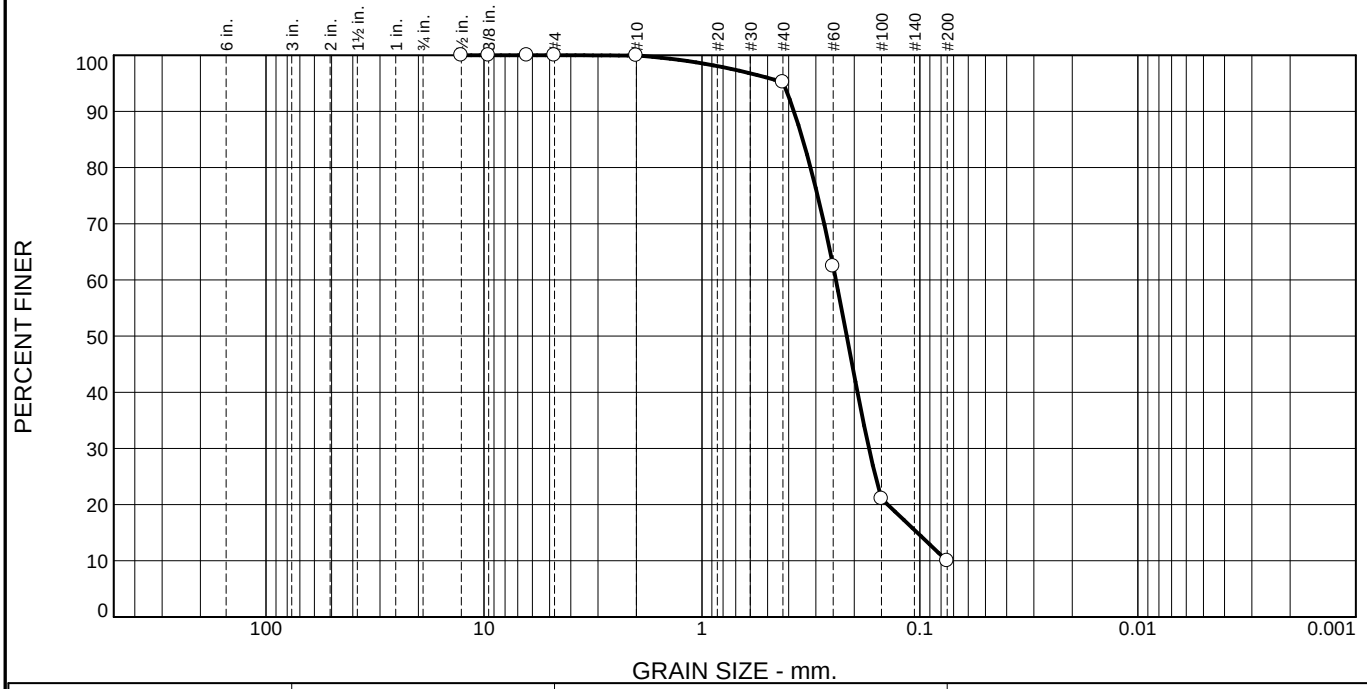
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-3

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.1 | 4.7 | 85.2 | 10.0 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 99.9 | | |
| #40 | 95.2 | | |
| #60 | 62.5 | | |
| #100 | 21.0 | | |
| #200 | 10.0 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3783 $D_{85}$= 0.3445 $D_{60}$= 0.2428
$D_{50}$= 0.2166 $D_{30}$= 0.1712 $D_{15}$= 0.1028
$D_{10}$= 0.0752 $C_u$= 3.23 $C_c$= 1.61

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-4

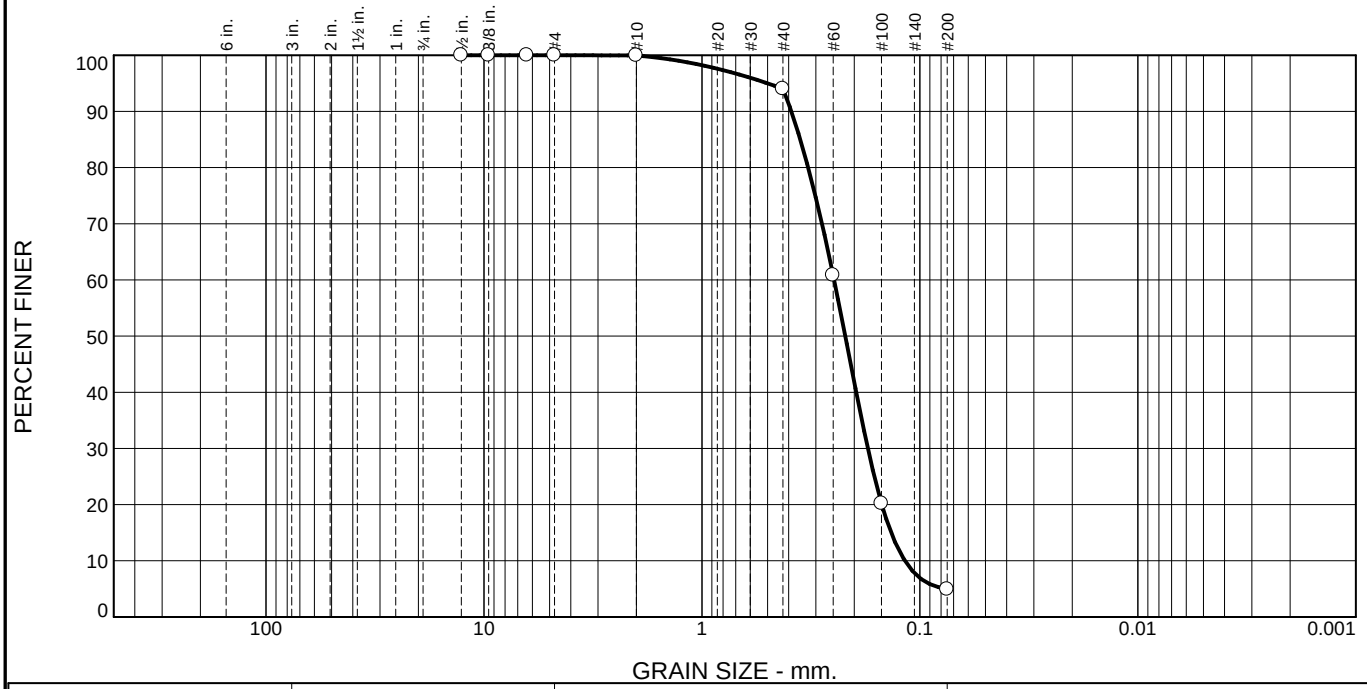
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-4

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 89.1 | 4.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #40 | 94.0 | | |
| #60 | 60.8 | | |
| #100 | 20.2 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3889 $D_{85}$= 0.3539 $D_{60}$= 0.2475
$D_{50}$= 0.2200 $D_{30}$= 0.1732 $D_{15}$= 0.1355
$D_{10}$= 0.1172 $C_u$= 2.11 $C_c$= 1.03

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-5

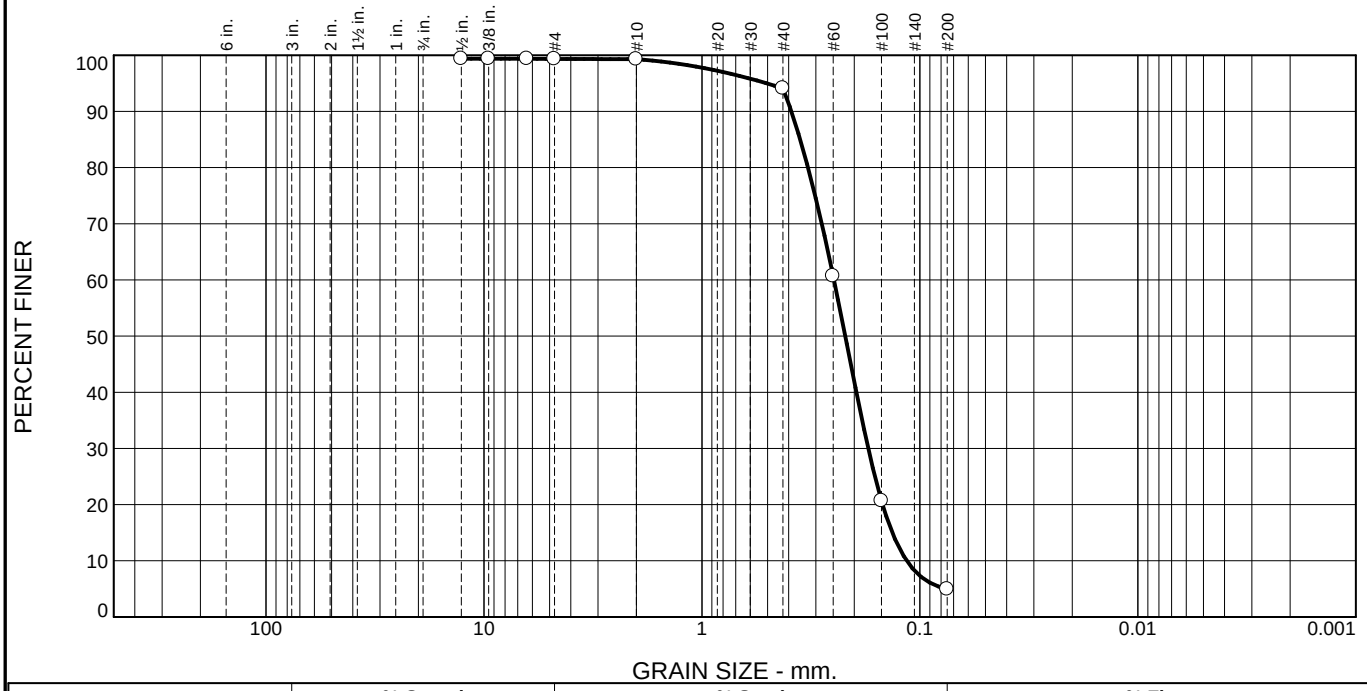
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-5

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| | | | 0.0 | 5.2 | 89.2 | 4.9 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 99.4 | | |
| 3/8 in. | 99.4 | | |
| 1/4 in. | 99.4 | | |
| #4 | 99.3 | | |
| #10 | 99.3 | | |
| #40 | 94.1 | | |
| #60 | 60.7 | | |
| #100 | 20.7 | | |
| #200 | 4.9 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** SP **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3888 $D_{85}$= 0.3542 $D_{60}$= 0.2479
$D_{50}$= 0.2201 $D_{30}$= 0.1725 $D_{15}$= 0.1338
$D_{10}$= 0.1150 $C_u$= 2.16 $C_c$= 1.04

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** yler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-6

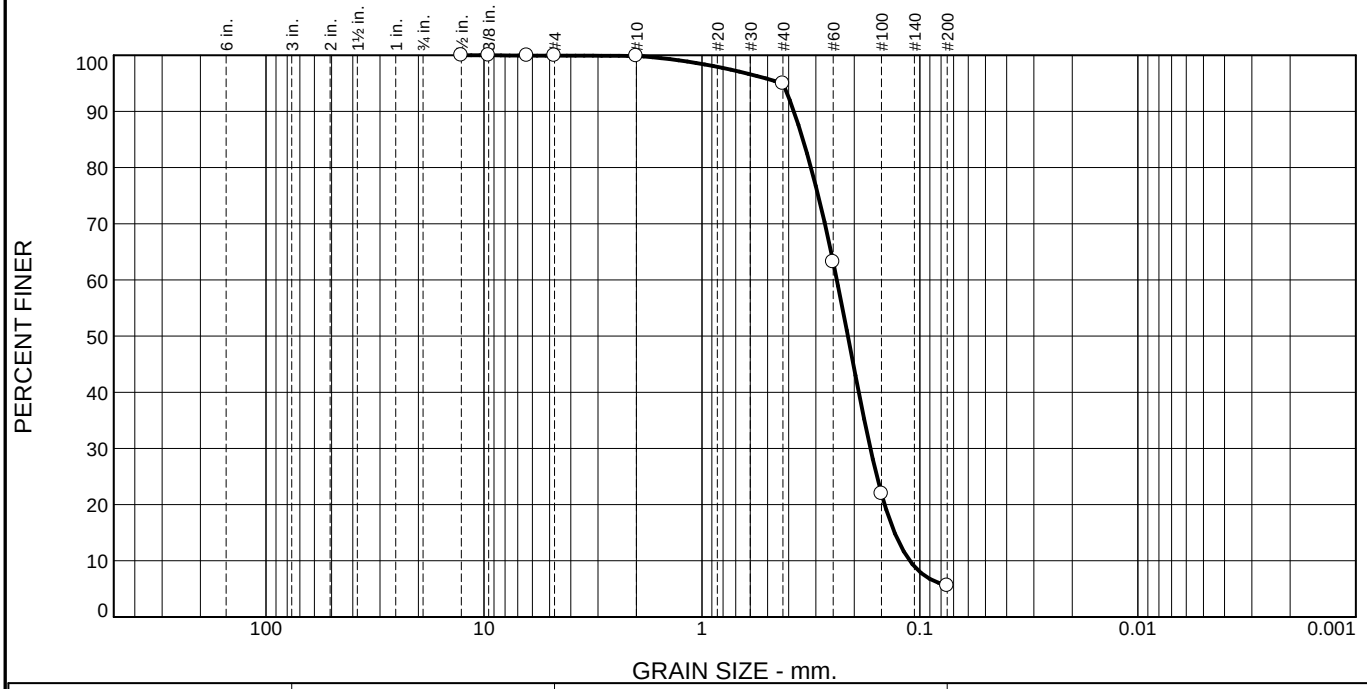
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-6

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.1 | 0.0 | 4.9 | 89.4 | 5.6 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 99.9 | | |
| #4 | 99.9 | | |
| #10 | 99.9 | | |
| #40 | 95.0 | | |
| #60 | 63.2 | | |
| #100 | 21.9 | | |
| #200 | 5.6 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3787 $D_{85}$= 0.3439 $D_{60}$= 0.2404
$D_{50}$= 0.2141 $D_{30}$= 0.1687 $D_{15}$= 0.1306
$D_{10}$= 0.1114 $C_u$= 2.16 $C_c$= 1.06

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-7

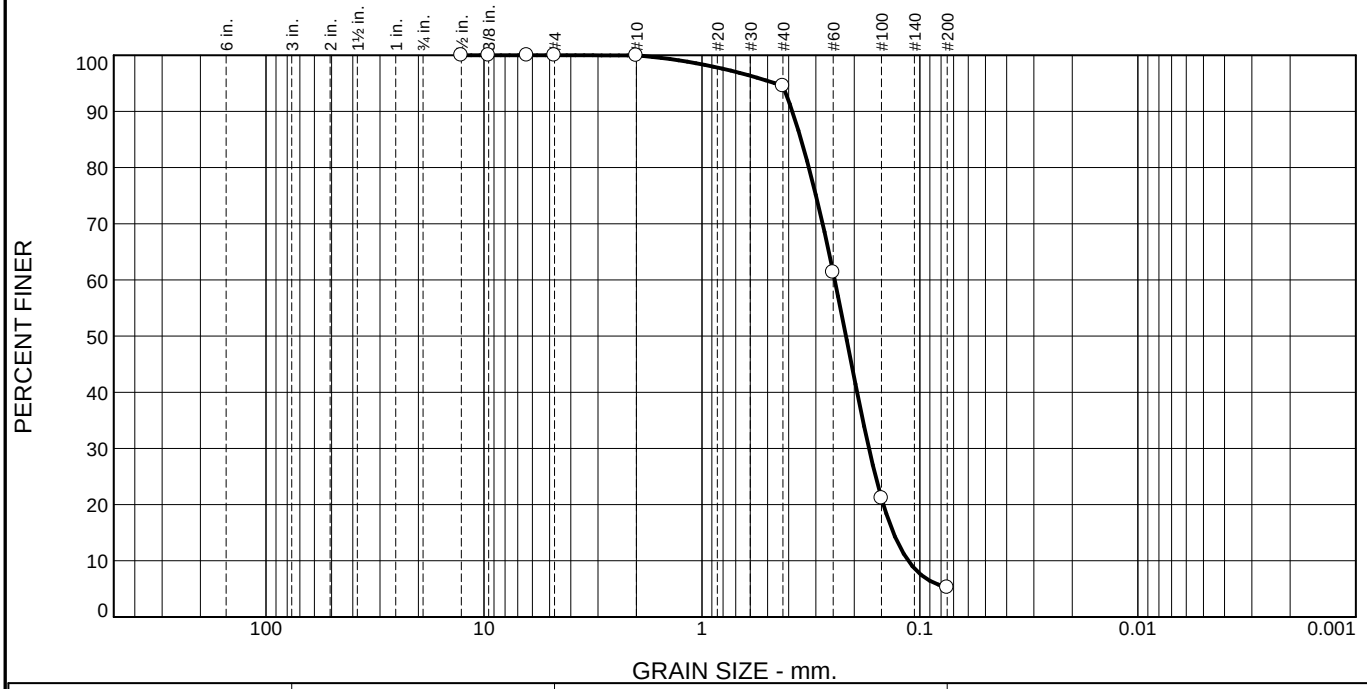
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-7

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.0 | 5.5 | 89.3 | 5.2 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #40 | 94.5 | | |
| #60 | 61.4 | | |
| #100 | 21.1 | | |
| #200 | 5.2 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3850 $D_{85}$= 0.3508 $D_{60}$= 0.2459
$D_{50}$= 0.2184 $D_{30}$= 0.1712 $D_{15}$= 0.1324
$D_{10}$= 0.1132 $C_u$= 2.17 $C_c$= 1.05

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-8

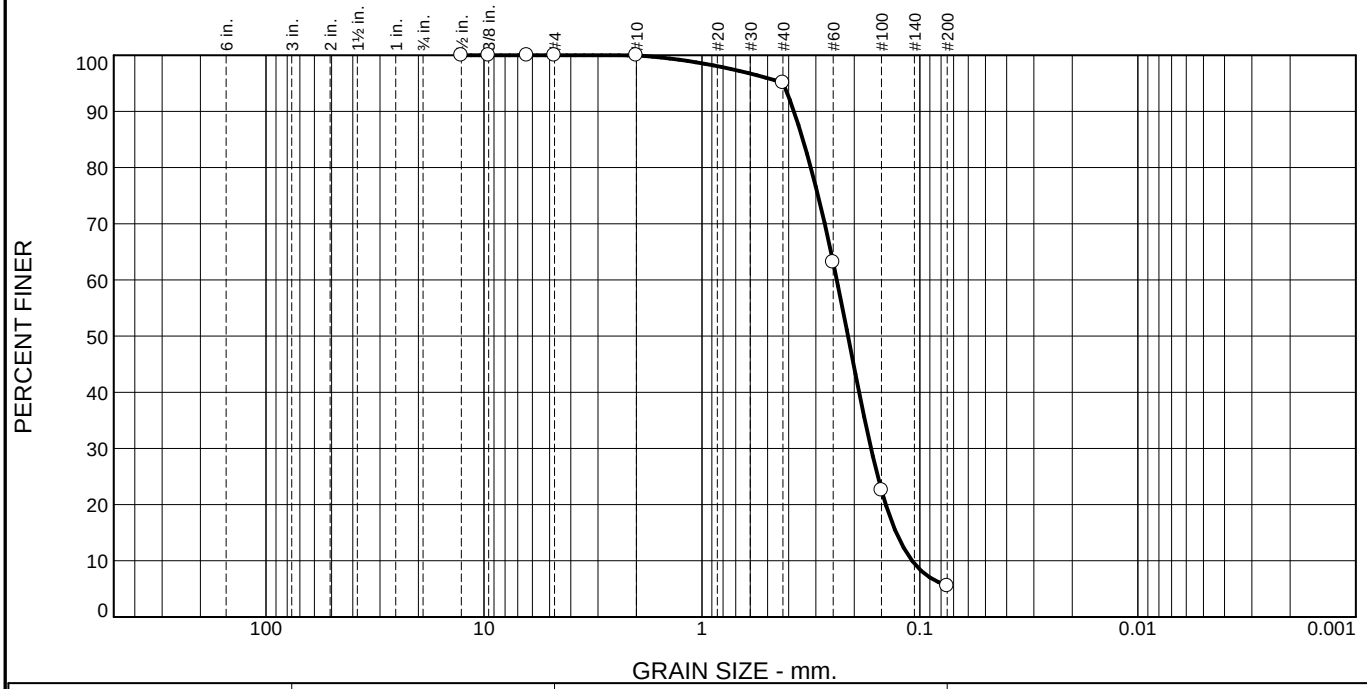
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-8

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.0 | 4.9 | 89.6 | 5.5 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #40 | 95.1 | | |
| #60 | 63.1 | | |
| #100 | 22.6 | | |
| #200 | 5.5 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3785 $D_{85}$= 0.3441 $D_{60}$= 0.2406
$D_{50}$= 0.2138 $D_{30}$= 0.1675 $D_{15}$= 0.1284
$D_{10}$= 0.1086 $C_u$= 2.21 $C_c$= 1.07

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-9

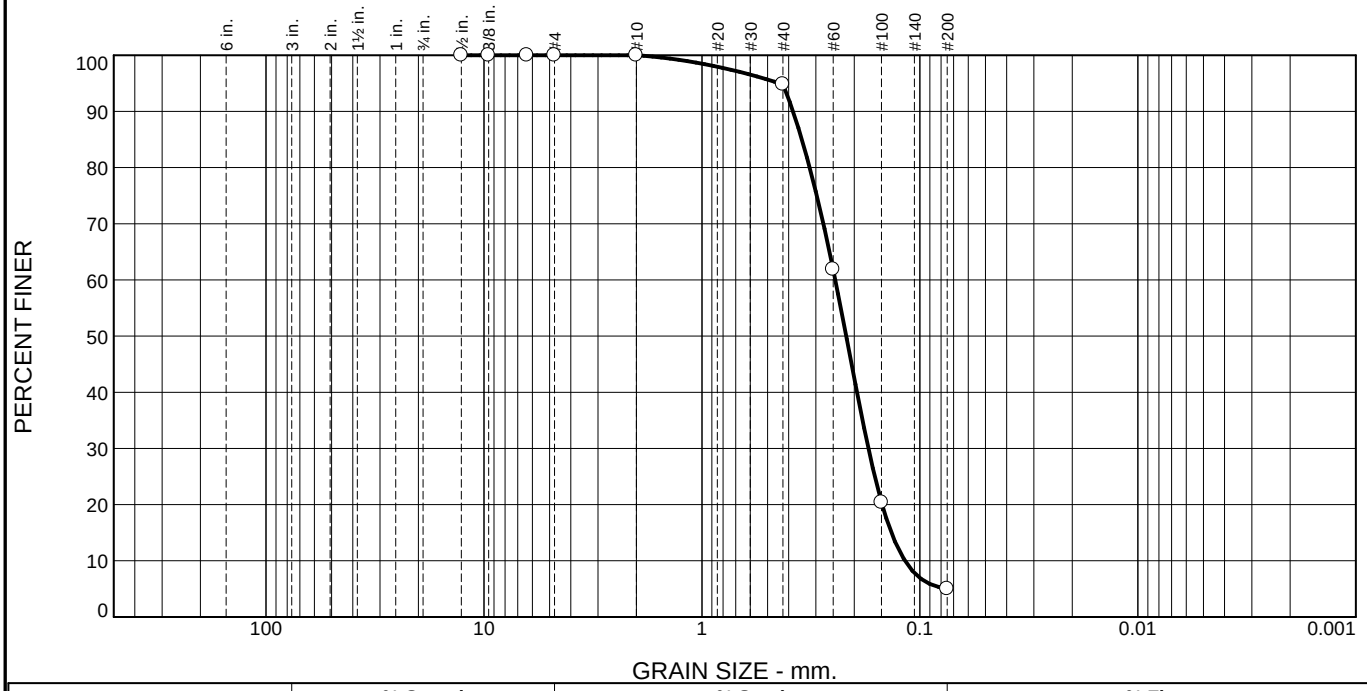
**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-9

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.0 | 5.2 | 89.8 | 5.0 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #40 | 94.8 | | |
| #60 | 61.9 | | |
| #100 | 20.4 | | |
| #200 | 5.0 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3820 $D_{85}$= 0.3479 $D_{60}$= 0.2445
$D_{50}$= 0.2178 $D_{30}$= 0.1722 $D_{15}$= 0.1351
$D_{10}$= 0.1171 $C_u$= 2.09 $C_c$= 1.04

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-10

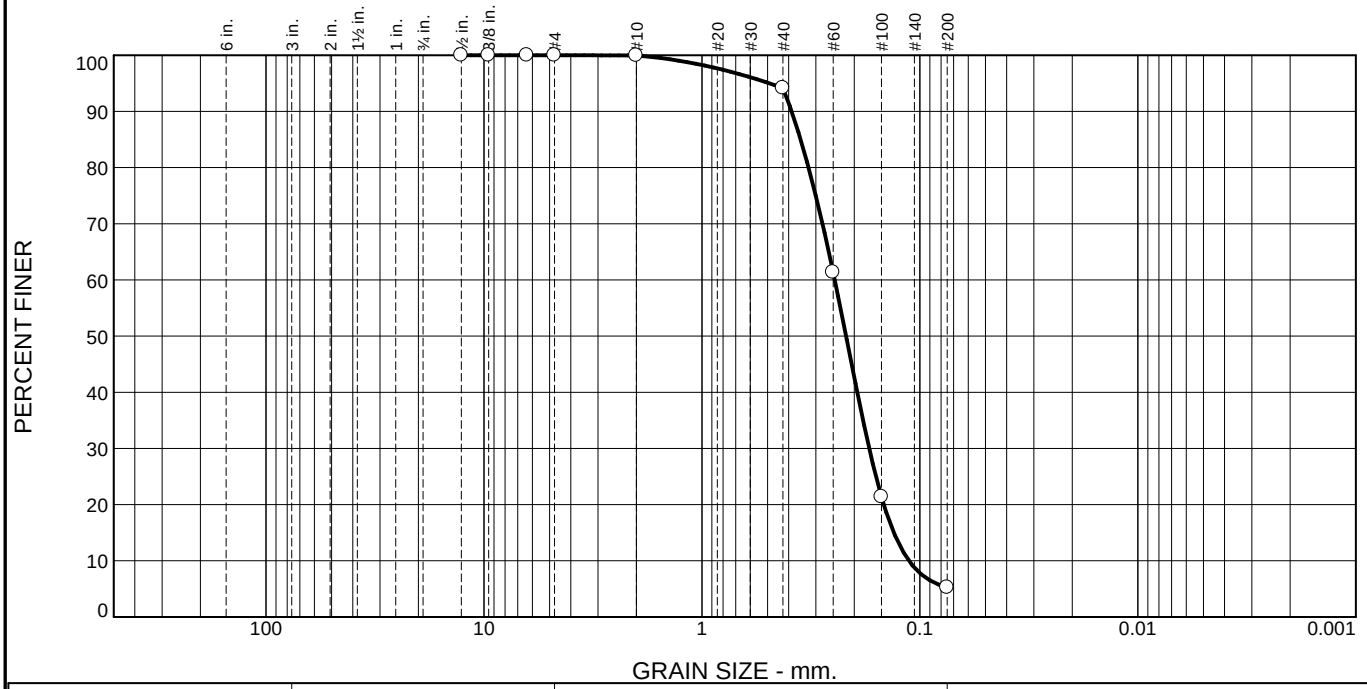
**Date Sampled:** 12/09/2019

GORDON ENVIRONMENTAL PSC

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-10

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.0 | 5.9 | 88.9 | 5.2 | |

**TEST RESULTS**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1/2 in. | 100.0 | | |
| 3/8 in. | 100.0 | | |
| 1/4 in. | 100.0 | | |
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #40 | 94.1 | | |
| #60 | 61.3 | | |
| #100 | 21.4 | | |
| #200 | 5.2 | | |

* (no specification provided)

**Material Description**

PSL

**Atterberg Limits (ASTM D 4318)**

**PL=** **LL=** **PI=**

**Classification**

**USCS (D 2487)=** **AASHTO (M 145)=**

**Coefficients**

$D_{90}$= 0.3877 $D_{85}$= 0.3526 $D_{60}$= 0.2459
$D_{50}$= 0.2182 $D_{30}$= 0.1708 $D_{15}$= 0.1317
$D_{10}$= 0.1123 $C_u$= 2.19 $C_c$= 1.06

**Remarks**

**Date Received:** 12/11/2019 **Date Tested:** 12/13/2019

**Tested By:** Tyler Zack

**Checked By:** Carl King

**Title:** Senior Project Manager

**Location:** West of Landfill
**Sample Number:** W-11

**Date Sampled:** 12/09/2019

GORDON PSC ENVIRONMENTAL

**Client:** OWL
**Project:** OWL SWMF Construction

**Project No:** 01056019.00/0001 **Figure** W-11

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.1. GCL Certifications

Report Date
10/23/2019

# BentoLiner Manufacturing Certification

**Sales Order:** SO-088056
**Customer:** Mustang Extreme Environmental Services LLC
**Project:** MUSTANG / OWL LANNDFILL
**Product Type:** BLI-075-06N-03S-D-30 BentoLiner NSL

The GCL purchased and shipped for the above referenced project does meet or exceed the project specifications.

The GCL supplied to this project has been continuously inspected for the presence of needles and is certified to be needle free.

Chuck Taylor
Laboratory Technician

# Roll Allocation List

Conformance: 1/100,000sf, min 1/lot, 1'xrw
TRI TX

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Daily lot | Roll width | Top | Bottom | Clay | Length | |
|---|---|---|---|---|---|---|---|---|
| 502339407 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518333 | 21281263 | 1100719B | 150.00 | |
| 502339408 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 150.00 | |
| **502339409** | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 150.00 | Conformance |
| 502339411 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 86.00 | |
| 502339412 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 150.00 | |
| 502339413 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 144.00 | |
| 502339415 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 150.00 | |
| 502339416 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 150.00 | |
| 502339417 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518329 | 21281263 | 1100719B | 150.00 | |
| 502339418 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339419 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339420 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339421 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339422 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339423 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339424 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339425 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719B | 150.00 | |
| 502339426 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719C | 150.00 | |
| 502339427 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518326 | 21281263 | 1100719C | 150.00 | |
| 502339428 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | 21281263 | 1100719C | 150.00 | |
| 502339429 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | 21281263 | 1100719C | 150.00 | |
| 502339430 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | 21281263 | 1100719C | 150.00 | |
| 502339431 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339432 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339433 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339434 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339435 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339436 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339437 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339438 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518280 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339439 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339440 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339441 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339442 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339443 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339444 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339445 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339446 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339447 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339448 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518245 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339449 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339450 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339451 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Daily lot | Roll width | Top | Bottom | Clay | Length | |
|---|---|---|---|---|---|---|---|---|
| 502339452 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339453 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339454 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339455 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719C | 150.00 | |
| 502339456 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-5 | 1100719D | 150.00 | |
| **502339457** | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-1 | 1100719D | 150.00 | Conformance |
| 502339458 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518225 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339459 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339460 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339461 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339462 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339463 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339464 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339465 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339466 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339467 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339468 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518324 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339469 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339473 | BLI-075-06N-03S-D-30 | 29101803 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339474 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339475 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339476 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339477 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339478 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518331 | MDWE041790-1 | 1100719D | 150.00 | |
| 502339479 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041790-1 | 31016191A | 150.00 | |
| 502339480 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041790-1 | 31016191A | 150.00 | |
| 502339481 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041790-1 | 31016191A | 136.00 | |
| 502339483 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041790-1 | 31016191A | 150.00 | |
| 502339484 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339485 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041749-7 | 31016191A | 116.00 | |
| 502339486 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339487 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339488 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041749-7 | 31016191A | 100.00 | |
| 502339489 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518273 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339491 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339492 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339493 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339494 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339495 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339496 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339497 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339498 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518279 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339499 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Daily lot | Roll width | Top | Bottom | Clay | Length | |
|---|---|---|---|---|---|---|---|---|
| 502339500 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339501 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339502 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339503 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339504 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| **502339505** | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | Conformance |
| 502339506 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339507 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339508 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518272 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339509 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041749-7 | 31016191A | 150.00 | |
| 502339510 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339511 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339512 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339513 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339514 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339515 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339516 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339517 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339518 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518327 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339519 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339520 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339521 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339522 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339523 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339524 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339525 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339526 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339527 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339528 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518342 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339529 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339530 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339531 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339532 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339533 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339534 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041664-12 | 31017191A | 150.00 | |
| 502339535 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041780-5 | 31017191A | 150.00 | |
| 502339536 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041780-5 | 31017191A | 150.00 | |
| 502339537 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518340 | MDWE041780-5 | 31017191A | 150.00 | |
| 502339538 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017191A | 150.00 | |
| 502339539 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339541 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339542 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339543 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Daily lot | Roll width | Top | Bottom | Clay | Length | |
|---|---|---|---|---|---|---|---|---|
| 502339544 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339545 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339546 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339547 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518304 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339548 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| **502339549** | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | Conformance |
| 502339550 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339551 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339552 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339553 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339554 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339555 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339556 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339557 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518335 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339558 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518341 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339559 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518341 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339560 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518341 | MDWE041780-5 | 31017192A | 150.00 | |
| 502339561 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518341 | MDWE041664-13 | 31017192A | 150.00 | |
| 502339562 | BLI-075-06N-03S-D-30 | 29102103 | 15.50 | 130518341 | MDWE041664-13 | 31017192A | 150.00 | |
| 502339563 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518341 | MDWE041664-13 | 31017192A | 150.00 | |
| 502339564 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518341 | MDWE041664-13 | 31017192A | 150.00 | |
| 502339565 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518341 | MDWE041664-13 | 31017192A | 150.00 | |
| 502339566 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518341 | MDWE041664-13 | 31017192A | 150.00 | |
| 502339567 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518341 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339568 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339569 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339570 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339571 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339572 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339573 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339574 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339575 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339576 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339577 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518298 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339578 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339579 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 88.00 | |
| 502339580 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339581 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339582 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339583 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339584 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339585 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |
| 502339586 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041664-13 | 31018192A | 150.00 | |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Daily lot | Roll width | Top | Bottom | Clay | Length | |
|---|---|---|---|---|---|---|---|---|
| 502339587 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518305 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339588 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339589 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339590 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339591 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339592 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| **502339593** | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | Conformance |
| 502339594 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339595 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 31018192A | 150.00 | |
| 502339596 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339597 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518234 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339598 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339599 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339600 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339601 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339602 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339603 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339604 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339605 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339606 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339607 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518266 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339608 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339609 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339610 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339611 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041717-12 | 1101419B | 150.00 | |
| 502339612 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339613 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339614 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339615 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339616 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518237 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339617 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518236 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339618 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518236 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339619 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518236 | MDWE041686-14 | 1101419B | 80.00 | |
| 502339620 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518236 | MDWE041686-14 | 1101419B | 150.00 | |
| 502339621 | BLI-075-06N-03S-D-30 | 29102203 | 15.50 | 130518236 | MDWE041686-14 | 1101419B | 150.00 | |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339407 | 179 | 119 | 42 | 68.9 | 8.3 | 0.90 | 0.83 | 34.0 | 9.0 | 14.2 |
| 502339408 | 179 | 119 | 42 | 68.9 | 8.3 | 0.90 | 0.83 | 34.0 | 9.0 | 14.2 |
| 502339409 | 179 | 119 | 42 | 68.9 | 8.3 | 0.90 | 0.83 | 34.0 | 9.0 | 14.2 |
| 502339411 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339412 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339413 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339415 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339416 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339417 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339418 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339419 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339420 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339421 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339422 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339423 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339424 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339425 | 186 | 119 | 43 | 53.0 | 8.7 | 0.99 | 0.91 | 34.0 | 9.1 | 14.2 |
| 502339426 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339427 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339428 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339429 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339430 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339431 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339432 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339433 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339434 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339435 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339436 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339437 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339438 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339439 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339440 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339441 | 208 | 119 | 50 | 51.8 | 10.4 | 0.94 | 0.87 | 35.0 | 9.3 | 12.8 |
| 502339442 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339443 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339444 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339445 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339446 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339447 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339448 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339449 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339450 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339451 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339452 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339453 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339454 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339455 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 35.0 | 9.3 | 12.8 |
| 502339456 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 31.0 | 9.3 | 12.8 |
| 502339457 | 178 | 119 | 52 | 45.7 | 10.2 | 0.93 | 0.86 | 31.0 | 9.3 | 12.8 |
| 502339458 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339459 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339460 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339461 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339462 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339463 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339464 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339465 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339466 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339467 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339468 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339469 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339473 | 169 | 119 | 44 | 47.5 | 9.0 | 0.90 | 0.83 | 31.0 | 10.3 | 12.8 |
| 502339474 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 31.0 | 11.7 | 12.8 |
| 502339475 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 31.0 | 11.7 | 12.8 |
| 502339476 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 31.0 | 11.7 | 12.8 |
| 502339477 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 31.0 | 11.7 | 12.8 |
| 502339478 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 31.0 | 11.7 | 12.8 |
| 502339479 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339480 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339481 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339483 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339484 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339485 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339486 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339487 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339488 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339489 | 162 | 121 | 54 | 55.7 | 11.4 | 0.87 | 0.80 | 26.0 | 11.7 | 13.2 |
| 502339491 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339492 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339493 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339494 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339495 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339496 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339497 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339498 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339499 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339500 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339501 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339502 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339503 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339504 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339505 | 222 | 121 | 67 | 51.6 | 11.3 | 0.85 | 0.78 | 26.0 | 11.6 | 13.2 |
| 502339506 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 26.0 | 9.6 | 13.2 |
| 502339507 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 26.0 | 9.6 | 13.2 |
| 502339508 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 26.0 | 9.6 | 13.2 |
| 502339509 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 26.0 | 9.6 | 13.2 |
| 502339510 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339511 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339512 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339513 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339514 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339515 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339516 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339517 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339518 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339519 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339520 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339521 | 171 | 121 | 49 | 52.2 | 9.8 | 0.85 | 0.78 | 27.0 | 9.6 | 14.0 |
| 502339522 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339523 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339524 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339525 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339526 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339527 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339528 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339529 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339530 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339531 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339532 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339533 | 147 | 121 | 53 | 47.7 | 10.4 | 0.85 | 0.78 | 27.0 | 9.7 | 14.0 |
| 502339534 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 27.0 | 9.5 | 14.0 |
| 502339535 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 27.0 | 9.5 | 14.0 |
| 502339536 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 27.0 | 9.5 | 14.0 |
| 502339537 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 27.0 | 9.5 | 14.0 |
| 502339538 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 27.0 | 9.5 | 14.0 |
| 502339539 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339541 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339542 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339543 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339544 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339545 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339546 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339547 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339548 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339549 | 177 | 121 | 45 | 49.9 | 8.8 | 0.91 | 0.84 | 26.0 | 9.5 | 13.2 |
| 502339550 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339551 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339552 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339553 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339554 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339555 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339556 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339557 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339558 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339559 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339560 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339561 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339562 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339563 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339564 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339565 | 168 | 129 | 55 | 52.0 | 10.7 | 0.85 | 0.78 | 26.0 | 9.5 | 13.2 |
| 502339566 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 26.0 | 9.6 | 13.2 |
| 502339567 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 26.0 | 9.6 | 13.2 |
| 502339568 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339569 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339570 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339571 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339572 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339573 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339574 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339575 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339576 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339577 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339578 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339579 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339580 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339581 | 183 | 129 | 41 | 56.8 | 8.1 | 0.87 | 0.80 | 27.0 | 9.6 | 13.4 |
| 502339582 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339583 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339584 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339585 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339586 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339587 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339588 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339589 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339590 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339591 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339592 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339593 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339594 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339595 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339596 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339597 | 146 | 129 | 40 | 50.3 | 7.6 | 0.90 | 0.83 | 27.0 | 10.9 | 13.4 |
| 502339598 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 27.0 | 11.4 | 13.4 |
| 502339599 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339600 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339601 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339602 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339603 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339604 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339605 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339606 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339607 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339608 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339609 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339610 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339611 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339612 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339613 | 163 | 129 | 50 | 42.8 | 10.0 | 0.87 | 0.80 | 30.0 | 11.4 | 12.8 |
| 502339614 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |
| 502339615 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |
| 502339616 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |
| 502339617 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |
| 502339618 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/23/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | BLI-075-06N-03S-D-30 | |

| Roll Number | ASTM D4632 Grab Strength (lbs) | Puncture Resistance ASTM D4833 (lbs) GCL Puncture (lbs) | ASTM D4632 Peel Strength (lbs) | ASTM D6768 Tensile Strength (ppi) | ASTM D6496 Peel Strength (ppi) | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) GCL Mass (lb/ | ASTM D5993 Clay Content @ 0% Moisture (lbs/sf) | ASTM D5890 Free Swell (ml/2g) | ASTM D2216 Moisture Content (%) | ASTM D5891 Fluid Loss (ml) |
|---|---|---|---|---|---|---|---|---|---|---|
| 502339619 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |
| 502339620 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |
| 502339621 | 196 | 129 | 47 | 43.8 | 9.3 | 0.89 | 0.81 | 30.0 | 11.6 | 12.8 |

**Laboratory Manager**

This test report shall not be reproduced, except in full, without written approval of the laboratory.

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** 23-Oct-2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | MUSTANG / OWL LANNDFILL | BLI-GEO-NW-0605 | |

| Roll Number | Mass per Unit Area ASTM D5261 (oz/yd²) | ASTM D4632 Grab Strength (lbs) MD | ASTM D4632 Grab Elongation(%) MD |
|---|---|---|---|
| 130518225 | 7.60 | 90.00 | 152 |
| 130518234 | 7.40 | 65.00 | 176 |
| 130518236 | 7.40 | 65.00 | 176 |
| 130518237 | 6.90 | 64.00 | 169 |
| 130518245 | 6.78 | 74.00 | 198 |
| 130518266 | 6.68 | 59.00 | 193 |
| 130518272 | 6.85 | 70.00 | 201 |
| 130518273 | 6.77 | 83.00 | 210 |
| 130518279 | 6.78 | 74.00 | 198 |
| 130518280 | 6.78 | 74.00 | 198 |
| 130518298 | 6.90 | 55.00 | 176 |
| 130518304 | 7.00 | 52.00 | 214 |
| 130518305 | 6.80 | 45.00 | 181 |
| 130518324 | 7.10 | 71.00 | 155 |
| 130518326 | 6.90 | 71.00 | 197 |
| 130518327 | 6.90 | 71.00 | 197 |
| 130518329 | 6.87 | 66.00 | 179 |
| 130518331 | 6.87 | 66.00 | 179 |
| 130518333 | 6.78 | 67.00 | 217 |
| 130518335 | 6.78 | 67.00 | 217 |
| 130518340 | 6.73 | 73.00 | 182 |
| 130518341 | 7.20 | 63.00 | 187 |
| 130518342 | 7.20 | 63.00 | 187 |

**Laboratory Manager** Mauricio Ossa

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** 23-Oct-2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | MUSTANG / OWL LANNDFILL | BLI-GEO-WS-0305 | |

| Roll Number | Mass per Unit Area ASTM D5261 (oz/yd²) | ASTM D4632 Grab Strength (lbs) MD | ASTM D4632 Grab Elongation (%) MD |
|---|---|---|---|
| 21281263 | 3.84 | 257 | 30.0 |
| MDWE041664-12 | 3.20 | 186 | 18.6 |
| MDWE041664-13 | 3.21 | 178 | 17.7 |
| MDWE041686-14 | 3.21 | 183 | 17.7 |
| MDWE041717-12 | 3.29 | 181 | 17.9 |
| MDWE041749-7 | 3.21 | 186 | 17.6 |
| MDWE041780-5 | 3.18 | 175 | 16.6 |
| MDWE041790-1 | 3.19 | 177 | 17.3 |
| MDWE041790-5 | 3.19 | 176 | 17.5 |

**Laboratory Manager** Mauricio Ossa

# *GSE BENTOLINER*

**CERTIFICATE OF ANALYSIS 2019**

**PRODUCT : NATIONAL® 30**

SHIPPED FROM: **BENTONITE PERFORMANCE MINERALS LLC**
554 US HWY 212
COLONY PLANT
BELLE FOURCHE, S.D. 57717

| BOL # | LOAD DATE | **LOT CODE** | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC MEQ **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|---|
| **B0004288474** | **10-07-19** | **1100719A** | **6.8** | **0.27** | **0.93** | **14.0** | **112** | **30** | **850** |

| **OCTOBER** | | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC meq **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|
| No. of CARS **12** | M AVG | **8.21** | **0.49** | **2.98** | **12.98** | **114.17** | **30.25** | **920.08** |
| | STD DEV | **0.78** | **0.26** | **1.50** | **0.49** | **1.52** | **1.23** | **40.15** |

| **YTD** | | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC meq **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|
| No. of CARS **514** | M AVG | **8.99** | **0.86** | **4.06** | **13.02** | **115.29** | **31.10** | **977.54** |
| | STD DEV | **0.88** | **0.74** | **1.99** | **0.87** | **8.13** | **2.01** | **77.09** |

**SOLD TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

For any questions contact.
Q.A. SUPERVISOR
Tucker Goodvin

**Attn:** **Bob Stadler (rstadler@gseworld.com)**
**Chuck Taylor (ctaylor@gseworld.com)**
**Cheryl Hofer (chofer@gseworld.com)**
**(ezimmel@gseworld.com)**

**SHIPPED TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

**Prepared by: TO**
10/08/19

**CC:** Thomas Anderson
Jason Tawse

# *GSE BENTOLINER*

**CERTIFICATE OF ANALYSIS 2019**

**PRODUCT : NATIONAL® 30**

SHIPPED FROM: **BENTONITE PERFORMANCE MINERALS LLC**
554 US HWY 212
COLONY PLANT
BELLE FOURCHE, S.D. 57717

| BOL # | LOAD DATE | LOT CODE | % MOIST 12 MAX | Mesh % + 20 15 MAX | Mesh % - 200 10 MAX | FL 18 MAX | MBC MEQ 70 MIN | SWELL INDEX 25 MIN | PWA 750 MIN |
|---|---|---|---|---|---|---|---|---|---|
| **B0004294457** | **10-08-19** | **1100719B** | **8.0** | **0.97** | **1.77** | **14.0** | **124** | **36** | **1000** |
| **B0004294459** | **10-08-19** | **1100719C** | **6.1** | **0.55** | **1.71** | **11.2** | **114** | **30** | **810** |

| **OCTOBER** | | % MOIST 12 MAX | Mesh % + 20 15 MAX | Mesh % - 200 10 MAX | FL 18 MAX | MBC meq 70 MIN | SWELL INDEX 25 MIN | PWA 750 MIN |
|---|---|---|---|---|---|---|---|---|
| No. of CARS | M AVG | **8.64** | **0.79** | **2.31** | **13.58** | **112.59** | **30.08** | **903.89** |
| **29** | STD DEV | **1.05** | **0.54** | **1.58** | **1.57** | **7.67** | **2.56** | **96.82** |

| **YTD** | | % MOIST 12 MAX | Mesh % + 20 15 MAX | Mesh % - 200 10 MAX | FL 18 MAX | MBC meq 70 MIN | SWELL INDEX 25 MIN | PWA 750 MIN |
|---|---|---|---|---|---|---|---|---|
| No. of CARS | M AVG | **8.98** | **0.87** | **3.96** | **13.06** | **115.14** | **31.05** | **973.90** |
| **531** | STD DEV | **0.89** | **0.73** | **2.02** | **0.95** | **8.21** | **2.08** | **80.85** |

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**(ezimmel@gseworld.com)**

**SHIPPED TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

**CC:** Thomas Anderson
Jason Tawse

For any questions contact.
Q.A. SUPERVISOR
Tucker Goodvin

**Prepared by: TO**
10/18/19

# *GSE BENTOLINER*

**CERTIFICATE OF ANALYSIS 2019**

**PRODUCT : NATIONAL® 30**

SHIPPED FROM: **BENTONITE PERFORMANCE MINERALS LLC**
554 US HWY 212
COLONY PLANT
BELLE FOURCHE, S.D. 57717

| BOL # | LOAD DATE | **LOT CODE** | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC MEQ **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|---|
| **B0004294460** | **10-08-19** | **1100719D** | **8.1** | **0.36** | **1.81** | **13.2** | **118** | **33** | **1005** |

| **OCTOBER** | | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC meq **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|
| No. of CARS **15** | M AVG | **8.05** | **0.52** | **2.74** | **12.95** | **115.07** | **30.80** | **923.73** |
| | STD DEV | **0.87** | **0.27** | **1.43** | **0.69** | **2.91** | **1.90** | **54.69** |

| **YTD** | | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC meq **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|
| No. of CARS **517** | M AVG | **8.98** | **0.86** | **4.04** | **13.02** | **115.31** | **31.11** | **977.32** |
| | STD DEV | **0.89** | **0.74** | **1.99** | **0.87** | **8.11** | **2.02** | **77.23** |

**SOLD TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

**Attn:** **Bob Stadler (rstadler@gseworld.com)**
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**Cheryl Hofer (chofer@gseworld.com)**
**(ezimmel@gseworld.com)**

**SHIPPED TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

**CC:** Thomas Anderson
Jason Tawse

For any questions contact.
Q.A. SUPERVISOR
Tucker Goodvin

**Prepared by: TO**
10/09/19

# *GSE BENTOLINER*

**CERTIFICATE OF ANALYSIS 2019**

**PRODUCT : NATIONAL® 30**

SHIPPED FROM: **BENTONITE PERFORMANCE MINERALS LLC**
554 US HWY 212
COLONY PLANT
BELLE FOURCHE, S.D. 57717

| BOL # | LOAD DATE | **LOT CODE** | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC MEQ **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|---|
| **B0004303741** | **10-20-19** | **1101419B** | **10.2** | **0.34** | **3.89** | **12.4** | **118** | **31** | **995** |
| **B0004303745** | **10-21-19** | **1101419C** | **9.8** | **0.43** | **3.50** | **11.2** | **116** | **32** | **815** |

| **OCTOBER** | | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC meq **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|
| No. of CARS **31** | M AVG | **8.71** | **0.77** | **2.38** | **13.49** | **112.82** | **30.15** | **903.95** |
| | STD DEV | **1.06** | **0.53** | **1.57** | **1.58** | **7.53** | **2.52** | **96.48** |

| **YTD** | | % MOIST **12 MAX** | Mesh % + 20 **15 MAX** | Mesh % - 200 **10 MAX** | FL **18 MAX** | MBC meq **70 MIN** | SWELL INDEX **25 MIN** | PWA **750 MIN** |
|---|---|---|---|---|---|---|---|---|
| No. of CARS **533** | M AVG | **8.99** | **0.87** | **3.96** | **13.05** | **115.14** | **31.05** | **973.66** |
| | STD DEV | **0.90** | **0.73** | **2.01** | **0.95** | **8.19** | **2.08** | **80.99** |

**SOLD TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

For any questions contact.
Q.A. SUPERVISOR
Tucker Goodvin

**Attn:** **Bob Stadler (rstadler@gseworld.com)**
**Chuck Taylor (ctaylor@gseworld.com)**
**Cheryl Hofer (chofer@gseworld.com)**
**(ezimmel@gseworld.com)**

**SHIPPED TO:** **GSE CLAY LINING TECHNOLOGY, Co.**
3150 FIRST AVENUE
SPEARFISH, SD 57783

**Prepared by: TO**
10/21/19

**CC:** Thomas Anderson
Jason Tawse

# GSE Bentoliner Clay Lining Technology, Co.

CERTIFICATE OF ANALYSIS

PRODUCT: National 30

Shipped From: **Bentonite Performance Minerals LLC**
789 Hwy. 14-A East
Lovell, WY 82431

| Trk. & BOL No. | Order No. | LOAD DATE | LOT CODE | MOIST 12 max | F.L. 18 max | MBC MEQ | Free Swell 25 min | PWA 700 min | Mesh % + 20 (15.0 Max) | Mesh % - 200 (10.0 Max) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Habeck 24 B0004300488** | **906035793** | **10/16/2019** | **31016191A** | **9.3** | **16.0** | **104** | **27** | **799** | **1.5** | **0.3** |

**Sold To:** **GSE Clay Lining Technology, Co.**
3150 1st Avenue
Spearfish, SD 57783

**Shipped To:** **GSE Clay Lining Technology, Co.**
3150 1st Avenue
Spearfish, SD 57783

**Attn:** Bob Stadler (rstadler@gseworld.com)
Cheryl Hofer (chofer@gseworld.com)
Chuck Taylor (ctaylor@gseworld.com)
E. Zimmel (ezimmel@gseworld.com)

Q A Supervisor
David Hayes

10/18/2019

# GSE Bentoliner Clay Lining Technology, Co.

CERTIFICATE OF ANALYSIS

PRODUCT: National 30

Shipped From: **Bentonite Performance Minerals LLC**
789 Hwy. 14-A East
Lovell, WY 82431

| Trk. & BOL No. | Order No. | LOAD DATE | LOT CODE | MOIST 12 max | F.L. 18 max | MBC MEQ | Free Swell 25 min | PWA 700 min | Mesh % + 20 (15.0 Max) | Mesh % - 200 (10.0 Max) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Habeck 24 B0004301194** | **906035794** | **10/17/2019** | **31017191A** | **9.8** | **16.0** | **98** | **27** | **814** | **1.3** | **0.3** |
| **Habeck 24 B0004301907** | **906035795** | **10/17/2019** | **31017192A** | **9.7** | **16.0** | **98** | **27** | **817** | **1.7** | **1.0** |
| **Habeck 24 B0004302309** | **906035796** | **10/18/2019** | **31018192A** | **10.1** | **15.6** | **100** | **26** | **824** | **1.3** | **0.6** |

**Sold To:** **GSE Clay Lining Technology, Co.**
3150 1st Avenue
Spearfish, SD 57783

**Shipped To:** **GSE Clay Lining Technology, Co.**
3150 1st Avenue
Spearfish, SD 57783

**Attn:** Bob Stadler (rstadler@gseworld.com)
Cheryl Hofer (chofer@gseworld.com)
Chuck Taylor (ctaylor@gseworld.com)
E. Zimmel (ezimmel@gseworld.com)

Q A Supervisor
David Hayes

10/21/2019

June 28, 2019

**Mail To:**

**Thomas Harrelson**
**GSE - Solmax**

email: tharrelson@solmax.com
ccemail: agreen@solmax.com

**Bill To:**

**<= Same**

Dear Mr. Harrelson:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **Yearly Durability Testing** |
| TRI Job Reference Number: | 46339 |
| Material(s) Tested: | Seven, Bentoliner NSE GCL(s) |
| Test(s) Requested: | Oven Aging (ASTM D 5721/GRI GCL3) |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-NW-060 6 oz Nonwoven Cap (130510718)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 96 | 70 | 105 | 75 | 75 | **84** | 15 | |
| MD - Peak Tensile Strength (ppi) - B | 23.9 | 17.4 | 26.2 | 18.6 | 18.9 | **21.0** | 3.8 | |
| MD - Peak Tensile Strength (lbs) - E | 85 | 95 | 74 | 91 | 89 | **87** | 8 | |
| MD - Peak Tensile Strength (ppi) - E | 21.3 | 23.8 | 18.5 | 22.8 | 22.4 | **21.7** | 2.0 | **104** |
| TD - Peak Tensile Strength (lbs) - B | 268 | 244 | 186 | 187 | 209 | **219** | 36 | |
| TD - Peak Tensile Strength (ppi) - B | 66.9 | 61.1 | 46.4 | 46.8 | 52.4 | **54.7** | 9.0 | |
| TD - Peak Tensile Strength (lbs) - E | 261 | 254 | 227 | 245 | 224 | **242** | 16 | |
| TD - Peak Tensile Strength (ppi) - E | 65.2 | 63.4 | 56.7 | 61.3 | 56.1 | **60.5** | 4.0 | **111** |
| MD - Elongation @ Max. Load (%) - B | 145 | 136 | 146 | 151 | 126 | **141** | 10 | |
| MD - Elongation @ Max. Load (%) - E | 118 | 122 | 115 | 130 | 129 | **123** | 6 | **87** |
| TD - Elongation @ Max. Load (%) - B | 90 | 85 | 77 | 79 | 83 | **83** | 5 | |
| TD - Elongation @ Max. Load (%) - E | 71 | 72 | 69 | 68 | 69 | **70** | 2 | **84** |

B - Baseline Unexposed
E - Exposed for 50 days @ 60C

MD Machine Direction TD Transverse Direction



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**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-NW-0305 3 oz Nonwoven Cap (2025732403)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 75 | 70 | 64 | 33 | 28 | **54** | 22 | |
| MD - Peak Tensile Strength (ppi) - B | 18.8 | 17.5 | 15.9 | 8.2 | 7.1 | **13.5** | 5.5 | |
| MD - Peak Tensile Strength (lbs) - E | 53 | 41 | 47 | 43 | 52 | **47** | 6 | |
| MD - Peak Tensile Strength (ppi) - E | 13.3 | 10.3 | 11.8 | 10.6 | 13.1 | **11.8** | 1.4 | **88** |
| TD - Peak Tensile Strength (lbs) - B | 85 | 85 | 96 | 73 | 63 | **80** | 13 | |
| TD - Peak Tensile Strength (ppi) - B | 21.3 | 21.4 | 24.0 | 18.2 | 15.9 | **20.1** | 3.2 | |
| TD - Peak Tensile Strength (lbs) - E | 129 | 97 | 90 | 159 | 100 | **115** | 29 | |
| TD - Peak Tensile Strength (ppi) - E | 32.1 | 24.2 | 22.6 | 39.8 | 24.9 | **28.7** | 7.2 | **143** |
| MD - Elongation @ Max. Load (%) - B | 184 | 175 | 167 | 143 | 143 | **162** | 19 | |
| MD - Elongation @ Max. Load (%) - E | 123 | 104 | 122 | 107 | 115 | **114** | 9 | **70** |
| TD - Elongation @ Max. Load (%) - B | 120 | 122 | 112 | 103 | 110 | **113** | 8 | |
| TD - Elongation @ Max. Load (%) - E | 85 | 86 | 82 | 86 | 82 | **84** | 2 | **74** |

B - Baseline Unexposed
E - Exposed for 50 days @ 60C

MD Machine Direction TD Transverse Direction



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**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-NW-0605 6 oz Nonwoven Cap (2025781126)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 108 | 93 | 133 | 111 | 145 | **118** | 21 | |
| MD - Peak Tensile Strength (ppi) - B | 27.0 | 23.4 | 33.2 | 27.7 | 36.3 | **29.5** | 5.2 | |
| MD - Peak Tensile Strength (lbs) - E | 129 | 121 | 130 | 122 | 123 | **125** | 4 | |
| MD - Peak Tensile Strength (ppi) - E | 32.2 | 30.2 | 32.5 | 30.4 | 30.8 | **31.2** | 1.1 | **106** |
| TD - Peak Tensile Strength (lbs) - B | 192 | 289 | 205 | 309 | 266 | **252** | 52 | |
| TD - Peak Tensile Strength (ppi) - B | 48.0 | 72.2 | 51.1 | 77.2 | 66.6 | **63.0** | 12.9 | |
| TD - Peak Tensile Strength (lbs) - E | 377 | 363 | 351 | 331 | 318 | **348** | 24 | |
| TD - Peak Tensile Strength (ppi) - E | 94.2 | 90.8 | 87.7 | 82.6 | 79.5 | **87.0** | 6.0 | **138** |
| MD - Elongation @ Max. Load (%) - B | 138 | 140 | 160 | 155 | 169 | **152** | 13 | |
| MD - Elongation @ Max. Load (%) - E | 117 | 108 | 114 | 118 | 111 | **114** | 4 | **75** |
| TD - Elongation @ Max. Load (%) - B | 102 | 105 | 92 | 112 | 104 | **103** | 7 | |
| TD - Elongation @ Max. Load (%) - E | 75 | 79 | 74 | 76 | 77 | **76** | 2 | **74** |

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MD Machine Direction TD Transverse Direction



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**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-NW-0805 8 oz Nonwoven Cap (2025709813)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 194 | 180 | 178 | 179 | 184 | **183** | 7 | |
| MD - Peak Tensile Strength (ppi) - B | 48.5 | 44.9 | 44.6 | 44.8 | 46.0 | **45.7** | 1.6 | |
| MD - Peak Tensile Strength (lbs) - E | 161 | 154 | 180 | 175 | 162 | **166** | 11 | |
| MD - Peak Tensile Strength (ppi) - E | 40.2 | 38.4 | 45.0 | 43.7 | 40.5 | **41.6** | 2.7 | **91** |
| TD - Peak Tensile Strength (lbs) - B | 425 | 401 | 403 | 405 | 448 | **416** | 20 | |
| TD - Peak Tensile Strength (ppi) - B | 106.2 | 100.3 | 100.6 | 101.3 | 112.0 | **104.1** | 5.0 | |
| TD - Peak Tensile Strength (lbs) - E | 438 | 417 | 433 | 512 | 448 | **449** | 37 | |
| TD - Peak Tensile Strength (ppi) - E | 109.4 | 104.1 | 108.1 | 127.9 | 112.1 | **112.3** | 9.2 | **108** |
| MD - Elongation @ Max. Load (%) - B | 145 | 132 | 149 | 147 | 166 | **148** | 12 | |
| MD - Elongation @ Max. Load (%) - E | 109 | 106 | 123 | 118 | 106 | **112** | 8 | **76** |
| TD - Elongation @ Max. Load (%) - B | 110 | 106 | 116 | 114 | 112 | **112** | 4 | |
| TD - Elongation @ Max. Load (%) - E | 74 | 76 | 79 | 88 | 81 | **79** | 5 | **71** |

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MD Machine Direction TD Transverse Direction



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**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-WS-0305 3 oz Scrim Carrier (21241093)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 569 | 544 | 534 | 544 | 577 | **553** | 18 | |
| MD - Peak Tensile Strength (ppi) - B | 142.3 | 136.1 | 133.4 | 135.9 | 144.1 | **138.4** | 4.6 | |
| MD - Peak Tensile Strength (lbs) - E | 455 | 453 | 459 | 478 | 432 | **455** | 17 | |
| MD - Peak Tensile Strength (ppi) - E | 113.7 | 113.3 | 114.7 | 119.6 | 107.9 | **113.8** | 4.2 | **82** |
| TD - Peak Tensile Strength (lbs) - B | 413 | 386 | 420 | 372 | 383 | **395** | 21 | |
| TD - Peak Tensile Strength (ppi) - B | 103.3 | 96.6 | 105.1 | 93.0 | 95.8 | **98.7** | 5.2 | |
| TD - Peak Tensile Strength (lbs) - E | 307 | 327 | 329 | 323 | 330 | **323** | 9 | |
| TD - Peak Tensile Strength (ppi) - E | 76.7 | 81.7 | 82.2 | 80.7 | 82.4 | **80.8** | 2.4 | **82** |
| MD - Elongation @ Max. Load (%) - B | 25 | 23 | 22 | 22 | 25 | **23** | 1 | |
| MD - Elongation @ Max. Load (%) - E | 18 | 17 | 17 | 17 | 16 | **17** | 1 | **72** |
| TD - Elongation @ Max. Load (%) - B | 21 | 24 | 23 | 21 | 20 | **22** | 2 | |
| TD - Elongation @ Max. Load (%) - E | 10 | 11 | 10 | 11 | 12 | **11** | 1 | **49** |

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MD Machine Direction TD Transverse Direction



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**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-FW-0605 6 oz Scrimwover Carrier (2025782026)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 275 | 283 | 293 | 268 | 272 | **278** | 10 | |
| MD - Peak Tensile Strength (ppi) - B | 68.7 | 70.7 | 73.3 | 67.1 | 68.0 | **69.6** | 2.5 | |
| MD - Peak Tensile Strength (lbs) - E | 250 | 217 | 231 | 262 | 248 | **241** | 18 | |
| MD - Peak Tensile Strength (ppi) - E | 62.5 | 54.2 | 57.8 | 65.4 | 62.0 | **60.4** | 4.4 | **87** |
| TD - Peak Tensile Strength (lbs) - B | 292 | 295 | 281 | 314 | 286 | **293** | 13 | |
| TD - Peak Tensile Strength (ppi) - B | 72.9 | 73.7 | 70.2 | 78.5 | 71.5 | **73.3** | 3.2 | |
| TD - Peak Tensile Strength (lbs) - E | 253 | 268 | 270 | 266 | 230 | **257** | 17 | |
| TD - Peak Tensile Strength (ppi) - E | 63.1 | 67.1 | 67.6 | 66.5 | 57.6 | **64.3** | 4.2 | **88** |
| MD - Elongation @ Max. Load (%) - B | 16 | 17 | 17 | 17 | 16 | **17** | 1 | |
| MD - Elongation @ Max. Load (%) - E | 14 | 13 | 13 | 15 | 14 | **14** | 1 | **84** |
| TD - Elongation @ Max. Load (%) - B | 10 | 10 | 10 | 10 | 10 | **10** | 0 | |
| TD - Elongation @ Max. Load (%) - E | 8 | 8 | 9 | 9 | 8 | **8** | 0 | **83** |

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MD Machine Direction TD Transverse Direction



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**LABORATORY TEST RESULTS**
**TRI Client: GSE - Solmax**
**Project: Yearly Durability Testing**

**Material: Bentoliner NSE GCL**
**Sample Identification: BLI-GEO-WS-0305 3 oz Wover Carrier (MDWE039779-1)**
**TRI Log #: 46339**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. | PERCENT RETAINED |
|---|---|---|---|---|---|---|---|---|
| **Oven Aging (ASTM D 5721/GRI GCL3)** | | | | | | | | |
| Strength Retained measured via GCL Tensile (ASTM D 6768) | | | | | | | | |
| MD - Peak Tensile Strength (lbs) - B | 395 | 397 | 383 | 369 | 381 | **385** | 11 | |
| MD - Peak Tensile Strength (ppi) - B | 98.8 | 99.2 | 95.7 | 92.2 | 95.1 | **96.2** | 2.9 | |
| MD - Peak Tensile Strength (lbs) - E | 371 | 382 | 362 | 361 | 367 | **369** | 8 | |
| MD - Peak Tensile Strength (ppi) - E | 92.9 | 95.5 | 90.6 | 90.4 | 91.8 | **92.2** | 2.1 | **96** |
| TD - Peak Tensile Strength (lbs) - B | 233 | 232 | 256 | 233 | 251 | **241** | 12 | |
| TD - Peak Tensile Strength (ppi) - B | 58.1 | 58.1 | 64.1 | 58.2 | 62.8 | **60.3** | 2.9 | |
| TD - Peak Tensile Strength (lbs) - E | 249 | 263 | 247 | 256 | 267 | **256** | 9 | |
| TD - Peak Tensile Strength (ppi) - E | 62.3 | 65.9 | 61.7 | 63.9 | 66.7 | **64.1** | 2.2 | **106** |
| MD - Elongation @ Max. Load (%) - B | 19 | 20 | 20 | 20 | 19 | **20** | 1 | |
| MD - Elongation @ Max. Load (%) - E | 17 | 17 | 17 | 17 | 17 | **17** | 0 | **87** |
| TD - Elongation @ Max. Load (%) - B | 9 | 10 | 12 | 11 | 12 | **11** | 1 | |
| TD - Elongation @ Max. Load (%) - E | 10 | 10 | 9 | 10 | 10 | **10** | 0 | **90** |

B - Baseline Unexposed
E - Exposed for 50 days @ 60C

MD Machine Direction TD Transverse Direction



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Report Date
10/31/2019

# Quality Assurance Laboratory Test Results

**Project:** MUSTANG / OWL LANNDFILL
**Sales Order:** SO-088056
**Product:** BLI-075-06N-03S-D-30 BentoLiner NSL

**Required Testing:** ASTM D5887 - Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter

**Frequency:** 1/270,000 SF

**Effective Stress:** 5 psi

| Daily Lot | Roll Number | Production Date | Index Flux ($m^3/m^2/sec$) | Hydraulic Conductivity (cm/sec) |
|---|---|---|---|---|
| 29101803 | 502339417 | 10/21/2019 | 2.30E-09 | 9.25E-10 |
| 29102103 | 502339533 | 10/22/2019 | 4.23E-09 | 1.79E-09 |

| | |
|---|---|
| Approved By: | Chuck Taylor |
| Date Approved: | 10/31/19 |

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.2. GCL Conformance Testing Results

November 6, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services**
5049 Edwards Ranch Road Suite 200
P1004
Ft. Worth, TX 76109

email: gabney@mustangextreme.com

**Bill To:**

**<= Same**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| Project: | **OWL Landfill Services LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51742 |
| Material(s) Tested: | Two, Solmax GSE Bentoliner NSL GCL(s) |
| Test(s) Requested: | Mass/Unit Area (ASTM D5993)<br>Mass/Unit Area (ASTM D5261)<br>Peel Strength (ASTM D6496)<br>Index Flux (ASTM D5887)<br>Bentonite - Swell Index (ASTM D5890)<br>Bentonite - Fluid Loss (ASTM D5891) |

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,



Mansukh Patel
Geosynthetic Services Division

Lead GCL Technical Contact - Jeffrey A. Kuhn, Ph.D., P.E., jkuhn@tri-env.com, 512-952-1212



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**GCL TEST RESULTS**
**TRI Client: Mustang Energy Services**
**Project: OWL Landfill Services LLC - Lea County New Mexico**

**Material: Solmax GSE Bentoliner NSL GCL**
**Sample Identification: 502339409**
**TRI Log #: 51742**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. | PROJ. SPEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)** | | | | | | | | | | | | | |
| Bentonite mass/unit area (lbs/ft$^2$) | 0.73 | 0.95 | 0.98 | 0.80 | 0.85 | | | | | | **0.86** | 0.10 | 0.81 min |
| Moisture Content (%) | 8.7 | 8.7 | 8.7 | 8.6 | 8.7 | | | | | | **8.7** | 0.1 | 35 max |
| **Mass/Unit Area (ASTM D 5261)** | Nonwoven Geotextile Component - Cap | | | | | | | | | | | | |
| 4" diameter circle (grams) | 1.83 | 1.78 | 1.61 | 1.77 | 1.80 | 1.93 | 1.88 | 1.83 | 1.72 | 1.90 | **1.81** | 0.09 | |
| Mass/Unit Area (oz/sq.yd) | 6.65 | 6.47 | 5.85 | 6.43 | 6.54 | 7.02 | 6.83 | 6.65 | 6.25 | 6.91 | **6.56** | 0.34 | 5.8 min |
| **Peel Strength (ASTM D6496)** | | | | | | | | | | | | | |
| MD - Peel Strength (lbs/in) | 7.6 | 7.8 | 8.9 | 10.2 | 8.2 | | | | | | **8.5** | 1.1 | 2.1 min |
| **Index Flux (ASTM D5887)** | | | | | | | | | | | | | |
| Index Flux (m$^3$/m$^2$/sec) | | 4.7E-09 | | | | | | | | | **4.7E-09** | | |
| Hydraulic Conductivity (cm/sec) | | 1.6E-09 | | | | | | | | | **1.6E-09** | | |
| **Bentonite - Swell Index (ASTM D5890)** | | | | | | | | | | | | | |
| Swell index (mL/2g) | | 28 | | | | | | | | | **28** | | 24/2g min |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |
| **Bentonite - Fluid Loss (ASTM D5891)** | | | | | | | | | | | | | |
| Slurry temperature at test intiation: | | 23.3 ° C | | | Slurry temperature at test completion: | | | | 21.4 ° C | | | | |
| Fluid Loss (mL) | | 13.6 | | | | | | | | | **13.6** | | 18 max |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |

MD Machine Direction



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**GCL TEST RESULTS**
**TRI Client: Mustang Energy Services**
**Project: OWL Landfill Services LLC - Lea County New Mexico**

**Material: Solmax GSE Bentoliner NSL GCL**
**Sample Identification: 502339457**
**TRI Log #: 51742**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. | PROJ. SPEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| **Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)** | | | | | | | | | | | | | |
| Bentonite mass/unit area (lbs/ft$^2$) | 0.80 | 0.91 | 0.81 | 0.86 | 0.77 | | | | | | **0.83** | 0.06 | 0.81 min |
| Moisture Content (%) | 9.1 | 9.0 | 9.1 | 9.1 | 9.1 | | | | | | **9.1** | 0.0 | 35 max |
| **Mass/Unit Area (ASTM D 5261)** | Nonwoven Geotextile Component - Cap | | | | | | | | | | | | |
| 4" diameter circle (grams) | 1.72 | 1.75 | 1.85 | 1.96 | 2.02 | 1.69 | 1.72 | 1.71 | 1.52 | 1.72 | **1.77** | 0.14 | |
| Mass/Unit Area (oz/sq.yd) | 6.25 | 6.36 | 6.72 | 7.12 | 7.34 | 6.14 | 6.25 | 6.22 | 5.53 | 6.25 | **6.42** | 0.52 | 5.8 min |
| **Peel Strength (ASTM D6496)** | | | | | | | | | | | | | |
| MD - Peel Strength (lbs/in) | 8.8 | 11.5 | 9.6 | 4.8 | 10.2 | | | | | | **9.0** | 2.5 | 2.1 min |
| **Index Flux (ASTM D5887)** | | | | | | | | | | | | | |
| Index Flux (m$^3$/m$^2$/sec) | | 3.6E-09 | | | | | | | | | **3.6E-09** | | |
| Hydraulic Conductivity (cm/sec) | | 1.2E-09 | | | | | | | | | **1.2E-09** | | |
| **Bentonite - Swell Index (ASTM D5890)** | | | | | | | | | | | | | |
| Swell index (mL/2g) | | 28 | | | | | | | | | **28** | | 24/2g min |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |
| **Bentonite - Fluid Loss (ASTM D5891)** | | | | | | | | | | | | | |
| Slurry temperature at test intiation: | | 24.1 | ° C | | Slurry temperature at test completion: | | | | 21.4 | ° C | | | |
| Fluid Loss (mL) | | 13.4 | | | | | | | | | **13.4** | | 18 max |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |

MD Machine Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

November 7, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road Suite 200
P1004
Ft. Worth, TX 76109

email: gabney@mustangextreme.com

**Bill To:**

**<= Same**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51790 |
| Material(s) Tested: | Three, Solmax GSE Bentoliner NSL-35 GCL(s) |
| Test(s) Requested: | Mass/Unit Area (ASTM D5993)<br>Mass/Unit Area (ASTM D5261)<br>Peel Strength (ASTM D6496)<br>Index Flux (ASTM D5887)<br>Bentonite - Swell Index (ASTM D5890)<br>Bentonite - Fluid Loss (ASTM D5891) |

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,



Mansukh Patel
Geosynthetic Services Division

Lead GCL Technical Contact - Jeffrey A. Kuhn, Ph.D., P.E., jkuhn@tri-env.com, 512-952-1212



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**GCL TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE Bentoliner NSL-35 GCL**
**Sample Identification: 502339505**
**TRI Log #: 51790**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. | PROJ. SPEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)** | | | | | | | | | | | | | |
| Bentonite mass/unit area (lbs/ft$^2$) | 0.87 | 0.97 | 0.85 | 0.72 | 0.92 | | | | | | **0.87** | 0.10 | 0.81 min |
| Moisture Content (%) | 11.1 | 11.4 | 11.2 | 10.9 | 11.0 | | | | | | **11.1** | 0.2 | 35 max |
| **Mass/Unit Area (ASTM D 5261)** | Nonwoven Geotextile Component - Cap | | | | | | | | | | | | |
| 4" diameter circle (grams) | 1.97 | 1.71 | 1.51 | 1.49 | 1.73 | 1.86 | 2.32 | 2.14 | 2.13 | 2.12 | **1.90** | 0.28 | |
| Mass/Unit Area (oz/sq.yd) | 7.16 | 6.22 | 5.49 | 5.42 | 6.29 | 6.76 | 8.43 | 7.78 | 7.74 | 7.71 | **6.90** | 1.03 | 5.8 min |
| **Peel Strength (ASTM D6496)** | | | | | | | | | | | | | |
| MD - Peel Strength (lbs/in) | 9.4 | 11.5 | 12.4 | 10.9 | 10.0 | | | | | | **10.8** | 1.2 | 2.1 min |
| **Index Flux (ASTM D5887)** | | | | | | | | | | | | | |
| Index Flux (m$^3$/m$^2$/sec) | | 4.7E-09 | | | | | | | | | **4.7E-09** | | |
| Hydraulic Conductivity (cm/sec) | | 1.2E-09 | | | | | | | | | **1.2E-09** | | |
| **Bentonite - Swell Index (ASTM D5890)** | | | | | | | | | | | | | |
| Swell index (mL/2g) | | 30 | | | | | | | | | **30** | | 24 min |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |
| **Bentonite - Fluid Loss (ASTM D5891)** | | | | | | | | | | | | | |
| Slurry temperature at test intiation: | | 24.4 ° C | | | Slurry temperature at test completion: | | | | 21.5 ° C | | | | |
| Fluid Loss (mL) | | 13.0 | | | | | | | | | **13.0** | | 18 max |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |

MD Machine Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GCL TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE Bentoliner NSL-35 GCL**
**Sample Identification: 502339549**
**TRI Log #: 51790**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. | PROJ. SPEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)** | | | | | | | | | | | | | |
| Bentonite mass/unit area (lbs/ft$^2$) | 0.88 | 0.80 | 0.97 | 0.94 | 0.87 | | | | | | **0.89** | 0.07 | 0.81 min |
| Moisture Content (%) | 12.6 | 11.7 | 11.1 | 12.1 | 11.4 | | | | | | **11.8** | 0.6 | 35 max |
| **Mass/Unit Area (ASTM D 5261)** | Nonwoven Geotextile Component - Cap | | | | | | | | | | | | |
| 4" diameter circle (grams) | 1.71 | 1.90 | 1.87 | 1.67 | 1.55 | 1.70 | 1.78 | 1.58 | 1.89 | 2.01 | **1.77** | 0.15 | |
| Mass/Unit Area (oz/sq.yd) | 6.22 | 6.91 | 6.80 | 6.07 | 5.63 | 6.18 | 6.47 | 5.74 | 6.87 | 7.31 | **6.42** | 0.54 | 5.8 min |
| **Peel Strength (ASTM D6496)** | | | | | | | | | | | | | |
| MD - Peel Strength (lbs/in) | 6.4 | 7.5 | 6.7 | 9.0 | 8.6 | | | | | | **7.6** | 1.2 | 2.1 min |
| **Index Flux (ASTM D5887)** | | | | | | | | | | | | | |
| Index Flux (m$^3$/m$^2$/sec) | | 4.8E-09 | | | | | | | | | **4.8E-09** | | |
| Hydraulic Conductivity (cm/sec) | | 1.4E-09 | | | | | | | | | **1.4E-09** | | |
| **Bentonite - Swell Index (ASTM D5890)** | | | | | | | | | | | | | |
| Swell index (mL/2g) | | 29 | | | | | | | | | **29** | | 24 min |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |
| **Bentonite - Fluid Loss (ASTM D5891)** | | | | | | | | | | | | | |
| Slurry temperature at test intiation: | | 24.1 ° C | | | Slurry temperature at test completion: | | | | 21.6 ° C | | | | |
| Fluid Loss (mL) | | 13.0 | | | | | | | | | **13.0** | | 18 max |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |

MD Machine Direction



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**GCL TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE Bentoliner NSL-35 GCL**
**Sample Identification: 502339593**
**TRI Log #: 51790**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. | PROJ. SPEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bentonite - Mass/Unit Area (ASTM D5993, result @ 0% M.C.)** | | | | | | | | | | | | | |
| Bentonite mass/unit area (lbs/ft$^2$) | 0.79 | 0.98 | 0.90 | 0.84 | 0.82 | | | | | | **0.87** | 0.08 | 0.81 min |
| Moisture Content (%) | 9.1 | 9.0 | 9.1 | 9.1 | 9.3 | | | | | | **9.1** | 0.1 | 35 max |
| **Mass/Unit Area (ASTM D 5261)** | Nonwoven Geotextile Component - Cap | | | | | | | | | | | | |
| 4" diameter circle (grams) | 1.70 | 1.89 | 1.62 | 1.75 | 1.72 | 1.72 | 1.88 | 1.80 | 1.88 | 1.83 | **1.78** | 0.09 | |
| Mass/Unit Area (oz/sq.yd) | 6.18 | 6.87 | 5.89 | 6.36 | 6.25 | 6.25 | 6.83 | 6.54 | 6.83 | 6.65 | **6.47** | 0.33 | 5.8 min |
| **Peel Strength (ASTM D6496)** | | | | | | | | | | | | | |
| MD - Peel Strength (lbs/in) | 11.2 | 12.2 | 9.3 | 7.3 | 8.7 | | | | | | **9.7** | 2.0 | 2.1 min |
| **Index Flux (ASTM D5887)** | | | | | | | | | | | | | |
| Index Flux (m$^3$/m$^2$/sec) | | 3.7E-09 | | | | | | | | | **3.7E-09** | | |
| Hydraulic Conductivity (cm/sec) | | 1.3E-09 | | | | | | | | | **1.3E-09** | | |
| **Bentonite - Swell Index (ASTM D5890)** | | | | | | | | | | | | | |
| Swell index (mL/2g) | | 29 | | | | | | | | | **29** | | 24min |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |
| **Bentonite - Fluid Loss (ASTM D5891)** | | | | | | | | | | | | | |
| Slurry temperature at test intiation: | | 24.6 ° C | | | Slurry temperature at test completion: | | | | 21.5 ° C | | | | |
| Fluid Loss (mL) | | 12.8 | | | | | | | | | **12.8** | | 18 max |
| Note: Bentonite sample tested is taken from finished GCL product. | | | | | | | | | | | | | |

MD Machine Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.3. FML Certifications

# LIST OF GEOMEMBRANE ROLLS

SOLMAX

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
Tel. 1-800-571-3904 • www.solmax.com

SOLMAX APPROVED Quality Assurance

**Project Name :** OWL LF - Jal, NM
**Project Number :** 301454
**Reference Number :** 800568
**Packing Slip Number :** PRE-800568

| Roll Number | Product Code | Resin Lot Number | Manufactured Date | Resin Melt Index 190/2.16 g/10 min D1238 | Resin Density g/cc D1505 | OIT Spec Result min D3895 | HPOIT Spec Result min D5885 | ESCR SP-NCTL Spec Roll Tested hours D5397 |
|---|---|---|---|---|---|---|---|---|
| HDPE 40 mils Black Smooth | | | | | | | | |
| 6-15390 | 1022898 | PKG610990 | 12-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15391 | 1022898 | PKG610990 | 12-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15392 | 1022898 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15393 | 1022898 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15395 | 1022898 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| HDPE 60 mils Black Smooth | | | | | | | | |
| 6-15398 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15399 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15400 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15401 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15402 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15403 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15404 | 1054428 | PKG610990 | 13-Oct-19 | 0.06 | 0.936 | *100* > 120 | | *>500* 6-15337 CERTIFIED |
| 6-15405 | 1054428 | PKG611160 | 13-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15406 | 1054428 | PKG611160 | 13-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15407 | 1054428 | PKG611160 | 13-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15408 | 1054428 | PKG611160 | 13-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15409 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15410 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15411 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |

# LIST OF GEOMEMBRANE ROLLS

SOLMAX

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
Tel. 1-800-571-3904 • www.solmax.com

SOLMAX APPROVED Quality Assurance

Project Name : OWL LF - Jal, NM

Project Number : 301454

Reference Number : 800568

Packing Slip Number : PRE-800568

| Roll Number | Product Code | Resin Lot Number | Manufactured Date | Resin Melt Index 190/2.16 g/10 min D1238 | Resin Density g/cc D1505 | OIT Spec Result min D3895 | HPOIT Spec Result min D5885 | ESCR SP-NCTL Spec Roll Tested hours D5397 |
|---|---|---|---|---|---|---|---|---|
| HDPE 60 mils Black Smooth | | | | | | | | |
| 6-15412 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15413 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15414 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15415 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15416 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15417 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15418 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15419 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15420 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15421 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15422 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15423 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15424 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15425 | 1054428 | PKG611160 | 14-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15426 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15427 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15428 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15429 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15430 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |
| 6-15431 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15407 CERTIFIED |

# LIST OF GEOMEMBRANE ROLLS

SOLMAX

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
Tel. 1-800-571-3904 • www.solmax.com

SOLMAX APPROVED Quality Assurance

**Project Name :** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

| Roll Number | Product Code | Resin Lot Number | Manufactured Date | Resin Melt Index 190/2.16 g/10 min D1238 | Resin Density g/cc D1505 | OIT Spec Result min D3895 | HPOIT Spec Result min D5885 | ESCR SP-NCTL Spec Roll Tested hours D5397 |
|---|---|---|---|---|---|---|---|---|
| HDPE 60 mils Black Smooth | | | | | | | | |
| 6-15432 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15407 CERTIFIED |
| 6-15433 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15407 CERTIFIED |
| 6-15434 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15407 CERTIFIED |
| 6-15435 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15407 CERTIFIED |
| 6-15436 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15407 CERTIFIED |
| 6-15437 | 1054428 | PKG611160 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15407 CERTIFIED |
| 6-15438 | 1054428 | PKG611170 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15439 | 1054428 | PKG611170 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15440 | 1054428 | PKG611170 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15441 | 1054428 | PKG611170 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15442 | 1054428 | PKG611170 | 15-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15443 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15444 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15445 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15446 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15447 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15448 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15449 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15450 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |
| 6-15451 | 1054428 | PKG611170 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | >500 6-15440 CERTIFIED |

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SOLMAX APPROVED Quality Assurance

**Project Name :** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

| Roll Number | Product Code | Resin Lot Number | Manufactured Date | Resin Melt Index 190/2.16 g/10 min D1238 | Resin Density g/cc D1505 | OIT Spec Result min D3895 | HPOIT Spec Result min D5885 | ESCR SP-NCTL Spec Roll Tested hours D5397 |
|---|---|---|---|---|---|---|---|---|
| HDPE 60 mils Black Smooth | | | | | | | | |
| 6-15452 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15453 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15454 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15455 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15456 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15457 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15458 | 1054428 | PKG611250 | 16-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15459 | 1054428 | PKG611250 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15460 | 1054428 | PKG611250 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15461 | 1054428 | PKG611250 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15462 | 1054428 | PKG611250 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-14400 CERTIFIED |
| 6-15463 | 1054428 | PKG611170 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15440 CERTIFIED |
| 6-15464 | 1054428 | PKG611170 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15440 CERTIFIED |
| 6-15465 | 1054428 | PKG611170 | 17-Oct-19 | 0.08 | 0.937 | *100* > 120 | | *>500* 6-15440 CERTIFIED |

**Quantity (rolls) :** 73

Solmax is not a design professional and has not performed any design services to determine if Solmax's goods comply with any project plans or specifications, or with the application or use of Solmax's goods to any particular system, project, purpose, installation or specification.

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# MANUFACTURING QUALITY CONTROL

## Test Results - Rolls

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
Tel. 1-800-571-3904 • www.solmax.com

**Project Name** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

**Product** 1022898

HDPE 40 mils Black Smooth

CE Certificate = HD-40-SS-BB

| Properties | | Thickness ave / min. | Geo-membrane Density | Carbon Black Content | Carbon Black Dispersion | Tensile Yield Strength | Tensile Yield Elong. | Tensile Break Strength | Tensile Break Elong. | Tear Resist. | Puncture Resist. | Dimension. Stability | Asperity Height in / out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unit** | | mils | g/cc | % | Cat. 1 and 2 | ppi | % | ppi | % | lbs | lbs | % | mils |
| **Test Method** | | D5199 | D1505/D792 | D4218 / D1603 | D5596 | D6693 | | | | D1004 | D4833 | D1204 | |
| **Frequency** | | Each roll | | 1/2 ro | 1/10 ro | 1/2 ro | | | | 1/5 ro | 1/5 ro | Certied | N/A |
| **Specification** | | 40.0 / 36.0 | ≥ 0.940 | 2.0 - 3.0 | Cat. 1 - Cat. 2 | 88 | 13 | 162 | 700 | 28 | 80 | ± 2 | |
| **6-15390** | MD | 40.4 / 40 | 0.944 | 2.50 | 10 /10 Views | 99.1 | 18.9 | 210 | 776 | 32.2 | 106.8 | | / |
| | XD | | | | | 108.4 | 16.0 | 212 | 859 | 35.2 | | | |
| **6-15391** | MD | 40.4 / 39 | 0.944 | 2.50 | 10 /10 Views | 99.1 | 18.9 | 210 | 776 | 32.2 | 106.8 | | / |
| | XD | | | | | 108.4 | 16.0 | 212 | 859 | 35.2 | | | |
| **6-15392** | MD | 40.3 / 39 | 0.944 | 2.56 | 10 /10 Views | 97.5 | 18.9 | 205 | 793 | 32.2 | 106.8 | | / |
| | XD | | | | | 104.1 | 15.8 | 219 | 905 | 35.2 | | | |
| **6-15393** | MD | 40.1 / 39 | 0.944 | 2.56 | 10 /10 Views | 97.5 | 18.9 | 205 | 793 | 32.2 | 106.8 | | / |
| | XD | | | | | 104.1 | 15.8 | 219 | 905 | 35.2 | | | |
| **6-15395** | MD | 40.3 / 40 | 0.944 | 2.48 | 10 /10 Views | 98.8 | 18.9 | 206 | 771 | 32.2 | 106.8 | | / |
| | XD | | | | | 106.9 | 16.1 | 215 | 868 | 35.2 | | | |

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## Test Results - Rolls

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
Tel. 1-800-571-3904 • www.solmax.com

**Project Name** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

**Product** 1054428

HDPE 60 mils Black Smooth

CE Certificate = HD-60-SS-BB

| Properties | | Thickness ave / min. | Geo-membrane Density | Carbon Black Content | Carbon Black Dispersion | Tensile Yield Strength | Tensile Yield Elong. | Tensile Break Strength | Tensile Break Elong. | Tear Resist. | Puncture Resist. | Dimension. Stability | Asperity Height in / out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | | mils | g/cc | % | Cat. 1 and 2 | ppi | % | ppi | % | lbs | lbs | % | mils |
| Test Method | | D5199 | D1505/D792 | D4218 / D1603 | D5596 | D6693 | | | | D1004 | D4833 | D1204 | |
| Frequency | | Each roll | | 1/2 ro | 1/10 ro | 1/2 ro | | | | 1/5 ro | 1/5 ro | Certied | N/A |
| Specification | | 60.0 / 54.0 | ≥ 0.940 | 2.0 - 3.0 | Cat. 1 - Cat. 2 | 132 | 13 | 243 | 700 | 42 | 120 | ± 2 | |
| **6-15398** | MD | 60.8 / 59 | 0.944 | 2.60 | 10 /10 Views | 149.9 | 17.7 | 289 | 759 | 46.6 | 143.4 | | / |
| | XD | | | | | 166.4 | 15.1 | 316 | 884 | 51.3 | | | |
| **6-15399** | MD | 62.2 / 61 | 0.944 | 2.60 | 10 /10 Views | 149.9 | 17.7 | 289 | 759 | 46.6 | 143.4 | | / |
| | XD | | | | | 166.4 | 15.1 | 316 | 884 | 51.3 | | | |
| **6-15400** | MD | 61.9 / 60 | 0.944 | 2.52 | 10 /10 Views | 144.7 | 17.9 | 289 | 757 | 46.6 | 143.4 | | / |
| | XD | | | | | 157.8 | 15.8 | 312 | 846 | 51.3 | | | |
| **6-15401** | MD | 61.6 / 60 | 0.944 | 2.52 | 10 /10 Views | 144.7 | 17.9 | 289 | 757 | 46.6 | 143.4 | | / |
| | XD | | | | | 157.8 | 15.8 | 312 | 846 | 51.3 | | | |
| **6-15402** | MD | 61.8 / 61 | 0.944 | 2.60 | 10 /10 Views | 150.3 | 17.5 | 304 | 785 | 46.6 | 143.4 | | / |
| | XD | | | | | 143.2 | 18.1 | 290 | 804 | 51.3 | | | |
| **6-15403** | MD | 61.5 / 60 | 0.944 | 2.60 | 10 /10 Views | 150.3 | 17.5 | 304 | 785 | 48.0 | 141.1 | | / |
| | XD | | | | | 143.2 | 18.1 | 290 | 804 | 51.9 | | | |
| **6-15404** | MD | 61.4 / 60 | 0.944 | 2.72 | 10 /10 Views | 150.3 | 17.5 | 304 | 785 | 48.0 | 141.1 | | / |
| | XD | | | | | 145.1 | 17.6 | 291 | 825 | 51.9 | | | |
| **6-15405** | MD | 61.5 / 61 | 0.944 | 2.72 | 10 /10 Views | 150.3 | 17.5 | 304 | 785 | 48.0 | 141.1 | | / |
| | XD | | | | | 143.2 | 18.1 | 290 | 804 | 51.9 | | | |
| **6-15406** | MD | 60.9 / 60 | 0.944 | 2.52 | 10 /10 Views | 149.2 | 18.0 | 311 | 814 | 48.0 | 141.1 | | / |
| | XD | | | | | 150.2 | 16.6 | 320 | 885 | 51.9 | | | |
| **6-15407** | MD | 60.7 / 59 | 0.944 | 2.52 | 10 /10 Views | 149.2 | 18.0 | 311 | 814 | 48.0 | 141.1 | | / |
| | XD | | | | | 150.2 | 16.6 | 320 | 885 | 51.9 | | | |
| **6-15408** | MD | 61.4 / 60 | 0.946 | 2.52 | 10 /10 Views | 150.4 | 18.3 | 317 | 844 | 46.7 | 143.4 | | / |
| | XD | | | | | 152.1 | 17.1 | 334 | 924 | 51.9 | | | |
| **6-15409** | MD | 60.8 / 59 | 0.946 | 2.52 | 10 /10 Views | 150.4 | 18.3 | 317 | 844 | 46.7 | 143.4 | | / |
| | XD | | | | | 152.1 | 17.1 | 334 | 924 | 51.9 | | | |
| **6-15410** | MD | 60.8 / 59 | 0.946 | 2.49 | 10 /10 Views | 152.1 | 17.8 | 287 | 799 | 46.7 | 143.4 | | / |
| | XD | | | | | 151.6 | 16.6 | 315 | 901 | 51.9 | | | |
| **6-15411** | MD | 62.3 / 60 | 0.946 | 2.49 | 10 /10 Views | 152.1 | 17.8 | 287 | 799 | 46.7 | 143.4 | | / |
| | XD | | | | | 151.6 | 16.6 | 315 | 901 | 51.9 | | | |
| **6-15412** | MD | 61.7 / 61 | 0.946 | 2.52 | 10 /10 Views | 145.6 | 18.3 | 320 | 841 | 46.7 | 143.4 | | / |
| | XD | | | | | 151.1 | 17.1 | 312 | 877 | 51.9 | | | |
| **6-15413** | MD | 61.0 / 60 | 0.946 | 2.52 | 10 /10 Views | 145.6 | 18.3 | 320 | 841 | 46.9 | 142.3 | | / |
| | XD | | | | | 151.1 | 17.1 | 312 | 877 | 51.0 | | | |
| **6-15414** | MD | 61.4 / 61 | 0.946 | 2.46 | 10 /10 Views | 147.1 | 17.7 | 311 | 830 | 46.9 | 142.3 | | / |
| | XD | | | | | 147.4 | 17.3 | 316 | 898 | 51.0 | | | |

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# MANUFACTURING QUALITY CONTROL

## Test Results - Rolls

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
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**Project Name** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

**Product** 1054428

HDPE 60 mils Black Smooth

CE Certificate = HD-60-SS-BB

| Properties | | Thickness ave / min. | Geo-membrane Density | Carbon Black Content | Carbon Black Dispersion | Tensile Yield Strength | Tensile Yield Elong. | Tensile Break Strength | Tensile Break Elong. | Tear Resist. | Puncture Resist. | Dimension. Stability | Asperity Height in / out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | | mils | g/cc | % | Cat. 1 and 2 | ppi | % | ppi | % | lbs | lbs | % | mils |
| Test Method | | D5199 | D1505/D792 | D4218 / D1603 | D5596 | D6693 | | | | D1004 | D4833 | D1204 | |
| Frequency | | Each roll | | 1/2 ro | 1/10 ro | 1/2 ro | | | | 1/5 ro | 1/5 ro | Certied | N/A |
| Specification | | 60.0 / 54.0 | ≥ 0.940 | 2.0 - 3.0 | Cat. 1 - Cat. 2 | 132 | 13 | 243 | 700 | 42 | 120 | ± 2 | |
| **6-15415** | MD | 61.6 / 59 | 0.946 | 2.46 | 10 /10 Views | 147.1 | 17.7 | 311 | 830 | 46.9 | 142.3 | | / |
| | XD | | | | | 147.4 | 17.3 | 316 | 898 | 51.0 | | | |
| **6-15416** | MD | 61.6 / 58 | 0.946 | 2.44 | 10 /10 Views | 155.8 | 17.4 | 297 | 792 | 46.9 | 142.3 | | / |
| | XD | | | | | 154.0 | 16.0 | 292 | 828 | 51.0 | | | |
| **6-15417** | MD | 61.7 / 58 | 0.946 | 2.44 | 10 /10 Views | 155.8 | 17.4 | 297 | 792 | 46.9 | 142.3 | | / |
| | XD | | | | | 154.0 | 16.0 | 292 | 828 | 51.0 | | | |
| **6-15418** | MD | 61.6 / 59 | 0.947 | 2.49 | 10 /10 Views | 154.4 | 17.7 | 304 | 821 | 46.9 | 143.9 | | / |
| | XD | | | | | 158.4 | 16.1 | 318 | 895 | 49.9 | | | |
| **6-15419** | MD | 60.8 / 60 | 0.947 | 2.49 | 10 /10 Views | 154.4 | 17.7 | 304 | 821 | 46.9 | 143.9 | | / |
| | XD | | | | | 158.4 | 16.1 | 318 | 895 | 49.9 | | | |
| **6-15420** | MD | 60.7 / 59 | 0.947 | 2.46 | 10 /10 Views | 152.5 | 17.4 | 291 | 808 | 46.9 | 143.9 | | / |
| | XD | | | | | 142.7 | 17.3 | 302 | 885 | 49.9 | | | |
| **6-15421** | MD | 60.5 / 60 | 0.947 | 2.46 | 10 /10 Views | 152.5 | 17.4 | 291 | 808 | 46.9 | 143.9 | | / |
| | XD | | | | | 142.7 | 17.3 | 302 | 885 | 49.9 | | | |
| **6-15422** | MD | 60.1 / 59 | 0.947 | 2.48 | 10 /10 Views | 149.3 | 18.2 | 312 | 842 | 46.9 | 143.9 | | / |
| | XD | | | | | 150.6 | 17.0 | 313 | 885 | 49.9 | | | |
| **6-15423** | MD | 60.2 / 59 | 0.947 | 2.48 | 10 /10 Views | 149.3 | 18.2 | 312 | 842 | 48.8 | 140.9 | | / |
| | XD | | | | | 150.6 | 17.0 | 313 | 885 | 51.8 | | | |
| **6-15424** | MD | 60.3 / 59 | 0.947 | 2.50 | 10 /10 Views | 153.6 | 17.6 | 313 | 845 | 48.8 | 140.9 | | / |
| | XD | | | | | 148.7 | 17.0 | 309 | 880 | 51.8 | | | |
| **6-15425** | MD | 60.2 / 59 | 0.947 | 2.50 | 10 /10 Views | 153.6 | 17.6 | 313 | 845 | 48.8 | 140.9 | | / |
| | XD | | | | | 148.7 | 17.0 | 309 | 880 | 51.8 | | | |
| **6-15426** | MD | 60.1 / 58 | 0.947 | 2.54 | 10 /10 Views | 154.6 | 18.1 | 306 | 830 | 48.8 | 140.9 | | / |
| | XD | | | | | 156.3 | 16.8 | 299 | 852 | 51.8 | | | |
| **6-15427** | MD | 60.1 / 59 | 0.947 | 2.54 | 10 /10 Views | 154.6 | 18.1 | 306 | 830 | 48.8 | 140.9 | | / |
| | XD | | | | | 156.3 | 16.8 | 299 | 852 | 51.8 | | | |
| **6-15428** | MD | 60.1 / 59 | 0.948 | 2.53 | 10 /10 Views | 153.6 | 17.7 | 294 | 814 | 47.4 | 140.2 | | / |
| | XD | | | | | 155.8 | 16.8 | 303 | 852 | 50.5 | | | |
| **6-15429** | MD | 60.5 / 59 | 0.948 | 2.53 | 10 /10 Views | 153.6 | 17.7 | 294 | 814 | 47.4 | 140.2 | | / |
| | XD | | | | | 155.8 | 16.8 | 303 | 852 | 50.5 | | | |
| **6-15430** | MD | 60.2 / 60 | 0.948 | 2.61 | 10 /10 Views | 151.4 | 17.9 | 311 | 830 | 47.4 | 140.2 | | / |
| | XD | | | | | 155.7 | 16.6 | 303 | 865 | 50.5 | | | |
| **6-15431** | MD | 60.2 / 59 | 0.948 | 2.61 | 10 /10 Views | 151.4 | 17.9 | 311 | 830 | 47.4 | 140.2 | | / |
| | XD | | | | | 155.7 | 16.6 | 303 | 865 | 50.5 | | | |

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# MANUFACTURING QUALITY CONTROL

## Test Results - Rolls

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
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**Project Name** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

**Product** 1054428

HDPE 60 mils Black Smooth

CE Certificate = HD-60-SS-BB

| Properties | | Thickness ave / min. | Geo-membrane Density | Carbon Black Content | Carbon Black Dispersion | Tensile Yield Strength | Tensile Yield Elong. | Tensile Break Strength | Tensile Break Elong. | Tear Resist. | Puncture Resist. | Dimension. Stability | Asperity Height in / out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | | mils | g/cc | % | Cat. 1 and 2 | ppi | % | ppi | % | lbs | lbs | % | mils |
| Test Method | | D5199 | D1505/D792 | D4218 / D1603 | D5596 | D6693 | | | | D1004 | D4833 | D1204 | |
| Frequency | | Each roll | | 1/2 ro | 1/10 ro | 1/2 ro | | | | 1/5 ro | 1/5 ro | Certied | N/A |
| Specification | | 60.0 / 54.0 | ≥ 0.940 | 2.0 - 3.0 | Cat. 1 - Cat. 2 | 132 | 13 | 243 | 700 | 42 | 120 | ± 2 | |
| **6-15432** | MD | 60.1 / 58 | 0.948 | 2.44 | 10 /10 Views | 153.7 | 18.6 | 292 | 791 | 47.4 | 140.2 | | / |
| | XD | | | | | 159.8 | 16.1 | 305 | 856 | 50.5 | | | |
| **6-15433** | MD | 60.4 / 59 | 0.947 | 2.44 | 10 /10 Views | 153.7 | 18.6 | 292 | 791 | 48.1 | 140.6 | | / |
| | XD | | | | | 159.8 | 16.1 | 305 | 856 | 51.6 | | | |
| **6-15434** | MD | 60.8 / 60 | 0.947 | 2.23 | 10 /10 Views | 153.7 | 18.6 | 292 | 791 | 48.1 | 140.6 | | / |
| | XD | | | | | 159.8 | 16.1 | 305 | 856 | 51.6 | | | |
| **6-15435** | MD | 60.8 / 60 | 0.947 | 2.23 | 10 /10 Views | 153.7 | 18.6 | 292 | 791 | 48.1 | 140.6 | | / |
| | XD | | | | | 159.8 | 16.1 | 305 | 856 | 51.6 | | | |
| **6-15436** | MD | 61.1 / 60 | 0.947 | 2.54 | 10 /10 Views | 152.8 | 17.9 | 299 | 800 | 48.1 | 140.6 | | / |
| | XD | | | | | 159.3 | 16.3 | 299 | 842 | 51.6 | | | |
| **6-15437** | MD | 61.1 / 60 | 0.947 | 2.54 | 10 /10 Views | 152.8 | 17.9 | 299 | 800 | 48.1 | 140.6 | | / |
| | XD | | | | | 159.3 | 16.3 | 299 | 842 | 51.6 | | | |
| **6-15438** | MD | 60.5 / 58 | 0.947 | 2.55 | 10 /10 Views | 159.7 | 17.5 | 299 | 806 | 48.9 | 144.0 | | / |
| | XD | | | | | 158.4 | 17.0 | 316 | 857 | 49.8 | | | |
| **6-15439** | MD | 60.8 / 60 | 0.947 | 2.55 | 10 /10 Views | 159.7 | 17.5 | 299 | 806 | 48.9 | 144.0 | | / |
| | XD | | | | | 158.4 | 17.0 | 316 | 857 | 49.8 | | | |
| **6-15440** | MD | 60.9 / 60 | 0.947 | 2.43 | 10 /10 Views | 154.7 | 18.0 | 304 | 815 | 48.9 | 144.0 | | / |
| | XD | | | | | 152.1 | 17.1 | 299 | 866 | 49.8 | | | |
| **6-15441** | MD | 60.7 / 60 | 0.947 | 2.43 | 10 /10 Views | 154.7 | 18.0 | 304 | 815 | 48.9 | 144.0 | | / |
| | XD | | | | | 152.1 | 17.1 | 299 | 866 | 49.8 | | | |
| **6-15442** | MD | 60.8 / 60 | 0.947 | 2.39 | 10 /10 Views | 154.3 | 17.8 | 306 | 824 | 48.9 | 144.0 | | / |
| | XD | | | | | 155.1 | 16.9 | 315 | 892 | 49.8 | | | |
| **6-15443** | MD | 60.6 / 60 | 0.947 | 2.39 | 10 /10 Views | 154.3 | 17.8 | 306 | 824 | 48.3 | 144.1 | | / |
| | XD | | | | | 155.1 | 16.9 | 315 | 892 | 51.4 | | | |
| **6-15444** | MD | 60.2 / 59 | 0.947 | 2.64 | 10 /10 Views | 156.5 | 18.0 | 306 | 824 | 48.3 | 144.1 | | / |
| | XD | | | | | 155.3 | 16.8 | 301 | 839 | 51.4 | | | |
| **6-15445** | MD | 60.3 / 59 | 0.947 | 2.64 | 10 /10 Views | 156.5 | 18.0 | 306 | 824 | 48.3 | 144.1 | | / |
| | XD | | | | | 155.3 | 16.8 | 301 | 839 | 51.4 | | | |
| **6-15446** | MD | 60.3 / 59 | 0.947 | 2.39 | 10 /10 Views | 151.2 | 18.0 | 309 | 832 | 48.3 | 144.1 | | / |
| | XD | | | | | 152.5 | 16.6 | 310 | 910 | 51.4 | | | |
| **6-15447** | MD | 60.5 / 59 | 0.947 | 2.39 | 10 /10 Views | 151.2 | 18.0 | 309 | 832 | 48.3 | 144.1 | | / |
| | XD | | | | | 152.5 | 16.6 | 310 | 910 | 51.4 | | | |
| **6-15448** | MD | 60.3 / 59 | 0.948 | 2.56 | 10 /10 Views | 144.3 | 18.2 | 307 | 838 | 44.3 | 142.9 | | / |
| | XD | | | | | 148.1 | 16.9 | 312 | 885 | 50.1 | | | |

SOLMAX

# MANUFACTURING QUALITY CONTROL

## Test Results - Rolls

Solmax, 8615 Golden Spike LN, Houston, Texas, 77086, USA
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**Project Name** OWL LF - Jal, NM

**Project Number :** 301454

**Reference Number :** 800568

**Packing Slip Number :** PRE-800568

**Product** 1054428

HDPE 60 mils Black Smooth

CE Certificate = HD-60-SS-BB

| Properties | | Thickness ave / min. | Geo-membrane Density | Carbon Black Content | Carbon Black Dispersion | Tensile Yield Strength | Tensile Yield Elong. | Tensile Break Strength | Tensile Break Elong. | Tear Resist. | Puncture Resist. | Dimension. Stability | Asperity Height in / out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unit | | mils | g/cc | % | Cat. 1 and 2 | ppi | % | ppi | % | lbs | lbs | % | mils |
| Test Method | | D5199 | D1505/D792 | D4218 / D1603 | D5596 | D6693 | | | | D1004 | D4833 | D1204 | |
| Frequency | | Each roll | | 1/2 ro | 1/10 ro | 1/2 ro | | | | 1/5 ro | 1/5 ro | Certied | N/A |
| Specification | | 60.0 / 54.0 | ≥ 0.940 | 2.0 - 3.0 | Cat. 1 - Cat. 2 | 132 | 13 | 243 | 700 | 42 | 120 | ± 2 | |
| **6-15449** | MD | 60.5 / 60 | 0.948 | 2.56 | 10 /10 Views | 144.3 | 18.2 | 307 | 838 | 44.3 | 142.9 | | / |
| | XD | | | | | 148.1 | 16.9 | 312 | 885 | 50.1 | | | |
| **6-15450** | MD | 60.5 / 59 | 0.948 | 2.48 | 10 /10 Views | 155.4 | 17.9 | 300 | 790 | 44.3 | 142.9 | | / |
| | XD | | | | | 156.8 | 16.4 | 305 | 856 | 50.1 | | | |
| **6-15451** | MD | 60.1 / 58 | 0.948 | 2.48 | 10 /10 Views | 155.4 | 17.9 | 300 | 790 | 44.3 | 142.9 | | / |
| | XD | | | | | 156.8 | 16.4 | 305 | 856 | 50.1 | | | |
| **6-15452** | MD | 60.2 / 59 | 0.948 | 2.60 | 10 /10 Views | 148.1 | 18.1 | 305 | 808 | 44.3 | 142.9 | | / |
| | XD | | | | | 154.3 | 16.4 | 314 | 892 | 50.1 | | | |
| **6-15453** | MD | 60.1 / 59 | 0.948 | 2.60 | 10 /10 Views | 148.1 | 18.1 | 305 | 808 | 49.2 | 144.4 | | / |
| | XD | | | | | 154.3 | 16.4 | 314 | 892 | 53.8 | | | |
| **6-15454** | MD | 60.5 / 59 | 0.948 | 2.51 | 10 /10 Views | 152.8 | 17.6 | 309 | 802 | 49.2 | 144.4 | | / |
| | XD | | | | | 160.1 | 16.4 | 302 | 846 | 53.8 | | | |
| **6-15455** | MD | 60.9 / 60 | 0.948 | 2.51 | 10 /10 Views | 152.8 | 17.6 | 309 | 802 | 49.2 | 144.4 | | / |
| | XD | | | | | 160.1 | 16.4 | 302 | 846 | 53.8 | | | |
| **6-15456** | MD | 61.8 / 60 | 0.948 | 2.51 | 10 /10 Views | 154.0 | 17.0 | 301 | 840 | 49.2 | 144.4 | | / |
| | XD | | | | | 145.5 | 16.6 | 322 | 901 | 53.8 | | | |
| **6-15457** | MD | 61.0 / 60 | 0.948 | 2.51 | 10 /10 Views | 154.0 | 17.0 | 301 | 840 | 49.2 | 144.4 | | / |
| | XD | | | | | 145.5 | 16.6 | 322 | 901 | 53.8 | | | |
| **6-15458** | MD | 60.8 / 59 | 0.945 | 2.60 | 10 /10 Views | 152.2 | 17.5 | 304 | 821 | 47.1 | 139.5 | | / |
| | XD | | | | | 152.7 | 16.0 | 308 | 879 | 51.2 | | | |
| **6-15459** | MD | 60.2 / 59 | 0.945 | 2.60 | 10 /10 Views | 152.2 | 17.5 | 304 | 821 | 47.1 | 139.5 | | / |
| | XD | | | | | 152.7 | 16.0 | 308 | 879 | 51.2 | | | |
| **6-15460** | MD | 60.1 / 59 | 0.945 | 2.72 | 10 /10 Views | 148.7 | 17.2 | 307 | 851 | 47.1 | 139.5 | | / |
| | XD | | | | | 154.9 | 16.5 | 300 | 836 | 51.2 | | | |
| **6-15461** | MD | 60.2 / 59 | 0.945 | 2.72 | 10 /10 Views | 148.7 | 17.2 | 307 | 851 | 47.1 | 139.5 | | / |
| | XD | | | | | 154.9 | 16.5 | 300 | 836 | 51.2 | | | |
| **6-15462** | MD | 60.6 / 60 | 0.945 | 2.46 | 10 /10 Views | 154.4 | 17.3 | 301 | 791 | 47.1 | 139.5 | | / |
| | XD | | | | | 160.9 | 15.9 | 322 | 915 | 51.2 | | | |
| **6-15463** | MD | 60.1 / 59 | 0.944 | 2.46 | 10 /10 Views | 154.4 | 17.3 | 301 | 791 | 47.8 | 139.6 | | / |
| | XD | | | | | 160.9 | 15.9 | 322 | 915 | 51.0 | | | |
| **6-15464** | MD | 60.2 / 58 | 0.944 | 2.45 | 10 /10 Views | 147.5 | 17.8 | 297 | 796 | 47.8 | 139.6 | | / |
| | XD | | | | | 156.9 | 16.1 | 308 | 881 | 51.0 | | | |
| **6-15465** | MD | 60.0 / 59 | 0.944 | 2.45 | 10 /10 Views | 147.5 | 17.8 | 297 | 796 | 47.8 | 139.6 | | / |
| | XD | | | | | 156.9 | 16.1 | 308 | 881 | 51.0 | | | |

CPChem

CoA Date: 10/04/2019

# Certificate of Analysis

Shipped To: SOLMAX USA
8615 Golden Spike Ln
HOUSTON TX 77086-3238
USA

Recipient: Giguere
Fax:

Delivery #: 80054756
PO #: 100964
Weight: 48,000 LB (est.)
Ship Date: 10/04/2019
Package: BULK
Mode: Hopper Truck

Product:
MARLEX K306 POLYETHYLENE in Bulk
Additive levels have been tested and meet minimum the specification for this lot.
As a result, Standard OIT (by ASTM D 3895) is greater than 120 minutes (nominal value, not tested on every lot).
As a result, High Pressure OIT (by ASTM D 5885) is greater than 1000 minutes (nominal value, not tested on every lot).

Lot Number: PKG610990

| Property | Test Method | Value | Unit |
|---|---|---|---|
| Melt Index | ASTM D1238 | 0.060 | g/10min |
| HLMI Flow Rate | ASTM D1238 | 9.40 | g/10min |
| Density | D1505 or D4883 | 0.9360 | g/cm3 |

The date set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

Erin Xiao
Quality Systems Coordinator

For CoA questions contact Melissa Alexander at + -832-813-4244

CoA Date: 10/07/2019

# Certificate of Analysis

Shipped To: SOLMAX USA
8615 Golden Spike Ln
HOUSTON TX 77086-3238
USA

Recipient: Giguere
Fax:

Delivery #: 80055661
PO #: 100990
Weight: 48,000 LB (est.)
Ship Date: 10/08/2019
Package: BULK
Mode: Hopper Truck

Product:
MARLEX K306 POLYETHYLENE in Bulk
Additive levels have been tested and meet minimum the specification for this lot.
As a result, Standard OIT (by ASTM D 3895) is greater than 120 minutes (nominal value, not tested on every lot).
As a result, High Pressure OIT (by ASTM D 5885) is greater than 1000 minutes (nominal value, not tested on every lot).

Lot Number: PKG611160

| Property | Test Method | Value | Unit |
|---|---|---|---|
| Melt Index | ASTM D1238 | 0.080 | g/10min |
| HLMI Flow Rate | ASTM D1238 | 11.10 | g/10min |
| Density | D1505 or D4883 | 0.9370 | g/cm3 |

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

Erin Xiao
Quality Systems Coordinator

For CoA questions contact Melissa Alexander at + -832-813-4244

CPChem

CoA Date: 10/11/2019

# Certificate of Analysis

Shipped To: SOLMAX USA
8615 Golden Spike Ln
HOUSTON TX 77086-3238
USA

Recipient: Giguere
Fax:

Delivery #: 80055664
PO #: 100990
Weight: 48,000 LB (est.)
Ship Date: 10/11/2019
Package: BULK
Mode: Hopper Truck

Product:
MARLEX K306 POLYETHYLENE in Bulk
Additive levels have been tested and meet minimum the specification for this lot.
As a result, Standard OIT (by ASTM D 3895) is greater than 120 minutes (nominal value, not tested on every lot).
As a result, High Pressure OIT (by ASTM D 5885) is greater than 1000 minutes (nominal value, not tested on every lot).

Lot Number: PKG611170

| Property | Test Method | Value | Unit |
|---|---|---|---|
| Melt Index | ASTM D1238 | 0.080 | g/10min |
| HLMI Flow Rate | ASTM D1238 | 10.90 | g/10min |
| Density | D1505 or D4883 | 0.9370 | g/cm3 |

Silo # 10

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

Erin Xiao
Quality Systems Coordinator

For CoA questions contact Melissa Alexander at + -832-813-4244

CPChem

CoA Date: 07/31/2019

# Certificate of Analysis

Shipped To: SOLMAX USA
8615 Golden Spike Ln
HOUSTON TX 77086-3238
USA

Recipient: Giguere
Fax:

Delivery #: 80008173
PO #: 100876
Weight: 48,000 LB (est.)
Ship Date: 08/01/2019
Package: BULK
Mode: Hopper Truck

Product:
MARLEX K306 POLYETHYLENE in Bulk
Additive levels have been tested and meet minimum the specification for this lot.
As a result, Standard OIT (by ASTM D 3895) is greater than 120 minutes (nominal value, not tested on every lot).
As a result, High Pressure OIT (by ASTM D 5885) is greater than 1000 minutes (nominal value, not tested on every lot).

Lot Number: PKG611250

| Property | Test Method | Value | Unit |
|---|---|---|---|
| Melt Index | ASTM D1238 | 0.080 | g/10min |
| HLMI Flow Rate | ASTM D1238 | 10.10 | g/10min |
| Density | D1505 or D4883 | 0.9370 | g/cm3 |

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

Troy Griffin
Quality Systems Coordinator

For CoA questions contact Melissa Alexander at + -832-813-4244

# GSE Roll Allocation

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TEXTURED FML

| Roll# | Resin Lot | Product Code | Mfg Date | Length |
|---|---|---|---|---|
| 104196553 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/23/2019 | 520 |
| 104196554 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/23/2019 | 520 |
| 104196555 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/23/2019 | 520 |
| 104196556 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/23/2019 | 520 |
| 104196557 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/23/2019 | 520 |
| 104196558 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/23/2019 | 520 |
| 104196559 | 19H1007 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196564 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196565 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196566 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196567 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196568 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196570 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196571 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196572 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196573 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196574 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/24/2019 | 520 |
| 104196575 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196576 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196577 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196578 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196579 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196580 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196581 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196582 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196583 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196584 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196585 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |
| 104196586 | 19H1333 | HDT-060GE-BBB-B-W0 | 10/25/2019 | 520 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/28/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | HDT-060GE-BBB-B-W0 | |

| Roll Number | Average Thickness ASTM D5994 (mils) | Minimum Thickness ASTM D5994 (mils) | Yield Strength ASTM D6693 (ppi) MD | Yield Strength ASTM D6693 (ppi) TD | Yield Elongation ASTM D6693 (%) MD | Yield Elongation ASTM D6693 (%) TD | Break Strength ASTM D6693 (ppi) MD | Break Strength ASTM D6693 (ppi) TD | Break Elongation ASTM D6693 (%) MD | Break Elongation ASTM D6693 (%) TD | Tear Resistance ASTM D1004 (lbs) MD | Tear Resistance ASTM D1004 (lbs) TD | Puncture Resistance ASTM D4833 (lbs) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Carbon Black Dispersion ASTM D5596 (Views in Cat1-Cat2) | Asperity Height ASTM D7466 (mils) A Side | Asperity Height ASTM D7466 (mils) B Side |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 104196553 | 58 | 53 | 145 | 145 | 18 | 18 | 210 | 175 | 580 | 526 | 55 | 51 | 145 | 0.941 | 2.3 | 10 | 23 | 26 |
| 104196554 | 61 | 57 | 153 | 153 | 17 | 17 | 208 | 182 | 601 | 583 | 52 | 50 | 146 | 0.942 | 2.3 | 10 | 24 | 25 |
| 104196555 | 61 | 55 | 153 | 153 | 17 | 17 | 208 | 182 | 601 | 583 | 52 | 50 | 146 | 0.942 | 2.3 | 10 | 24 | 25 |
| 104196556 | 59 | 55 | 148 | 153 | 18 | 17 | 209 | 168 | 597 | 509 | 52 | 50 | 146 | 0.942 | 2.3 | 10 | 24 | 25 |
| 104196557 | 58 | 54 | 148 | 153 | 18 | 17 | 209 | 168 | 597 | 509 | 52 | 50 | 146 | 0.942 | 2.3 | 10 | 24 | 25 |
| 104196558 | 59 | 55 | 147 | 149 | 18 | 18 | 201 | 188 | 574 | 573 | 56 | 52 | 145 | 0.942 | 2.3 | 10 | 23 | 24 |
| 104196559 | 59 | 54 | 147 | 149 | 18 | 18 | 201 | 188 | 574 | 573 | 56 | 52 | 145 | 0.942 | 2.3 | 10 | 23 | 24 |
| 104196564 | 59 | 54 | 148 | 150 | 18 | 18 | 201 | 184 | 555 | 554 | 56 | 52 | 145 | 0.942 | 2.3 | 10 | 23 | 23 |
| 104196565 | 63 | 61 | 148 | 150 | 18 | 18 | 201 | 184 | 555 | 554 | 56 | 52 | 145 | 0.942 | 2.3 | 10 | 23 | 23 |
| 104196566 | 63 | 61 | 153 | 153 | 18 | 18 | 220 | 190 | 586 | 556 | 57 | 53 | 145 | 0.942 | 2.3 | 10 | 24 | 22 |
| 104196567 | 63 | 61 | 153 | 153 | 18 | 18 | 220 | 190 | 586 | 556 | 57 | 53 | 145 | 0.942 | 2.3 | 10 | 24 | 22 |
| 104196568 | 62 | 61 | 151 | 159 | 17 | 18 | 209 | 179 | 585 | 494 | 57 | 53 | 145 | 0.941 | 2.3 | 10 | 24 | 22 |
| 104196570 | 62 | 60 | 151 | 159 | 17 | 18 | 209 | 179 | 585 | 494 | 57 | 53 | 145 | 0.941 | 2.3 | 10 | 24 | 22 |
| 104196571 | 58 | 56 | 154 | 155 | 18 | 18 | 215 | 175 | 586 | 452 | 55 | 54 | 146 | 0.941 | 2.4 | 10 | 23 | 25 |
| 104196572 | 59 | 54 | 154 | 155 | 18 | 18 | 215 | 175 | 586 | 452 | 55 | 54 | 146 | 0.941 | 2.4 | 10 | 23 | 25 |
| 104196573 | 58 | 52 | 155 | 151 | 17 | 17 | 195 | 214 | 578 | 618 | 55 | 54 | 146 | 0.941 | 2.4 | 10 | 25 | 25 |
| 104196574 | 58 | 56 | 155 | 151 | 17 | 17 | 195 | 214 | 578 | 618 | 55 | 54 | 146 | 0.941 | 2.4 | 10 | 25 | 25 |
| 104196575 | 58 | 56 | 147 | 150 | 18 | 18 | 203 | 171 | 548 | 492 | 52 | 50 | 145 | 0.941 | 2.3 | 10 | 25 | 24 |
| 104196576 | 58 | 55 | 147 | 150 | 18 | 18 | 203 | 171 | 548 | 492 | 52 | 50 | 145 | 0.941 | 2.3 | 10 | 25 | 24 |
| 104196577 | 59 | 55 | 144 | 154 | 17 | 18 | 209 | 184 | 611 | 569 | 52 | 50 | 145 | 0.941 | 2.3 | 10 | 25 | 25 |
| 104196578 | 58 | 57 | 144 | 154 | 17 | 18 | 209 | 184 | 611 | 569 | 52 | 50 | 145 | 0.941 | 2.3 | 10 | 25 | 25 |
| 104196579 | 62 | 61 | 144 | 149 | 18 | 17 | 204 | 177 | 574 | 546 | 54 | 54 | 145 | 0.942 | 2.4 | 10 | 25 | 25 |
| 104196580 | 62 | 60 | 144 | 149 | 18 | 17 | 204 | 177 | 574 | 546 | 54 | 54 | 145 | 0.942 | 2.4 | 10 | 25 | 25 |
| 104196581 | 62 | 60 | 151 | 157 | 18 | 18 | 208 | 177 | 583 | 533 | 54 | 54 | 145 | 0.942 | 2.4 | 10 | 24 | 23 |
| 104196582 | 62 | 60 | 151 | 157 | 18 | 18 | 208 | 177 | 583 | 533 | 54 | 54 | 145 | 0.942 | 2.4 | 10 | 24 | 23 |
| 104196583 | 62 | 60 | 158 | 160 | 18 | 18 | 191 | 159 | 508 | 406 | 57 | 55 | 150 | 0.942 | 2.3 | 10 | 24 | 23 |
| 104196584 | 62 | 60 | 158 | 160 | 18 | 18 | 191 | 159 | 508 | 406 | 57 | 55 | 150 | 0.942 | 2.3 | 10 | 24 | 23 |
| 104196585 | 62 | 61 | 158 | 160 | 18 | 18 | 191 | 159 | 508 | 406 | 57 | 55 | 150 | 0.942 | 2.3 | 10 | 26 | 26 |
| 104196586 | 58 | 56 | 160 | 158 | 18 | 18 | 191 | 159 | 508 | 406 | 57 | 55 | 150 | 0.942 | 2.3 | 10 | 26 | 26 |

**Laboratory Manager**

This test report shall not be reproduced, except in full, without written approval of the laboratory.

Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS
201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT TX 77978
PHONE:( 888 )FPCUSA3

# Certificate of Analysis

(CONFIDENTIAL)

CUSTOMER:GSE ENVIRONMENTAL, LLC
UP TRACK 14732 WESTFIELD
19103 GUNDLE ROAD
HOUSTON TX 77070
PRODUCT :HL3812
RAILCAR TILX622202

S/O NO : EU8A947
CUSTOMER PO : 03-516802
DATE SHIPPED: 9/06/19
LOT NO : 19H1007
WEIGHT (LB) : 192,150.00
CUSTID:FT03112 SPIDE3
DATE OF PROD: 8/02/19

| TEST ITEM | REFERENCE METHOD | TEST VALUE |
|---|---|---|
| Melt Index,g/10min | ASTM D1238 | .081 |
| HLMI, g/10 min. | ASTM D1238 | 11.8 |
| Density, g/cm3 | ASTM D1505 | .9390 |

Notes:
the OIT (>120 min. ) and HP-OIT (>1000 min.) Values are based on the l
ot having the Minimum Additive Levels ( Antioxidants and UV) in the HL
3812 specification. OIT and HP-OIT values are not tested for every lo
t.

Linda Kao

QC SUPERVISOR: LINDA KAO

Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS

201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT TX 77978
PHONE:( 888 )FPCUSA3

# Certificate of Analysis

(CONFIDENTIAL)

CUSTOMER:GSE ENVIRONMENTAL, LLC
UP TRACK 14732 WESTFIELD
19103 GUNDLE ROAD
HOUSTON TX 77070
PRODUCT :HL3812
RAILCAR MBKX175011
CLEANING/INSPECTION NO: 175011082919

S/O NO : EU8A952
CUSTOMER PO : 03-516802
DATE SHIPPED: 9/13/19
LOT NO : 19H1333
WEIGHT (LB) : 195,950.00
CUSTID:FT03112 SPIDE3

DATE OF PROD: 8/29/19

| TEST ITEM | REFERENCE METHOD | TEST VALUE |
|---|---|---|
| Melt Index,g/10min | ASTM D1238 | .070 |
| HLMI, g/10 min. | ASTM D1238 | 10.9 |
| Density, g/cm3 | ASTM D1505 | .9383 |

Notes:
the OIT (>120 min. ) and HP-OIT (>1000 min.) Values are based on the l
ot having the Minimum Additive Levels ( Antioxidants and UV) in the HL
3812 specification. OIT and HP-OIT values are not tested for every lo
t.

Linda Kao

QC SUPERVISOR: LINDA KAO

Report Date
10/28/2019

SOLMAX

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG / OWL LANNDFILL
**Sales Order:** 88056

**Required Testing:** ASTM D 1238, 190 / 2.16 -- Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

**Frequency:** 1/Resin Lot

**Specification:** ≤ 1.0 g/10 minutes

| Product Code | Lot Number | Result |
|---|---|---|
| HDT-060GE-BBB-B-W0 | 19H1007 | 0.08 |
| HDT-060GE-BBB-B-W0 | 19H1333 | 0.07 |

| | |
|---|---|
| Approved by: | Daniel Vasquez |
| Date: | October 28, 2019 |

*The above stated data shall not be reproduced except in full, without the written approval of the laboratory.*

Report Date
10/28/2019

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG / OWL LANNDFILL
**Sales Order:** 88056

**Required Testing:** ASTM D 3895 -- Standard Test Method for Oxidative Induction Time of Polyolefins by Differential Scanning Calorimetry
ASTM D 5397 -- Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test

**Specification:** D 3895 - > 100 Minutes
D 5397 - > 500 Hours

**Frequency:** 1/200,000 lbs.

| Product Code | Resin Lot Number | Test Results |
|---|---|---|
| HDT-060GE-BBB-B-W0 | 19H1007 | PASS |
| HDT-060GE-BBB-B-W0 | 19H1333 | PASS |

| | |
|---|---|
| Approved By: | Daniel Vasquez |
| Date Approved: | October 28, 2019 |

*The above stated data shall not be reproduced except in full, without the written approval of the laboratory.*

Report Date
10/28/2019

SOLMAX

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG / OWL LANNDFILL
**SO Number:** 88056

The table below summarizes additive performance of GSE Houston products as perceived by OIT retention after UV and Oven Aging per GRI Test Method GM13:

| | | Oven Aging @ 85° C (ASTM D 5721) | | | | UV Resistance per GRI GM11 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 90 days per ASTM D 5885 | | | | 1600 hours UV Aging per ASTM D 5885 | | | |
| **Product Type** | **Formulation** | Initial HP OIT (min) | Final HP OIT (min) | Retained (%) | GRI Criteria (%) | Initial HP OIT (min) | Final HP OIT (min) | Retained (%) | GRI Criteria (%) |
| HDPE Geomembrane | Formosa HL3812 | 744 | 674 | 90 | 80 | 744 | 700 | 95 | 50 |

| | |
|---|---|
| Approved By: | Daniel Vasquez |
| Date: | October 28, 2019 |

*The above stated data shall not be reproduced except in full, without the written approval of the laboratory.*

Report Date
10/28/2019

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG / OWL LANNDFILL
**Sales Order:** 88056

**Required Testing:** ASTM D 1204 -- Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature

**Specification:** +/- 2%

| Product Code | Resin Lot | Results |
|---|---|---|
| HDT-060GE-BBB-B-W0 | 19H1007 | PASS |
| HDT-060GE-BBB-B-W0 | 19H1333 | PASS |

| | |
|---|---|
| Approved By: | Daniel Vasquez |
| Date Approved: | October 28, 2019 |

*The above stated data shall not be reproduced except in full, without the written approval of the laboratory.*

Report Date
10/28/2019

SOLMAX

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG / OWL LANNDFILL
**SO Number:** 88056

**Test:** ASTM D 746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.

**Specification:** -106° F

| Product Code | Lot Number | Results |
|---|---|---|
| HDT-060GE-BBB-B-W0 | 19H1007 | PASS |
| HDT-060GE-BBB-B-W0 | 19H1333 | PASS |

| | |
|---|---|
| Approved By: | Daniel Vasquez |
| Date Approved: | October 28, 2019 |

*The above stated data shall not be reproduced except in full, without the written approval of the laboratory.*

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.4. FML Conformance Testing Results

October 31, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road, Suite 200
P1004
Ft. Worth, TX 76109.

email: sroeder@mustangenergyservices.com

**Bill To:**

**<= Same (P.O. # 301445)**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51546 |
| Material(s) Tested: | Nine, Solmax 60 mil Smooth HDPE Geomembrane(s) |
| Test(s) Requested: | Thickness (ASTM D 5199)<br>Density (ASTM D 1505)<br>Carbon Black Content (ASTM D 1603, mod.)<br>Carbon Dispersion (ASTM D 5596)<br>Tensile Properties (ASTM D 6693)<br>Tear Resistance (ASTM D 1004) |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15398**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 63.4 | 63.9 | 63.3 | 62.1 | 61.6 | 61.9 | 60.8 | 61.0 | 61.4 | 62.2 | **62.2** | 1.1 |
| | | | | | | | | | | | **60.8** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.945 | 0.945 | 0.945 | | | | | | | | **0.945** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.37 | 2.40 | | | | | | | | | **2.39** | 0.02 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 168 | 160 | 161 | 167 | 165 | | | | | | **164** | 4 |
| TD Yield Strength (ppi) | 166 | 160 | 162 | 161 | 164 | | | | | | **163** | 2 |
| MD Break Strength (ppi) | 297 | 271 | 224 | 281 | 316 | | | | | | **278** | 35 |
| TD Break Strength (ppi) | 316 | 322 | 292 | 317 | 327 | | | | | | **315** | 13 |
| MD Yield Elongation (%) | 20 | 20 | 20 | 20 | 20 | | | | | | **20** | 0 |
| TD Yield Elongation (%) | 18 | 18 | 18 | 19 | 18 | | | | | | **18** | 0 |
| MD Break Elongation (%) | 752 | 719 | 606 | 726 | 822 | | | | | | **725** | 78 |
| TD Break Elongation (%) | 836 | 879 | 799 | 874 | 878 | | | | | | **853** | 35 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 50 | 51 | 53 | 50 | 51 | 51 | 50 | 51 | 50 | 50 | **51** | 1 |
| TD Tear Strength (lbs) | 47 | 46 | 50 | 50 | 49 | 49 | 47 | 47 | 47 | 48 | **48** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15422**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 62.0 | 60.5 | 59.8 | 61.5 | 61.9 | 61.0 | 61.6 | 60.2 | 61.2 | 60.1 | **61.0** | 0.8 |
| | | | | | | | | | | | **59.8** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.944 | 0.944 | 0.944 | | | | | | | | **0.944** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.45 | 2.46 | | | | | | | | | **2.46** | 0.01 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 151 | 150 | 156 | 148 | 150 | | | | | | **151** | 3 |
| TD Yield Strength (ppi) | 160 | 154 | 154 | 160 | 160 | | | | | | **158** | 3 |
| MD Break Strength (ppi) | 289 | 281 | 300 | 279 | 307 | | | | | | **291** | 12 |
| TD Break Strength (ppi) | 288 | 275 | 294 | 297 | 270 | | | | | | **285** | 12 |
| MD Yield Elongation (%) | 20 | 18 | 19 | 18 | 20 | | | | | | **19** | 1 |
| TD Yield Elongation (%) | 19 | 17 | 18 | 19 | 20 | | | | | | **19** | 1 |
| MD Break Elongation (%) | 785 | 780 | 804 | 786 | 842 | | | | | | **799** | 25 |
| TD Break Elongation (%) | 813 | 797 | 854 | 835 | 760 | | | | | | **812** | 36 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 53 | 52 | 49 | 50 | 51 | 51 | 51 | 51 | 50 | 49 | **51** | 1 |
| TD Tear Strength (lbs) | 50 | 49 | 47 | 47 | 48 | 48 | 48 | 48 | 48 | 48 | **48** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15430**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 61.6 | 62.2 | 60.0 | 59.6 | 61.5 | 60.3 | 60.7 | 60.5 | 59.7 | 60.4 | **60.7** | 0.9 |
| | | | | | | | | | | | **59.6** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.946 | 0.946 | 0.946 | | | | | | | | **0.946** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.55 | 2.52 | | | | | | | | | **2.54** | 0.02 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 157 | 152 | 155 | 149 | 155 | | | | | | **154** | 3 |
| TD Yield Strength (ppi) | 156 | 159 | 158 | 157 | 161 | | | | | | **158** | 2 |
| MD Break Strength (ppi) | 329 | 282 | 294 | 239 | 301 | | | | | | **289** | 33 |
| TD Break Strength (ppi) | 284 | 311 | 278 | 304 | 292 | | | | | | **294** | 14 |
| MD Yield Elongation (%) | 20 | 20 | 20 | 21 | 21 | | | | | | **20** | 1 |
| TD Yield Elongation (%) | 18 | 19 | 20 | 19 | 19 | | | | | | **19** | 1 |
| MD Break Elongation (%) | 888 | 775 | 796 | 687 | 805 | | | | | | **790** | 72 |
| TD Break Elongation (%) | 804 | 883 | 808 | 874 | 827 | | | | | | **839** | 37 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 51 | 50 | 50 | 51 | 51 | 52 | 52 | 50 | 50 | 49 | **51** | 1 |
| TD Tear Strength (lbs) | 48 | 47 | 49 | 48 | 48 | 49 | 48 | 48 | 48 | 48 | **48** | 0 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15438**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 62.8 | 61.6 | 62.8 | 62.0 | 61.7 | 61.4 | 61.0 | 62.3 | 60.7 | 60.9 | **61.7** | 0.8 |
| | | | | | | | | | | | **60.7** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.945 | 0.945 | 0.945 | | | | | | | | **0.945** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.42 | 2.45 | | | | | | | | | **2.44** | 0.02 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 153 | 153 | 153 | 155 | 153 | | | | | | **153** | 1 |
| TD Yield Strength (ppi) | 161 | 158 | 158 | 164 | 58 | | | | | | **140** | 46 |
| MD Break Strength (ppi) | 274 | 272 | 288 | 294 | 308 | | | | | | **287** | 15 |
| TD Break Strength (ppi) | 310 | 293 | 294 | 291 | 313 | | | | | | **300** | 10 |
| MD Yield Elongation (%) | 19 | 18 | 20 | 20 | 20 | | | | | | **19** | 1 |
| TD Yield Elongation (%) | 18 | 18 | 19 | 19 | 18 | | | | | | **18** | 1 |
| MD Break Elongation (%) | 748 | 754 | 786 | 801 | 840 | | | | | | **786** | 37 |
| TD Break Elongation (%) | 868 | 828 | 846 | 816 | 886 | | | | | | **849** | 29 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 52 | 50 | 52 | 52 | 51 | 52 | 51 | 51 | 52 | 51 | **51** | 1 |
| TD Tear Strength (lbs) | 49 | 49 | 50 | 50 | 50 | 50 | 49 | 49 | 50 | 49 | **50** | 0 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15406**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 62.6 | 63.6 | 62.5 | 60.7 | 62.0 | 62.5 | 60.4 | 60.8 | 61.0 | 60.5 | **61.7** | 1.1 |
| | | | | | | | | | | | **60.4** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.944 | 0.944 | 0.944 | | | | | | | | **0.944** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.43 | 2.45 | | | | | | | | | **2.44** | 0.01 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 154 | 153 | 155 | 152 | 151 | | | | | | **153** | 2 |
| TD Yield Strength (ppi) | 153 | 151 | 159 | 149 | 154 | | | | | | **153** | 4 |
| MD Break Strength (ppi) | 290 | 280 | 300 | 303 | 268 | | | | | | **288** | 14 |
| TD Break Strength (ppi) | 327 | 315 | 299 | 284 | 319 | | | | | | **309** | 17 |
| MD Yield Elongation (%) | 20 | 20 | 20 | 20 | 20 | | | | | | **20** | 0 |
| TD Yield Elongation (%) | 19 | 17 | 18 | 19 | 19 | | | | | | **18** | 1 |
| MD Break Elongation (%) | 768 | 756 | 799 | 817 | 716 | | | | | | **771** | 39 |
| TD Break Elongation (%) | 911 | 889 | 827 | 821 | 894 | | | | | | **868** | 41 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 50 | 49 | 50 | 50 | 51 | 52 | 52 | 50 | 50 | 49 | **50** | 1 |
| TD Tear Strength (lbs) | 48 | 47 | 48 | 47 | 49 | 49 | 48 | 48 | 48 | 48 | **48** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15414**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 59.8 | 62.3 | 62.0 | 62.3 | 61.3 | 63.8 | 60.7 | 60.2 | 62.2 | 63.9 | **61.9** | 1.4 |
| | | | | | | | | | | | **59.8** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.944 | 0.945 | 0.945 | | | | | | | | **0.945** | 0.001 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.40 | 2.44 | | | | | | | | | **2.42** | 0.03 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 152 | 156 | 156 | 149 | 152 | | | | | | **153** | 3 |
| TD Yield Strength (ppi) | 159 | 160 | 159 | 157 | 160 | | | | | | **159** | 1 |
| MD Break Strength (ppi) | 318 | 307 | 285 | 282 | 298 | | | | | | **298** | 15 |
| TD Break Strength (ppi) | 313 | 308 | 304 | 322 | 289 | | | | | | **307** | 12 |
| MD Yield Elongation (%) | 20 | 19 | 22 | 20 | 22 | | | | | | **21** | 1 |
| TD Yield Elongation (%) | 18 | 18 | 18 | 17 | 19 | | | | | | **18** | 1 |
| MD Break Elongation (%) | 848 | 814 | 759 | 784 | 824 | | | | | | **806** | 35 |
| TD Break Elongation (%) | 875 | 858 | 848 | 917 | 811 | | | | | | **862** | 39 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 53 | 50 | 51 | 52 | 51 | 52 | 50 | 50 | 50 | 51 | **51** | 1 |
| TD Tear Strength (lbs) | 49 | 48 | 49 | 50 | 50 | 50 | 48 | 48 | 49 | 50 | **49** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15446**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 61.5 | 61.2 | 60.6 | 62.1 | 60.1 | 60.6 | 61.8 | 61.4 | 62.3 | 61.0 | **61.3** | 0.7 |
| | | | | | | | | | | | **60.1** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.944 | 0.944 | 0.944 | | | | | | | | **0.944** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.24 | 2.27 | | | | | | | | | **2.26** | 0.02 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 155 | 157 | 149 | 149 | 140 | | | | | | **150** | 7 |
| TD Yield Strength (ppi) | 155 | 155 | 154 | 158 | 146 | | | | | | **154** | 5 |
| MD Break Strength (ppi) | 269 | 231 | 272 | 295 | 288 | | | | | | **271** | 25 |
| TD Break Strength (ppi) | 304 | 289 | 314 | 301 | 308 | | | | | | **303** | 9 |
| MD Yield Elongation (%) | 19 | 19 | 19 | 21 | 21 | | | | | | **20** | 1 |
| TD Yield Elongation (%) | 19 | 18 | 20 | 19 | 19 | | | | | | **19** | 1 |
| MD Break Elongation (%) | 739 | 633 | 757 | 809 | 833 | | | | | | **754** | 78 |
| TD Break Elongation (%) | 875 | 841 | 910 | 854 | 923 | | | | | | **881** | 35 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 51 | 50 | 51 | 50 | 49 | 50 | 51 | 52 | 51 | 51 | **51** | 1 |
| TD Tear Strength (lbs) | 48 | 47 | 50 | 49 | 49 | 50 | 48 | 48 | 50 | 50 | **49** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15454**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 62.3 | 60.9 | 60.1 | 60.3 | 61.6 | 60.0 | 60.6 | 61.3 | 60.0 | 61.0 | **60.8** | 0.8 |
| | | | | | | | | | | | **60.0** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.945 | 0.945 | 0.945 | | | | | | | | **0.945** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.39 | 2.43 | | | | | | | | | **2.41** | 0.03 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 152 | 150 | 153 | 148 | 150 | | | | | | **151** | 2 |
| TD Yield Strength (ppi) | 152 | 157 | 158 | 151 | 155 | | | | | | **155** | 3 |
| MD Break Strength (ppi) | 303 | 225 | 285 | 258 | 216 | | | | | | **257** | 37 |
| TD Break Strength (ppi) | 311 | 299 | 337 | 287 | 306 | | | | | | **308** | 19 |
| MD Yield Elongation (%) | 21 | 19 | 21 | 20 | 21 | | | | | | **20** | 1 |
| TD Yield Elongation (%) | 20 | 18 | 18 | 20 | 19 | | | | | | **19** | 1 |
| MD Break Elongation (%) | 813 | 635 | 779 | 723 | 608 | | | | | | **712** | 89 |
| TD Break Elongation (%) | 881 | 831 | 931 | 847 | 869 | | | | | | **872** | 38 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 52 | 53 | 51 | 53 | 52 | 52 | 51 | 51 | 51 | 49 | **52** | 1 |
| TD Tear Strength (lbs) | 51 | 50 | 50 | 50 | 50 | 50 | 48 | 49 | 48 | 49 | **50** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax 60 mil Smooth HDPE Geomembrane**
**Sample Identification: 6-15462**
**TRI Log #: 51546**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5199)** | | | | | | | | | | | | |
| Thickness (mils) | 63.9 | 62.8 | 62.1 | 61.1 | 62.0 | 62.7 | 62.1 | 60.3 | 61.4 | 60.0 | **61.8** | 1.2 |
| | | | | | | | | | | | **60.0** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.944 | 0.944 | 0.944 | | | | | | | | **0.944** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.40 | 2.36 | | | | | | | | | **2.38** | 0.03 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 142 | 152 | 144 | 152 | 155 | | | | | | **149** | 6 |
| TD Yield Strength (ppi) | 152 | 146 | 150 | 149 | 153 | | | | | | **150** | 3 |
| MD Break Strength (ppi) | 230 | 303 | 260 | 296 | 277 | | | | | | **273** | 29 |
| TD Break Strength (ppi) | 325 | 300 | 280 | 279 | 296 | | | | | | **296** | 19 |
| MD Yield Elongation (%) | 19 | 20 | 22 | 19 | 22 | | | | | | **20** | 2 |
| TD Yield Elongation (%) | 20 | 19 | 18 | 19 | 20 | | | | | | **19** | 1 |
| MD Break Elongation (%) | 660 | 820 | 752 | 819 | 759 | | | | | | **762** | 65 |
| TD Break Elongation (%) | 926 | 877 | 805 | 811 | 841 | | | | | | **852** | 50 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 52 | 51 | 52 | 51 | 51 | 53 | 52 | 52 | 51 | 51 | **52** | 1 |
| TD Tear Strength (lbs) | 50 | 50 | 50 | 48 | 48 | 51 | 48 | 50 | 49 | 49 | **49** | 1 |

MD Machine Direction TD Transverse Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

November 1, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road, Suite 200
P1004
Ft. Worth, TX 76109.

email: sroeder@mustangenergyservices.com

**Bill To:**

**<= Same (P.O. # 301445)**

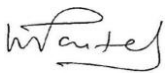
Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51764 |
| Material(s) Tested: | Two, Solmax GSE 60 mil Textured HDPE Geomembrane(s) |
| Test(s) Requested: | Thickness (ASTM D 5994)<br>Density (ASTM D 1505)<br>Carbon Black Content (ASTM D 1603, mod.)<br>Carbon Dispersion (ASTM D 5596)<br>Tensile Properties (ASTM D 6693)<br>Tear Resistance (ASTM D 1004) |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE 60 mil Textured HDPE Geomembrane**
**Sample Identification: 104196574**
**TRI Log #: 51764**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Thickness (ASTM D 5994)** | | | | | | | | | | | | |
| Thickness (mils) | 65 | 70 | 63 | 65 | 67 | 65 | 63 | 63 | 63 | 62 | **64** | 2 |
| | | | | | | | | | | | **62** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.943 | 0.943 | 0.943 | | | | | | | | **0.943** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.26 | 2.29 | | | | | | | | | **2.28** | 0.02 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 160 | 167 | 162 | 149 | 146 | | | | | | **157** | 9 |
| TD Yield Strength (ppi) | 157 | 168 | 165 | 160 | 158 | | | | | | **162** | 5 |
| MD Break Strength (ppi) | 199 | 163 | 176 | 190 | 217 | | | | | | **189** | 21 |
| TD Break Strength (ppi) | 121 | 141 | 193 | 122 | 119 | | | | | | **139** | 31 |
| MD Yield Elongation (%) | 19 | 17 | 18 | 22 | 20 | | | | | | **19** | 2 |
| TD Yield Elongation (%) | 18 | 17 | 18 | 18 | 18 | | | | | | **18** | 0 |
| MD Break Elongation (%) | 541 | 408 | 436 | 519 | 614 | | | | | | **504** | 83 |
| TD Break Elongation (%) | 393 | 409 | 544 | 151 | 224 | | | | | | **344** | 157 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 52 | 51 | 53 | 49 | 53 | 51 | 57 | 55 | 52 | 52 | **52** | 2 |
| TD Tear Strength (lbs) | 49 | 49 | 50 | 51 | 51 | 50 | 55 | 54 | 50 | 50 | **51** | 2 |

MD Machine Direction TD Transverse Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE 60 mil Textured HDPE Geomembrane**
**Sample Identification: 104196581**
**TRI Log #: 51764**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5994)** | | | | | | | | | | | | |
| Thickness (mils) | 60 | 64 | 60 | 60 | 61 | 60 | 65 | 61 | 63 | 64 | **62** | 2 |
| | | | | | | | | | | | **60** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.943 | 0.943 | 0.943 | | | | | | | | **0.943** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.25 | 2.27 | | | | | | | | | **2.26** | 0.01 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 174 | 160 | 156 | 155 | 149 | | | | | | **159** | 9 |
| TD Yield Strength (ppi) | 170 | 163 | 162 | 158 | 160 | | | | | | **163** | 5 |
| MD Break Strength (ppi) | 206 | 164 | 201 | 197 | 192 | | | | | | **192** | 16 |
| TD Break Strength (ppi) | 150 | 185 | 154 | 173 | 165 | | | | | | **165** | 14 |
| MD Yield Elongation (%) | 20 | 20 | 21 | 21 | 19 | | | | | | **20** | 1 |
| TD Yield Elongation (%) | 17 | 17 | 19 | 17 | 18 | | | | | | **18** | 1 |
| MD Break Elongation (%) | 507 | 422 | 547 | 540 | 536 | | | | | | **510** | 52 |
| TD Break Elongation (%) | 302 | 521 | 434 | 494 | 461 | | | | | | **442** | 85 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 53 | 55 | 52 | 53 | 51 | 51 | 52 | 52 | 57 | 58 | **53** | 2 |
| TD Tear Strength (lbs) | 50 | 51 | 49 | 48 | 48 | 50 | 51 | 49 | 52 | 54 | **50** | 2 |

MD Machine Direction TD Transverse Direction



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November 4, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road, Suite 200
P1004
Ft. Worth, TX 76109.

email: sroeder@mustangenergyservices.com

**Bill To:**

**<= Same (P.O. # 301445)**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51728 |
| Material(s) Tested: | Two, Solmax GSE 60 mil Textured HDPE Geomembrane(s) |
| Test(s) Requested: | Thickness (ASTM D 5994)<br>Density (ASTM D 1505)<br>Carbon Black Content (ASTM D 1603, mod.)<br>Carbon Dispersion (ASTM D 5596)<br>Tensile Properties (ASTM D 6693)<br>Tear Resistance (ASTM D 1004) |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,

Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE 60 mil Textured HDPE Geomembrane**
**Sample Identification: 104196553**
**TRI Log #: 51728**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 5994)** | | | | | | | | | | | | |
| Thickness (mils) | 62 | 60 | 65 | 63 | 61 | 61 | 65 | 61 | 64 | 63 | **62** | 2 |
| | | | | | | | | | | | **60** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.943 | 0.943 | 0.943 | | | | | | | | **0.943** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.26 | 2.27 | | | | | | | | | **2.27** | 0.01 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 141 | 154 | 158 | 151 | 144 | | | | | | **150** | 7 |
| TD Yield Strength (ppi) | 150 | 160 | 164 | 151 | 140 | | | | | | **153** | 9 |
| MD Break Strength (ppi) | 219 | 225 | 199 | 205 | 196 | | | | | | **209** | 13 |
| TD Break Strength (ppi) | 184 | 175 | 124 | 177 | 184 | | | | | | **169** | 25 |
| MD Yield Elongation (%) | 20 | 21 | 20 | 19 | 20 | | | | | | **20** | 1 |
| TD Yield Elongation (%) | 19 | 17 | 20 | 18 | 17 | | | | | | **18** | 1 |
| MD Break Elongation (%) | 626 | 615 | 523 | 562 | 564 | | | | | | **578** | 42 |
| TD Break Elongation (%) | 554 | 484 | 75 | 508 | 574 | | | | | | **439** | 207 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 49 | 57 | 51 | 55 | 50 | 49 | 51 | 51 | 55 | 49 | **52** | 3 |
| TD Tear Strength (lbs) | 48 | 47 | 53 | 48 | 49 | 51 | 49 | 50 | 48 | 45 | **49** | 2 |

MD Machine Direction TD Transverse Direction



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**GEOMEMBRANE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE 60 mil Textured HDPE Geomembrane**
**Sample Identification: 104196565**
**TRI Log #: 51728**

| PARAMETER | TEST REPLICATE NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Thickness (ASTM D 5994)** | | | | | | | | | | | | |
| Thickness (mils) | 63 | 66 | 61 | 62 | 68 | 65 | 63 | 62 | 65 | 65 | **64** | 2 |
| | | | | | | | | | | | **61** | << min |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.943 | 0.943 | 0.943 | | | | | | | | **0.943** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.38 | 2.25 | | | | | | | | | **2.32** | 0.09 |
| **Carbon Black Dispersion (ASTM D 5596)** | | | | | | | | | | | | |
| Rating - 1st field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| Rating - 2nd field view | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| **Tensile Properties (ASTM D 6693, 2 ipm strain rate)** | | | | | | | | | | | | |
| MD Yield Strength (ppi) | 147 | 150 | 158 | 165 | 150 | | | | | | **154** | 7 |
| TD Yield Strength (ppi) | 153 | 155 | 165 | 169 | 153 | | | | | | **159** | 7 |
| MD Break Strength (ppi) | 183 | 179 | 228 | 205 | 178 | | | | | | **195** | 22 |
| TD Break Strength (ppi) | 169 | 133 | 173 | 200 | 184 | | | | | | **172** | 25 |
| MD Yield Elongation (%) | 19 | 18 | 19 | 19 | 19 | | | | | | **19** | 0 |
| TD Yield Elongation (%) | 18 | 18 | 18 | 17 | 16 | | | | | | **17** | 1 |
| MD Break Elongation (%) | 518 | 508 | 614 | 534 | 510 | | | | | | **537** | 44 |
| TD Break Elongation (%) | 479 | 397 | 467 | 541 | 548 | | | | | | **486** | 62 |
| **Tear Resistance (ASTM D 1004)** | | | | | | | | | | | | |
| MD Tear Strength (lbs) | 53 | 50 | 51 | 52 | 53 | 53 | 51 | 55 | 48 | 52 | **52** | 2 |
| TD Tear Strength (lbs) | 49 | 51 | 48 | 47 | 49 | 52 | 51 | 47 | 52 | 49 | **50** | 2 |

MD Machine Direction TD Transverse Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.5. Geonet Certifications

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Resin Lot | Manufacturing date | Length |
|---|---|---|---|---|
| 131516112 | GNS-200E-00-00-E-00 | CB117B1203 | 3/29/2017 | 290.00 |
| 131516113 | GNS-200E-00-00-E-00 | CB117B1203 | 3/29/2017 | 290.00 |
| 131516168 | GNS-200E-00-00-E-00 | CB117B1203 | 3/30/2017 | 290.00 |
| 131516169 | GNS-200E-00-00-E-00 | CB117B1203 | 3/30/2017 | 290.00 |
| 131516300 | GNS-200E-00-00-E-00 | CB117B1201 | 3/31/2017 | 290.00 |
| 131516301 | GNS-200E-00-00-E-00 | CB117B1201 | 3/31/2017 | 290.00 |
| 131516302 | GNS-200E-00-00-E-00 | CB117B1201 | 3/31/2017 | 290.00 |
| 131516303 | GNS-200E-00-00-E-00 | CB117B1201 | 3/31/2017 | 290.00 |
| 131516409 | GNS-200E-00-00-E-00 | CB117B1201 | 4/1/2017 | 290.00 |
| 131517159 | GNS-200E-00-00-E-00 | CB117C0602 | 4/12/2017 | 290.00 |
| 131517160 | GNS-200E-00-00-E-00 | CB117C0602 | 4/12/2017 | 290.00 |
| 131517191 | GNS-200E-00-00-E-00 | CB117C0602 | 4/12/2017 | 290.00 |
| 131517192 | GNS-200E-00-00-E-00 | CB117C0602 | 4/12/2017 | 290.00 |
| 131517266 | GNS-200E-00-00-E-00 | CB117C0602 | 4/13/2017 | 290.00 |
| 131517268 | GNS-200E-00-00-E-00 | CB117C0602 | 4/13/2017 | 290.00 |
| 131520034 | GNS-200E-00-00-E-00 | CB117D2002 | 5/18/2017 | 290.00 |
| 131520045 | GNS-200E-00-00-E-00 | CB117D2002 | 5/18/2017 | 290.00 |
| 131520046 | GNS-200E-00-00-E-00 | CB117D2002 | 5/18/2017 | 290.00 |
| 131520074 | GNS-200E-00-00-E-00 | CB117D2002 | 5/19/2017 | 290.00 |
| 131520075 | GNS-200E-00-00-E-00 | CB117D2002 | 5/19/2017 | 290.00 |
| 131520076 | GNS-200E-00-00-E-00 | CB117D2002 | 5/19/2017 | 290.00 |
| 131520083 | GNS-200E-00-00-E-00 | CB117D2002 | 5/19/2017 | 290.00 |
| 131520084 | GNS-200E-00-00-E-00 | CB117D2002 | 5/19/2017 | 290.00 |
| 131527194 | GNS-200E-00-00-E-00 | CB117F0204 | 8/18/2017 | 290.00 |
| 131527362 | GNS-200E-00-00-E-00 | CB117F0204 | 8/19/2017 | 290.00 |
| 131527379 | GNS-200E-00-00-E-00 | CB117F0204 | 8/20/2017 | 290.00 |
| 131527523 | GNS-200E-00-00-E-00 | CB117F2103 | 8/21/2017 | 290.00 |
| 131527524 | GNS-200E-00-00-E-00 | CB117F2103 | 8/21/2017 | 290.00 |
| 131527676 | GNS-200E-00-00-E-00 | CB117F2103 | 8/22/2017 | 290.00 |
| 131527713 | GNS-200E-00-00-E-00 | CB117F2103 | 8/23/2017 | 290.00 |
| 131527897 | GNS-200E-00-00-E-00 | CB117F2102 | 8/25/2017 | 290.00 |
| 131527937 | GNS-200E-00-00-E-00 | CB117F2102 | 8/25/2017 | 290.00 |
| 131527976 | GNS-200E-00-00-E-00 | CB117F2102 | 8/25/2017 | 290.00 |
| 131528521 | GNS-200E-00-00-E-00 | CB117G0802 | 8/30/2017 | 290.00 |
| 131528706 | GNS-200E-00-00-E-00 | CB117G0802 | 9/1/2017 | 290.00 |
| 131528707 | GNS-200E-00-00-E-00 | CB117G0802 | 9/1/2017 | 290.00 |
| 131528708 | GNS-200E-00-00-E-00 | CB117G0802 | 9/1/2017 | 290.00 |
| 131528709 | GNS-200E-00-00-E-00 | CB117G0802 | 9/1/2017 | 290.00 |
| 131528894 | GNS-200E-00-00-E-00 | CB117F2401 | 9/3/2017 | 290.00 |
| 131529016 | GNS-200E-00-00-E-00 | CB117F2401 | 9/4/2017 | 290.00 |
| 131529188 | GNS-200E-00-00-E-00 | CB117F2401 | 9/6/2017 | 290.00 |
| 131529229 | GNS-200E-00-00-E-00 | CB117F2401 | 9/6/2017 | 290.00 |
| 131529230 | GNS-200E-00-00-E-00 | CB117F2401 | 9/6/2017 | 290.00 |
| 131529733 | GNS-200E-00-00-E-00 | CB117G2203 | 9/14/2017 | 290.00 |
| 131529734 | GNS-200E-00-00-E-00 | CB117G2203 | 9/14/2017 | 290.00 |
| 131529735 | GNS-200E-00-00-E-00 | CB117G2203 | 9/14/2017 | 290.00 |
| 131529742 | GNS-200E-00-00-E-00 | CB117G2203 | 9/14/2017 | 290.00 |
| 131529768 | GNS-200E-00-00-E-00 | CB117G2203 | 9/15/2017 | 290.00 |
| 131529792 | GNS-200E-00-00-E-00 | CB117G2203 | 9/18/2017 | 290.00 |
| 131530029 | GNS-200E-00-00-E-00 | CB117G2003 | 9/21/2017 | 290.00 |
| 131530031 | GNS-200E-00-00-E-00 | CB117G2003 | 9/21/2017 | 290.00 |
| 131530032 | GNS-200E-00-00-E-00 | CB117G2003 | 9/21/2017 | 290.00 |
| 131530042 | GNS-200E-00-00-E-00 | CB117G2003 | 9/21/2017 | 290.00 |
| 131530072 | GNS-200E-00-00-E-00 | CB117G2003 | 9/22/2017 | 290.00 |
| 131530073 | GNS-200E-00-00-E-00 | CB117G2003 | 9/22/2017 | 290.00 |
| 131530074 | GNS-200E-00-00-E-00 | CB117G2003 | 9/22/2017 | 290.00 |
| 131530163 | GNS-200E-00-00-E-00 | CB117G2003 | 9/25/2017 | 290.00 |
| 131530164 | GNS-200E-00-00-E-00 | CB117G2003 | 9/25/2017 | 290.00 |
| 131531748 | GNS-200E-00-00-E-00 | CB117H1104 | 10/21/2017 | 290.00 |
| 131531749 | GNS-200E-00-00-E-00 | CB117H1104 | 10/21/2017 | 290.00 |
| 131531770 | GNS-200E-00-00-E-00 | CB117H1104 | 10/25/2017 | 290.00 |
| 131531771 | GNS-200E-00-00-E-00 | CB117H1104 | 10/25/2017 | 290.00 |
| 131531798 | GNS-200E-00-00-E-00 | CB117H1104 | 10/25/2017 | 290.00 |
| 131531868 | GNS-200E-00-00-E-00 | CB117H1104 | 10/26/2017 | 290.00 |
| 131533219 | GNS-200E-00-00-E-00 | CB117J1301 | 11/28/2017 | 290.00 |
| 131533220 | GNS-200E-00-00-E-00 | CB117J1301 | 11/28/2017 | 290.00 |
| 131533269 | GNS-200E-00-00-E-00 | CB117J1301 | 11/28/2017 | 290.00 |
| 131533270 | GNS-200E-00-00-E-00 | CB117J1301 | 11/28/2017 | 290.00 |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Resin Lot | Manufacturing date | Length |
|---|---|---|---|---|
| 131533349 | GNS-200E-00-00-E-00 | CB117J1301 | 11/29/2017 | 290.00 |
| 131533350 | GNS-200E-00-00-E-00 | CB117J1301 | 11/29/2017 | 290.00 |
| 131534039 | GNS-200E-00-00-E-00 | CB117J3004 | 12/13/2017 | 290.00 |
| 131534040 | GNS-200E-00-00-E-00 | CB117J3004 | 12/13/2017 | 290.00 |
| 131534139 | GNS-200E-00-00-E-00 | CB117J3004 | 12/14/2017 | 290.00 |
| 131534237 | GNS-200E-00-00-E-00 | CB117J3004 | 12/15/2017 | 290.00 |
| 131534307 | GNS-200E-00-00-E-00 | CB117J3002 | 12/16/2017 | 290.00 |
| 131534345 | GNS-200E-00-00-E-00 | CB117J3002 | 12/16/2017 | 290.00 |
| 131534443 | GNS-200E-00-00-E-00 | CB117J3002 | 12/17/2017 | 290.00 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/21/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | JAL NM USA | GNS-200E-00-00-E-00 | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|
| 131516112 | 251 | 74 | 0.963 | 2.7 | 0.215 |
| 131516113 | 259 | 98 | 0.961 | 2.6 | 0.242 |
| 131516168 | 259 | 84 | 0.957 | 2.4 | 0.218 |
| 131516169 | 259 | 84 | 0.957 | 2.4 | 0.218 |
| 131516300 | 259 | 96 | 0.963 | 2.6 | 0.239 |
| 131516301 | 259 | 96 | 0.963 | 2.6 | 0.239 |
| 131516302 | 259 | 96 | 0.963 | 2.6 | 0.239 |
| 131516303 | 259 | 96 | 0.963 | 2.6 | 0.239 |
| 131516409 | 263 | 74 | 0.964 | 2.8 | 0.219 |
| 131517159 | 261 | 71 | 0.967 | 2.6 | 0.218 |
| 131517160 | 261 | 65 | 0.965 | 2.7 | 0.219 |
| 131517191 | 270 | 83 | 0.957 | 2.4 | 0.235 |
| 131517192 | 270 | 83 | 0.957 | 2.4 | 0.235 |
| 131517266 | 259 | 70 | 0.966 | 2.8 | 0.219 |
| 131517268 | 266 | 65 | 0.963 | 2.7 | 0.211 |
| 131520034 | 263 | 97 | 0.965 | 2.3 | 0.239 |
| 131520045 | 261 | 101 | 0.960 | 2.4 | 0.235 |
| 131520046 | 261 | 101 | 0.960 | 2.4 | 0.235 |
| 131520074 | 256 | 104 | 0.961 | 2.4 | 0.238 |
| 131520075 | 256 | 104 | 0.961 | 2.4 | 0.238 |
| 131520076 | 256 | 104 | 0.961 | 2.4 | 0.238 |
| 131520083 | 254 | 101 | 0.960 | 2.4 | 0.239 |
| 131520084 | 254 | 101 | 0.960 | 2.4 | 0.239 |
| 131527194 | 254 | 87 | 0.966 | 2.6 | 0.218 |
| 131527362 | 253 | 85 | 0.959 | 2.4 | 0.212 |
| 131527379 | 250 | 83 | 0.956 | 2.4 | 0.210 |
| 131527523 | 256 | 75 | 0.963 | 2.5 | 0.221 |
| 131527524 | 256 | 75 | 0.963 | 2.5 | 0.221 |
| 131527676 | 256 | 75 | 0.965 | 2.6 | 0.214 |
| 131527713 | 252 | 79 | 0.967 | 2.6 | 0.214 |
| 131527897 | 261 | 80 | 0.955 | 2.6 | 0.214 |
| 131527937 | 269 | 94 | 0.964 | 2.6 | 0.228 |
| 131527976 | 260 | 79 | 0.955 | 2.6 | 0.217 |
| 131528521 | 258 | 91 | 0.960 | 2.5 | 0.226 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/21/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | JAL NM USA | GNS-200E-00-00-E-00 | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|
| 131528706 | 256 | 73 | 0.964 | 2.7 | 0.211 |
| 131528707 | 256 | 73 | 0.964 | 2.7 | 0.211 |
| 131528708 | 256 | 73 | 0.964 | 2.7 | 0.211 |
| 131528709 | 256 | 73 | 0.964 | 2.7 | 0.211 |
| 131528894 | 256 | 93 | 0.963 | 2.6 | 0.219 |
| 131529016 | 258 | 96 | 0.964 | 2.6 | 0.228 |
| 131529188 | 258 | 84 | 0.966 | 2.6 | 0.215 |
| 131529229 | 260 | 87 | 0.965 | 2.5 | 0.218 |
| 131529230 | 260 | 87 | 0.965 | 2.5 | 0.218 |
| 131529733 | 257 | 89 | 0.968 | 2.7 | 0.236 |
| 131529734 | 257 | 89 | 0.968 | 2.7 | 0.236 |
| 131529735 | 257 | 89 | 0.968 | 2.7 | 0.236 |
| 131529742 | 254 | 89 | 0.966 | 2.8 | 0.227 |
| 131529768 | 251 | 74 | 0.962 | 2.4 | 0.229 |
| 131529792 | 275 | 125 | 0.965 | 2.4 | 0.250 |
| 131530029 | 253 | 84 | 0.963 | 2.4 | 0.245 |
| 131530031 | 253 | 84 | 0.963 | 2.4 | 0.241 |
| 131530032 | 253 | 84 | 0.963 | 2.4 | 0.241 |
| 131530042 | 253 | 84 | 0.963 | 2.4 | 0.243 |
| 131530072 | 253 | 80 | 0.964 | 2.5 | 0.248 |
| 131530073 | 253 | 80 | 0.964 | 2.5 | 0.248 |
| 131530074 | 253 | 80 | 0.964 | 2.5 | 0.248 |
| 131530163 | 251 | 74 | 0.963 | 2.5 | 0.249 |
| 131530164 | 251 | 74 | 0.963 | 2.5 | 0.249 |
| 131531748 | 249 | 80 | 0.962 | 2.5 | 0.210 |
| 131531749 | 264 | 85 | 0.960 | 2.6 | 0.223 |
| 131531770 | 247 | 83 | 0.965 | 2.6 | 0.222 |
| 131531771 | 248 | 86 | 0.958 | 2.8 | 0.245 |
| 131531798 | 256 | 78 | 0.959 | 2.4 | 0.247 |
| 131531868 | 262 | 85 | 0.960 | 2.5 | 0.250 |
| 131533219 | 255 | 80 | 0.965 | 2.5 | 0.207 |
| 131533220 | 259 | 74 | 0.954 | 2.5 | 0.215 |
| 131533269 | 257 | 72 | 0.963 | 2.5 | 0.221 |
| 131533270 | 257 | 72 | 0.963 | 2.5 | 0.221 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/21/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | JAL NM USA | GNS-200E-00-00-E-00 | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|
| 131533349 | 257 | 75 | 0.968 | 2.4 | 0.209 |
| 131533350 | 257 | 75 | 0.968 | 2.4 | 0.209 |
| 131534039 | 275 | 114 | 0.963 | 2.5 | 0.245 |
| 131534040 | 265 | 99 | 0.964 | 2.4 | 0.247 |
| 131534139 | 275 | 92 | 0.955 | 2.4 | 0.244 |
| 131534237 | 268 | 98 | 0.968 | 2.3 | 0.245 |
| 131534307 | 275 | 95 | 0.959 | 2.5 | 0.250 |
| 131534345 | 269 | 100 | 0.966 | 2.4 | 0.244 |
| 131534443 | 254 | 75 | 0.962 | 2.4 | 0.214 |

**Laboratory Manager**

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**Equistar Chemicals, LP**
**One Houston Center**
**1221 McKinney**
**Houston TX 77010**

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KINGSTREE SC 29556
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| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-508560 |
| **Batch Number** | : CB117B1201 | **Customer Number** | : 151477 |
| **Vehicle Number** | : CITX200333 | **Date Shipped** | : February 13, 2017 |
| **Estimated Quantity** | : 216,150 LBS | **Equistar Order No.** | : 4489086 000010 |
| | | **Delivery Item No.** | : 88686101 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | CITX200333 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9539 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.37 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: February 14, 2017 BSSIMMO1

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| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#508812 |
| **Batch Number** | : CB117B1203 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX16908 | **Date Shipped** | : February 14, 2017 |
| **Estimated Quantity** | : 215,350 LBS | **Equistar Order No.** | : 4526260 000010 |
| | | **Delivery Item No.** | : 88689807 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX16908 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9534 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.37 | g/10 min. | STM 002 |

Delivery Number:

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| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#508812 |
| **Batch Number** | : CB117C0602 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX631712 | **Date Shipped** | : March 17, 2017 |
| **Estimated Quantity** | : 216,200 LBS | **Equistar Order No.** | : 4526262 000010 |
| | | **Delivery Item No.** | : 88766392 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX631712 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9527 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.31 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: March 20, 2017 BSSIMMO1

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| | | | |
|---|---|---|---|
| **Equistar Material** | **:** 16838 PETROTHENE LR732001 | **Customer Order No.** | **:** 03-509240 |
| **Batch Number** | **:** CB117D2002 | **Customer Number** | **:** 151477 |
| **Vehicle Number** | **:** CITX200309 | **Date Shipped** | **:** April 21, 2017 |
| **Estimated Quantity** | **:** 214,650 LBS | **Equistar Order No.** | **:** 4579659 000010 |
| | | **Delivery Item No.** | **:** 88859835 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | CITX200309 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9535 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.33 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: April 24, 2017 BSSIMMO1

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| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#509864 |
| **Batch Number** | : CB117F0204 | **Customer Number** | : 151477 |
| **Vehicle Number** | : CITX200132 | **Date Shipped** | : June 08, 2017 |
| **Estimated Quantity** | : 215,850 LBS | **Equistar Order No.** | : 4652002 000010 |
| | | **Delivery Item No.** | : 8100045926 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | CITX200132 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9532 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.34 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: June 09, 2017 BSSIMMO1

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KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#509864 |
| **Batch Number** | : CB117F2102 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX13968 | **Date Shipped** | : July 03, 2017 |
| **Estimated Quantity** | : 216,250 LBS | **Equistar Order No.** | : 4652006 000010 |
| | | **Delivery Item No.** | : 8100109884 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX13968 | | |
| Vehicle Type | HOPPERCAR HHC | | |
| Density, Extrudate @ 23C | 0.9545 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.32 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

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Print Date: July 05, 2017 BSSIMMO1
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| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#509864 |
| **Batch Number** | : CB117F2103 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX631534 | **Date Shipped** | : July 03, 2017 |
| **Estimated Quantity** | : 212,700 LBS | **Equistar Order No.** | : 4652007 000010 |
| | | **Delivery Item No.** | : 8100109885 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX631534 | | |
| Vehicle Type | HOPPERCAR HHC | | |
| Density, Extrudate @ 23C | 0.9541 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.30 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: July 05, 2017 BSSIMMO1

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**Houston TX 77010**

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KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-510141 |
| **Batch Number** | : CB117F2401 | **Customer Number** | : 151477 |
| **Vehicle Number** | : CITX200337 | **Date Shipped** | : July 21, 2017 |
| **Estimated Quantity** | : 215,450 LBS | **Equistar Order No.** | : 4687512 000010 |
| | | **Delivery Item No.** | : 8100150448 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | CITX200337 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9537 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.30 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: July 24, 2017 BSSIMMO1

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**One Houston Center**
**1221 McKinney**
**Houston TX 77010**

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SEWICKLEY HILLS

**Ship-To Address:**
GSE ENVIRONMENTAL LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-510141 |
| **Batch Number** | : CB117G0802 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX13386 | **Date Shipped** | : July 21, 2017 |
| **Estimated Quantity** | : 201,900 LBS | **Equistar Order No.** | : 4687513 000010 |
| | | **Delivery Item No.** | : 8100150449 000010 |

| Test Description | Test Result | Unit of Measure |
|---|---|---|
| Vehicle ID | EQUX13386 | |
| Vehicle Type | HOPPER CAR H | |
| Density, Extrudate @ 23C | 0.9529 | g/cm3 |
| Melt Index, 2160g @ 190C | 0.31 | g/10 min. |

Delivery Number:



Cust/PO Number:



Data reported was generated in an approved Quality Assurance Lab.

Print Date: July 24, 2017 BSSIMMO1
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GSE ENVIRONMENTAL LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-510141 |
| **Batch Number** | : CB117G2003 | **Customer Number** | : 151477 |
| **Vehicle Number** | : CITX200214 | **Date Shipped** | : July 31, 2017 |
| **Estimated Quantity** | : 214,050 LBS | **Equistar Order No.** | : 4687516 000010 |
| | | **Delivery Item No.** | : 8100166478 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | CITX200214 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9530 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.34 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Data reported was generated in an approved Quality Assurance Lab.

Print Date: August 01, 2017 BSSIMMO1
This information is available 24 hours a day at https://lyb.customerxpress.com/
Questions ? Call Customer Service: 888-777-0232

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**Equistar Chemicals, LP**
**One Houston Center**
**1221 McKinney**
**Houston TX 77010**

# Certificate Of Analysis

**Certificate of Analysis Contact:**
KINGSTREE SC

**Ship-To Address:**
GSE ENVIRONMENTAL LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-510141 |
| **Batch Number** | : CB117G2203 | **Customer Number** | : 151477 |
| **Vehicle Number** | : AOKX90055 | **Date Shipped** | : July 31, 2017 |
| **Estimated Quantity** | : 215,800 LBS | **Equistar Order No.** | : 4687518 000010 |
| | | **Delivery Item No.** | : 8100166480 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | AOKX90055 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9527 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.35 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: August 01, 2017 BSSIMMO1

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**One Houston Center**
**1221 McKinney**
**Houston TX 77010**

# Certificate Of Analysis

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1245 EASTLAND AVE
KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#510439 |
| **Batch Number** | : CB117H1104 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX631489 | **Date Shipped** | : August 14, 2017 |
| **Estimated Quantity** | : 215,750 LBS | **Equistar Order No.** | : 4725020 000010 |
| | | **Delivery Item No.** | : 8100214792 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX631489 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9529 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.32 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Data reported was generated in an approved Quality Assurance Lab.

Print Date: August 15, 2017 BSSIMMO1
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https://lyb.customerxpress.com/
Questions ? Call Customer Service: 888-777-0232

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# Certificate Of Analysis

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**Ship-To Address:**
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KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03#510439 |
| **Batch Number** | : CB117J1301 | **Customer Number** | : 151477 |
| **Vehicle Number** | : CITX200101 | **Date Shipped** | : September 14, 2017 |
| **Estimated Quantity** | : 216,000 LBS | **Equistar Order No.** | : 4725012 000010 |
| | | **Delivery Item No.** | : 8100295161 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | CITX200101 | | |
| Vehicle Type | HOPPERCAR HHC | | |
| Density, Extrudate @ 23C | 0.9537 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.32 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Data reported was generated in an approved Quality Assurance Lab.

Print Date: September 15, 2017 LMWALTER
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Questions ? Call Customer Service: 888-777-0232

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**1221 McKinney**
**Houston TX 77010**

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**Certificate of Analysis Contact:**
SEWICKLEY HILLS

**Ship-To Address:**
GSE ENVIRONMENTAL LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-510739 |
| **Batch Number** | : CB117J3002 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX621336 | **Date Shipped** | : October 16, 2017 |
| **Estimated Quantity** | : 215,050 LBS | **Equistar Order No.** | : 4758113 000010 |
| | | **Delivery Item No.** | : 8100374055 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX621336 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9530 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.33 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

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Print Date: October 17, 2017 BSSIMMO1
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**Ship-To Address:**
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KINGSTREE SC 29556
UNITED STATES

| | | | |
|---|---|---|---|
| **Equistar Material** | : 16838 PETROTHENE LR732001 | **Customer Order No.** | : 03-510739 |
| **Batch Number** | : CB117J3004 | **Customer Number** | : 151477 |
| **Vehicle Number** | : EQUX13568 | **Date Shipped** | : October 16, 2017 |
| **Estimated Quantity** | : 214,350 LBS | **Equistar Order No.** | : 4758112 000010 |
| | | **Delivery Item No.** | : 8100374054 000010 |

| Test Description | Test Result | Unit of Measure | |
|---|---|---|---|
| Vehicle ID | EQUX13568 | | |
| Vehicle Type | HOPPER CAR H | | |
| Density, Extrudate @ 23C | 0.9529 | g/cm3 | STM 011 |
| Melt Index, 2160g @ 190C | 0.33 | g/10 min. | STM 002 |

Delivery Number:

Cust/PO Number:

Print Date: October 17, 2017 BSSIMMO1

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Report Date
10/21/2019

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG /OWL LANDFILL
**Sales Order:** 88056

**Required Testing:** ASTM D 1238, 190 / 2.16 -- Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

**Frequency:** 1/50,000 sf

**Specification:** ≤ 1.0 g/10 minutes

| Product Code | Roll Number | Result |
|---|---|---|
| GNS-200E-00-00-E-00 | 131516112 | 0.35 |
| GNS-200E-00-00-E-00 | 131517191 | 0.32 |
| GNS-200E-00-00-E-00 | 131520084 | 0.31 |
| GNS-200E-00-00-E-00 | 131528521 | 0.34 |
| GNS-200E-00-00-E-00 | 131529731 | 0.30 |
| GNS-200E-00-00-E-00 | 131530074 | 0.33 |
| GNS-200E-00-00-E-00 | 131533268 | 0.36 |

Approved by: Barbara McCrea
Date: October 21, 2019

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SOLMAX GSE Environmental, LLC.

# *Transmissivity Report*

## *ASTM D4716*

***Roll No.*** *131516112*

### *ROLL IDENTIFICATION*

| | |
|---|---|
| ***Roll Number*** | 131516112 |
| ***Product Name*** | GNS-200E-00-00-E-00 |
| ***Production Date*** | 3/29/2017 |

### *CUSTOMER INFORMATION*

| | |
|---|---|
| ***Order Number*** | 88056 |
| ***Customer Name*** | Mustang Extreme Environmental Services, LLC |
| ***Project Name*** | MUSTANG / OWL LANNDFILL |
| ***Location*** | JAL NM |

| ***Pressure (psf)*** | ***Gradient*** | ***Net/Composite*** | ***Transmissivity Results*** $(m^2/sec)$ | $(gal/min/ft)$ | ***Seat Time (min)*** | ***Boundary*** |
|---|---|---|---|---|---|---|
| 10,000 | 0.10 | Net | 3.44E-03 | 16.62 | 15 | SS Plates |



GSE QC APPROVED

# Conformance List

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI Environmental, Inc.
1/100,000 sf, min 1/lot

Geonet: 1 ft x RW

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Shipped |
|---|---|---|---|---|---|
| 131516112 | CB117B1203 | GNS-200E-00-00-E-00 | 3/29/2017 | 290 | Pending |
| 131516113 | CB117B1203 | GNS-200E-00-00-E-00 | 3/29/2017 | 290 | |
| 131516168 | CB117B1203 | GNS-200E-00-00-E-00 | 3/30/2017 | 290 | |
| 131516169 | CB117B1203 | GNS-200E-00-00-E-00 | 3/30/2017 | 290 | |
| 131516300 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | Pending |
| 131516301 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | |
| 131516302 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | |
| 131516303 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | |
| 131516409 | CB117B1201 | GNS-200E-00-00-E-00 | 4/1/2017 | 290 | |
| 131517159 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | Pending |
| 131517160 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | |
| 131517191 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | |
| 131517192 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | |
| 131517266 | CB117C0602 | GNS-200E-00-00-E-00 | 4/13/2017 | 290 | |
| 131517268 | CB117C0602 | GNS-200E-00-00-E-00 | 4/13/2017 | 290 | |
| 131520034 | CB117D2002 | GNS-200E-00-00-E-00 | 5/18/2017 | 290 | Pending |
| 131520045 | CB117D2002 | GNS-200E-00-00-E-00 | 5/18/2017 | 290 | |
| 131520046 | CB117D2002 | GNS-200E-00-00-E-00 | 5/18/2017 | 290 | |
| 131520074 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520075 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520076 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520083 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520084 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131527194 | CB117F0204 | GNS-200E-00-00-E-00 | 8/18/2017 | 290 | Pending |
| 131527362 | CB117F0204 | GNS-200E-00-00-E-00 | 8/19/2017 | 290 | |
| 131527379 | CB117F0204 | GNS-200E-00-00-E-00 | 8/20/2017 | 290 | |
| 131527523 | CB117F2103 | GNS-200E-00-00-E-00 | 8/21/2017 | 290 | Pending |
| 131527524 | CB117F2103 | GNS-200E-00-00-E-00 | 8/21/2017 | 290 | |
| 131527676 | CB117F2103 | GNS-200E-00-00-E-00 | 8/22/2017 | 290 | |
| 131527713 | CB117F2103 | GNS-200E-00-00-E-00 | 8/23/2017 | 290 | |
| 131527897 | CB117F2102 | GNS-200E-00-00-E-00 | 8/25/2017 | 290 | Pending |
| 131527937 | CB117F2102 | GNS-200E-00-00-E-00 | 8/25/2017 | 290 | |
| 131527976 | CB117F2102 | GNS-200E-00-00-E-00 | 8/25/2017 | 290 | |
| 131528521 | CB117G0802 | GNS-200E-00-00-E-00 | 8/30/2017 | 290 | Pending |
| 131528706 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528707 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528708 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528709 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528894 | CB117F2401 | GNS-200E-00-00-E-00 | 9/3/2017 | 290 | Pending |
| 131529016 | CB117F2401 | GNS-200E-00-00-E-00 | 9/4/2017 | 290 | |
| 131529188 | CB117F2401 | GNS-200E-00-00-E-00 | 9/6/2017 | 290 | |
| 131529229 | CB117F2401 | GNS-200E-00-00-E-00 | 9/6/2017 | 290 | |
| 131529230 | CB117F2401 | GNS-200E-00-00-E-00 | 9/6/2017 | 290 | |
| 131529733 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | Pending |
| 131529734 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | |
| 131529735 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | |

# Conformance List

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI Environmental, Inc.
1/100,000 sf, min 1/lot

Geonet: 1 ft x RW

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Shipped |
|---|---|---|---|---|---|
| 131529742 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | |
| 131529768 | CB117G2203 | GNS-200E-00-00-E-00 | 9/15/2017 | 290 | |
| 131529792 | CB117G2203 | GNS-200E-00-00-E-00 | 9/18/2017 | 290 | |
| 131530029 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | Pending |
| 131530031 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | |
| 131530032 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | |
| 131530042 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | |
| 131530072 | CB117G2003 | GNS-200E-00-00-E-00 | 9/22/2017 | 290 | |
| 131530073 | CB117G2003 | GNS-200E-00-00-E-00 | 9/22/2017 | 290 | |
| 131530074 | CB117G2003 | GNS-200E-00-00-E-00 | 9/22/2017 | 290 | |
| 131530163 | CB117G2003 | GNS-200E-00-00-E-00 | 9/25/2017 | 290 | |
| 131530164 | CB117G2003 | GNS-200E-00-00-E-00 | 9/25/2017 | 290 | |
| 131531748 | CB117H1104 | GNS-200E-00-00-E-00 | 10/21/2017 | 290 | Pending |
| 131531749 | CB117H1104 | GNS-200E-00-00-E-00 | 10/21/2017 | 290 | |
| 131531770 | CB117H1104 | GNS-200E-00-00-E-00 | 10/25/2017 | 290 | |
| 131531771 | CB117H1104 | GNS-200E-00-00-E-00 | 10/25/2017 | 290 | |
| 131531798 | CB117H1104 | GNS-200E-00-00-E-00 | 10/25/2017 | 290 | |
| 131531868 | CB117H1104 | GNS-200E-00-00-E-00 | 10/26/2017 | 290 | |
| 131533219 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | Pending |
| 131533220 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | |
| 131533269 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | |
| 131533270 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | |
| 131533349 | CB117J1301 | GNS-200E-00-00-E-00 | 11/29/2017 | 290 | |
| 131533350 | CB117J1301 | GNS-200E-00-00-E-00 | 11/29/2017 | 290 | |
| 131534039 | CB117J3004 | GNS-200E-00-00-E-00 | 12/13/2017 | 290 | Pending |
| 131534040 | CB117J3004 | GNS-200E-00-00-E-00 | 12/13/2017 | 290 | |
| 131534139 | CB117J3004 | GNS-200E-00-00-E-00 | 12/14/2017 | 290 | |
| 131534237 | CB117J3004 | GNS-200E-00-00-E-00 | 12/15/2017 | 290 | |
| 131534307 | CB117J3002 | GNS-200E-00-00-E-00 | 12/16/2017 | 290 | Pending |
| 131534345 | CB117J3002 | GNS-200E-00-00-E-00 | 12/16/2017 | 290 | |
| 131534443 | CB117J3002 | GNS-200E-00-00-E-00 | 12/17/2017 | 290 | |

# Conformance List

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI Environmental, Inc.
1/100,000 sf, min 1/lot

Geonet: 1 ft x RW

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Shipped |
|---|---|---|---|---|---|
| 131516112 | CB117B1203 | GNS-200E-00-00-E-00 | 3/29/2017 | 290 | 10/22 |
| 131516113 | CB117B1203 | GNS-200E-00-00-E-00 | 3/29/2017 | 290 | |
| 131516168 | CB117B1203 | GNS-200E-00-00-E-00 | 3/30/2017 | 290 | |
| 131516169 | CB117B1203 | GNS-200E-00-00-E-00 | 3/30/2017 | 290 | |
| 131516300 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | 10/22 |
| 131516301 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | |
| 131516302 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | |
| 131516303 | CB117B1201 | GNS-200E-00-00-E-00 | 3/31/2017 | 290 | |
| 131516409 | CB117B1201 | GNS-200E-00-00-E-00 | 4/1/2017 | 290 | |
| 131517159 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | 10/22 |
| 131517160 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | |
| 131517191 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | |
| 131517192 | CB117C0602 | GNS-200E-00-00-E-00 | 4/12/2017 | 290 | |
| 131517266 | CB117C0602 | GNS-200E-00-00-E-00 | 4/13/2017 | 290 | |
| 131517268 | CB117C0602 | GNS-200E-00-00-E-00 | 4/13/2017 | 290 | |
| 131520034 | CB117D2002 | GNS-200E-00-00-E-00 | 5/18/2017 | 290 | 10/22 |
| 131520045 | CB117D2002 | GNS-200E-00-00-E-00 | 5/18/2017 | 290 | |
| 131520046 | CB117D2002 | GNS-200E-00-00-E-00 | 5/18/2017 | 290 | |
| 131520074 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520075 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520076 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520083 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131520084 | CB117D2002 | GNS-200E-00-00-E-00 | 5/19/2017 | 290 | |
| 131527194 | CB117F0204 | GNS-200E-00-00-E-00 | 8/18/2017 | 290 | 10/22 |
| 131527362 | CB117F0204 | GNS-200E-00-00-E-00 | 8/19/2017 | 290 | |
| 131527379 | CB117F0204 | GNS-200E-00-00-E-00 | 8/20/2017 | 290 | |
| 131527523 | CB117F2103 | GNS-200E-00-00-E-00 | 8/21/2017 | 290 | 10/22 |
| 131527524 | CB117F2103 | GNS-200E-00-00-E-00 | 8/21/2017 | 290 | |
| 131527676 | CB117F2103 | GNS-200E-00-00-E-00 | 8/22/2017 | 290 | |
| 131527713 | CB117F2103 | GNS-200E-00-00-E-00 | 8/23/2017 | 290 | |
| 131527897 | CB117F2102 | GNS-200E-00-00-E-00 | 8/25/2017 | 290 | 10/22 |
| 131527937 | CB117F2102 | GNS-200E-00-00-E-00 | 8/25/2017 | 290 | |
| 131527976 | CB117F2102 | GNS-200E-00-00-E-00 | 8/25/2017 | 290 | |
| 131528521 | CB117G0802 | GNS-200E-00-00-E-00 | 8/30/2017 | 290 | 10/22 |
| 131528706 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528707 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528708 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528709 | CB117G0802 | GNS-200E-00-00-E-00 | 9/1/2017 | 290 | |
| 131528894 | CB117F2401 | GNS-200E-00-00-E-00 | 9/3/2017 | 290 | 10/22 |
| 131529016 | CB117F2401 | GNS-200E-00-00-E-00 | 9/4/2017 | 290 | |
| 131529188 | CB117F2401 | GNS-200E-00-00-E-00 | 9/6/2017 | 290 | |
| 131529229 | CB117F2401 | GNS-200E-00-00-E-00 | 9/6/2017 | 290 | |
| 131529230 | CB117F2401 | GNS-200E-00-00-E-00 | 9/6/2017 | 290 | |
| 131529733 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | 10/22 |
| 131529734 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | |
| 131529735 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | |

# Conformance List

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI Environmental, Inc.
1/100,000 sf, min 1/lot

Geonet: 1 ft x RW

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Shipped |
|---|---|---|---|---|---|
| 131529742 | CB117G2203 | GNS-200E-00-00-E-00 | 9/14/2017 | 290 | |
| 131529768 | CB117G2203 | GNS-200E-00-00-E-00 | 9/15/2017 | 290 | |
| 131529792 | CB117G2203 | GNS-200E-00-00-E-00 | 9/18/2017 | 290 | |
| 131530029 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | 10/22 |
| 131530031 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | |
| 131530032 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | |
| 131530042 | CB117G2003 | GNS-200E-00-00-E-00 | 9/21/2017 | 290 | |
| 131530072 | CB117G2003 | GNS-200E-00-00-E-00 | 9/22/2017 | 290 | |
| 131530073 | CB117G2003 | GNS-200E-00-00-E-00 | 9/22/2017 | 290 | |
| 131530074 | CB117G2003 | GNS-200E-00-00-E-00 | 9/22/2017 | 290 | |
| 131530163 | CB117G2003 | GNS-200E-00-00-E-00 | 9/25/2017 | 290 | |
| 131530164 | CB117G2003 | GNS-200E-00-00-E-00 | 9/25/2017 | 290 | |
| 131531748 | CB117H1104 | GNS-200E-00-00-E-00 | 10/21/2017 | 290 | 10/22 |
| 131531749 | CB117H1104 | GNS-200E-00-00-E-00 | 10/21/2017 | 290 | |
| 131531770 | CB117H1104 | GNS-200E-00-00-E-00 | 10/25/2017 | 290 | |
| 131531771 | CB117H1104 | GNS-200E-00-00-E-00 | 10/25/2017 | 290 | |
| 131531798 | CB117H1104 | GNS-200E-00-00-E-00 | 10/25/2017 | 290 | |
| 131531868 | CB117H1104 | GNS-200E-00-00-E-00 | 10/26/2017 | 290 | |
| 131533219 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | 10/22 |
| 131533220 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | |
| 131533269 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | |
| 131533270 | CB117J1301 | GNS-200E-00-00-E-00 | 11/28/2017 | 290 | |
| 131533349 | CB117J1301 | GNS-200E-00-00-E-00 | 11/29/2017 | 290 | |
| 131533350 | CB117J1301 | GNS-200E-00-00-E-00 | 11/29/2017 | 290 | |
| 131534039 | CB117J3004 | GNS-200E-00-00-E-00 | 12/13/2017 | 290 | 10/22 |
| 131534040 | CB117J3004 | GNS-200E-00-00-E-00 | 12/13/2017 | 290 | |
| 131534139 | CB117J3004 | GNS-200E-00-00-E-00 | 12/14/2017 | 290 | |
| 131534237 | CB117J3004 | GNS-200E-00-00-E-00 | 12/15/2017 | 290 | |
| 131534307 | CB117J3002 | GNS-200E-00-00-E-00 | 12/16/2017 | 290 | 10/22 |
| 131534345 | CB117J3002 | GNS-200E-00-00-E-00 | 12/16/2017 | 290 | |
| 131534443 | CB117J3002 | GNS-200E-00-00-E-00 | 12/17/2017 | 290 | |

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.6. Geonet Conformance Testing Results

November 6, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road, Suite 200
P1004
Ft. Worth, TX 76109.

email: gabney@mustangextreme.com

**Bill To:**

**<= Same (P.O. # 301445)**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51754 |
| Material(s) Tested: | Fifteen, Solmax GSE GNS-200E-00-00-E-00 Geonet(s) |
| Test(s) Requested: | Density (ASTM D 1505)<br>Carbon Black Content (ASTM D 1603, mod.)<br>Tensile Properties (ASTM D 7179, 12 ipm strain rate)<br>Thickness (ASTM D 1777)<br>Mass/Unit Area (ASTM D 3776)<br>Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg) |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131516112**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 257 | 263 | 266 | 265 | 258 | 256 | 258 | 256 | 257 | 260 | **260** | 4 |
| | | | | | | | | | | | **256** | << min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.91 | 14.41 | 13.88 | 14.20 | 14.37 | 15.10 | 15.22 | 15.58 | 15.65 | 14.43 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.23 | 0.22 | 0.23 | 0.23 | 0.24 | 0.25 | 0.25 | 0.25 | 0.23 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.36 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.953 | 0.953 | 0.953 | | | | | | | | **0.953** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.54 | 2.46 | | | | | | | | | **2.50** | 0.06 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 87 | 85 | 97 | 97 | 92 | | | | | | **91** | 6 |
| MD Elong. @ Max. Strength (%) | 33 | 34 | 34 | 32 | 32 | | | | | | **33** | 1 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131516300**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 251 | 251 | 254 | 257 | 253 | 260 | 254 | 259 | 258 | 259 | **256**<br>**251** | 3<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.59 | 15.07 | 14.52 | 13.96 | 13.78 | 14.29 | 14.12 | 14.47 | 14.37 | 13.94 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.24 | 0.24 | 0.23 | 0.22 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | **0.23** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.38 | 0.38 | | | | | | | | | **0.38** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.955 | 0.955 | 0.955 | | | | | | | | **0.955** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.57 | 2.60 | | | | | | | | | **2.59** | 0.02 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 88 | 90 | 91 | 87 | 94 | | | | | | **90** | 3 |
| MD Elong. @ Max. Strength (%) | 27 | 33 | 29 | 31 | 31 | | | | | | **30** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131517159**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 254 | 255 | 255 | 255 | 256 | 255 | 257 | 255 | 258 | 260 | **256**<br>**254** | 2<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.79 | 14.38 | 14.62 | 14.34 | 13.82 | 13.58 | 14.23 | 14.58 | 14.39 | 14.18 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.23 | 0.24 | 0.23 | 0.22 | 0.22 | 0.23 | 0.24 | 0.23 | 0.23 | **0.23** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.36 | 0.37 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.953 | 0.953 | 0.953 | | | | | | | | **0.953** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.56 | 2.57 | | | | | | | | | **2.57** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 93 | 86 | 89 | 91 | 94 | | | | | | **91** | 3 |
| MD Elong. @ Max. Strength (%) | 28 | 34 | 29 | 29 | 35 | | | | | | **31** | 3 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131520034**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 256 | 264 | 262 | 253 | 255 | 251 | 250 | 255 | 251 | 249 | **255**<br>**249** | 5<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 13.48 | 14.31 | 14.66 | 13.94 | 13.93 | 14.31 | 14.22 | 14.78 | 15.78 | 14.24 | | |
| Mass/unit area (lbs./sq.ft) | 0.22 | 0.23 | 0.24 | 0.23 | 0.23 | 0.23 | 0.23 | 0.24 | 0.26 | 0.23 | **0.23** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.954 | 0.954 | 0.954 | | | | | | | | **0.954** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.55 | 2.52 | | | | | | | | | **2.54** | 0.02 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 100 | 86 | 83 | 91 | 82 | | | | | | **88** | 7 |
| MD Elong. @ Max. Strength (%) | 29 | 32 | 27 | 30 | 29 | | | | | | **29** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131527194**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 262 | 261 | 257 | 258 | 259 | 256 | 254 | 261 | 264 | 260 | **259**<br>**254** | 3<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 15.03 | 15.54 | 14.89 | 14.32 | 13.96 | 14.60 | 14.61 | 14.97 | 14.66 | 14.21 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.25 | 0.24 | 0.23 | 0.23 | 0.24 | 0.24 | 0.24 | 0.24 | 0.23 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.38 | | | | | | | | | **0.38** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.953 | 0.954 | 0.954 | | | | | | | | **0.954** | 0.001 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.50 | 2.50 | | | | | | | | | **2.50** | 0.00 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 91 | 85 | 90 | 99 | 97 | | | | | | **93** | 5 |
| MD Elong. @ Max. Strength (%) | 31 | 30 | 34 | 29 | 29 | | | | | | **31** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131527523**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 255 | 255 | 255 | 260 | 254 | 257 | 257 | 259 | 261 | 253 | **257**<br>**253** | 3<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.17 | 14.49 | 14.91 | 14.51 | 14.05 | 14.24 | 14.73 | 15.01 | 14.83 | 14.36 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.23 | 0.24 | 0.24 | 0.23 | 0.23 | 0.24 | 0.24 | 0.24 | 0.23 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.39 | | | | | | | | | **0.38** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.954 | 0.954 | 0.954 | | | | | | | | **0.954** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.54 | 2.56 | | | | | | | | | **2.55** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 93 | 89 | 84 | 93 | 89 | | | | | | **90** | 4 |
| MD Elong. @ Max. Strength (%) | 27 | 29 | 30 | 33 | 30 | | | | | | **30** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131527897**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 259 | 265 | 264 | 258 | 255 | 250 | 249 | 254 | 257 | 255 | **257**<br>**249** | 5<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.84 | 14.44 | 14.41 | 13.95 | 13.57 | 13.80 | 14.55 | 15.61 | 15.30 | 14.76 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.23 | 0.23 | 0.23 | 0.22 | 0.22 | 0.24 | 0.25 | 0.25 | 0.24 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.954 | 0.954 | 0.954 | | | | | | | | **0.954** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.50 | 2.55 | | | | | | | | | **2.53** | 0.04 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 97 | 89 | 91 | 102 | 93 | | | | | | **94** | 5 |
| MD Elong. @ Max. Strength (%) | 32 | 34 | 34 | 30 | 32 | | | | | | **32** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131528521**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 275 | 261 | 261 | 259 | 263 | 266 | 260 | 262 | 261 | 257 | **263**<br>**257** | 5<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.83 | 14.83 | 15.26 | 15.29 | 15.05 | 14.64 | 14.32 | 14.81 | 14.91 | 15.44 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.24 | 0.25 | 0.25 | 0.24 | 0.24 | 0.23 | 0.24 | 0.24 | 0.25 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.36 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.955 | 0.955 | 0.955 | | | | | | | | **0.955** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.45 | 2.45 | | | | | | | | | **2.45** | 0.00 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 83 | 87 | 89 | 78 | 91 | | | | | | **86** | 5 |
| MD Elong. @ Max. Strength (%) | 30 | 34 | 31 | 34 | 31 | | | | | | **32** | 2 |

MD Machine Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131528894**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 260 | 264 | 257 | 260 | 258 | 255 | 258 | 261 | 259 | 256 | **259** | 3 |
| | | | | | | | | | | | **255** | << min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.20 | 14.88 | 15.63 | 15.01 | 14.25 | 14.38 | 14.58 | 14.69 | 14.85 | 14.92 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.24 | 0.25 | 0.24 | 0.23 | 0.23 | 0.24 | 0.24 | 0.24 | 0.24 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.38 | | | | | | | | | **0.38** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.957 | 0.957 | 0.957 | | | | | | | | **0.957** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.55 | 2.52 | | | | | | | | | **2.54** | 0.02 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 101 | 91 | 89 | 96 | 95 | | | | | | **94** | 5 |
| MD Elong. @ Max. Strength (%) | 28 | 34 | 34 | 31 | 31 | | | | | | **31** | 3 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131529733**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 256 | 255 | 258 | 256 | 253 | 252 | 252 | 256 | 256 | 256 | **255**<br>**252** | 2<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.48 | 14.34 | 14.80 | 14.68 | 14.12 | 14.08 | 14.09 | 14.55 | 14.65 | 14.29 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.23 | 0.24 | 0.24 | 0.23 | 0.23 | 0.23 | 0.24 | 0.24 | 0.23 | **0.23** | 0.00 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.36 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.957 | 0.957 | 0.957 | | | | | | | | **0.957** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.57 | 2.58 | | | | | | | | | **2.58** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 94 | 81 | 91 | 87 | 96 | | | | | | **90** | 6 |
| MD Elong. @ Max. Strength (%) | 30 | 31 | 26 | 28 | 33 | | | | | | **29** | 3 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131530029**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 263 | 269 | 262 | 256 | 250 | 250 | 254 | 260 | 256 | 254 | **257**<br>**250** | 6<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.25 | 14.37 | 15.45 | 14.46 | 14.26 | 13.60 | 14.55 | 15.28 | 15.14 | 15.41 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.23 | 0.25 | 0.23 | 0.23 | 0.22 | 0.24 | 0.25 | 0.25 | 0.25 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.955 | 0.955 | 0.955 | | | | | | | | **0.955** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.48 | 2.46 | | | | | | | | | **2.47** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 95 | 84 | 88 | 98 | 96 | | | | | | **92** | 6 |
| MD Elong. @ Max. Strength (%) | 30 | 33 | 35 | 31 | 33 | | | | | | **32** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131531748**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 259 | 257 | 256 | 254 | 258 | 259 | 259 | 260 | 262 | 258 | **258** | 2 |
| | | | | | | | | | | | **254** | << min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.48 | 14.96 | 14.80 | 15.45 | 14.63 | 14.74 | 13.71 | 14.47 | 14.97 | 14.72 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.24 | 0.24 | 0.25 | 0.24 | 0.24 | 0.22 | 0.23 | 0.24 | 0.24 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.35 | 0.37 | | | | | | | | | **0.36** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.956 | 0.956 | 0.956 | | | | | | | | **0.956** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.44 | 2.44 | | | | | | | | | **2.44** | 0.00 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 93 | 83 | 94 | 87 | 97 | | | | | | **91** | 6 |
| MD Elong. @ Max. Strength (%) | 32 | 35 | 30 | 33 | 33 | | | | | | **32** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131533219**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 254 | 264 | 256 | 260 | 260 | 254 | 256 | 263 | 260 | 261 | **259**<br>**254** | 4<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.46 | 14.66 | 15.38 | 14.70 | 14.00 | 13.99 | 14.79 | 15.05 | 15.08 | 14.47 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.24 | 0.25 | 0.24 | 0.23 | 0.23 | 0.24 | 0.24 | 0.24 | 0.23 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.36 | 0.38 | | | | | | | | | **0.37** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.952 | 0.952 | 0.952 | | | | | | | | **0.952** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.46 | 2.47 | | | | | | | | | **2.47** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 98 | 91 | 95 | 95 | 92 | | | | | | **94** | 2 |
| MD Elong. @ Max. Strength (%) | 32 | 34 | 34 | 30 | 31 | | | | | | **32** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131534039**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 261 | 258 | 261 | 255 | 262 | 255 | 259 | 257 | 256 | 252 | **258**<br>**252** | 3<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.00 | 14.27 | 15.12 | 14.69 | 14.66 | 14.00 | 13.91 | 14.66 | 14.86 | 15.18 | | |
| Mass/unit area (lbs./sq.ft) | 0.23 | 0.23 | 0.24 | 0.24 | 0.24 | 0.23 | 0.23 | 0.24 | 0.24 | 0.25 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.38 | 0.40 | | | | | | | | | **0.39** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.955 | 0.955 | 0.955 | | | | | | | | **0.955** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.50 | 2.52 | | | | | | | | | **2.51** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 93 | 93 | 83 | 96 | 100 | | | | | | **93** | 7 |
| MD Elong. @ Max. Strength (%) | 28 | 30 | 29 | 33 | 31 | | | | | | **30** | 2 |

MD Machine Direction



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**GEONET TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE GNS-200E-00-00-E-00 Geonet**
**Sample Identification: 131534307**
**TRI Log #: 51754**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Thickness (ASTM D 1777)** | | | | | | | | | | | | |
| Thickness (mils) | 257 | 260 | 260 | 259 | 259 | 254 | 259 | 260 | 262 | 252 | **258**<br>**252** | 3<br><< min |
| **Mass/Unit Area (ASTM D 3776)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 14.70 | 14.90 | 14.92 | 14.40 | 13.95 | 14.68 | 15.06 | 15.29 | 14.58 | 14.22 | | |
| Mass/unit area (lbs./sq.ft) | 0.24 | 0.24 | 0.24 | 0.23 | 0.23 | 0.24 | 0.24 | 0.25 | 0.24 | 0.23 | **0.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | | | | | | | | |
| Melt Flow Index (g/10 min) | 0.37 | 0.38 | | | | | | | | | **0.38** | |
| **Density (ASTM D 1505)** | | | | | | | | | | | | |
| Density (g/cm3) | 0.956 | 0.956 | 0.956 | | | | | | | | **0.956** | 0.000 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | | | | | | | | |
| % Carbon Black | 2.59 | 2.58 | | | | | | | | | **2.59** | 0.01 |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | | | | | | | | |
| MD Max. Strength (ppi) | 95 | 92 | 94 | 102 | 92 | | | | | | **95** | 4 |
| MD Elong. @ Max. Strength (%) | 28 | 34 | 34 | 31 | 32 | | | | | | **32** | 2 |

MD Machine Direction



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# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.7. Geocomposite Certifications

# Roll Allocation List

DOUBLE SIDED GEOCOMPOSITE

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Resin Lot | Top | Bottom | Manufacturing date | Length |
|---|---|---|---|---|---|---|
| 131576690 | FS2-225E-10-10-E-0N | 19I1298 | 130518956 | 130518942 | 10/20/2019 | 200.00 |
| 131576691 | FS2-225E-10-10-E-0N | 19I1298 | 130518956 | 130518942 | 10/20/2019 | 200.00 |
| 131576692 | FS2-225E-10-10-E-0N | 19I1298 | 130518956 | 130518942 | 10/20/2019 | 200.00 |
| 131576693 | FS2-225E-10-10-E-0N | 19I1298 | 130518956 | 130518942 | 10/20/2019 | 200.00 |
| 131576694 | FS2-225E-10-10-E-0N | 19I1298 | 130518934 | 130518965 | 10/20/2019 | 200.00 |
| 131576695 | FS2-225E-10-10-E-0N | 19I1298 | 130518934 | 130518965 | 10/20/2019 | 200.00 |
| 131576696 | FS2-225E-10-10-E-0N | 19I1298 | 130518934 | 130518965 | 10/20/2019 | 200.00 |
| 131576697 | FS2-225E-10-10-E-0N | 19I1298 | 130518934 | 130518965 | 10/20/2019 | 200.00 |
| 131576698 | FS2-225E-10-10-E-0N | 19I1298 | 130518934 | 130518965 | 10/20/2019 | 200.00 |
| 131576699 | FS2-225E-10-10-E-0N | 19I1298 | 130518934 | 130518965 | 10/20/2019 | 200.00 |
| 131576701 | FS2-225E-10-10-E-0N | 19I1298 | 130518931 | 130518943 | 10/20/2019 | 200.00 |
| 131576702 | FS2-225E-10-10-E-0N | 19I1298 | 130518931 | 130518943 | 10/20/2019 | 200.00 |
| 131576703 | FS2-225E-10-10-E-0N | 19I1298 | 130518931 | 130518943 | 10/20/2019 | 200.00 |
| 131576704 | FS2-225E-10-10-E-0N | 19I1298 | 130518931 | 130518943 | 10/20/2019 | 200.00 |
| 131576705 | FS2-225E-10-10-E-0N | 19I1298 | 130518953 | 130518943 | 10/20/2019 | 200.00 |
| 131576706 | FS2-225E-10-10-E-0N | 19I1298 | 130518953 | 130518935 | 10/20/2019 | 200.00 |
| 131576707 | FS2-225E-10-10-E-0N | 19I1298 | 130518953 | 130518935 | 10/20/2019 | 200.00 |
| 131576708 | FS2-225E-10-10-E-0N | 19I1298 | 130518953 | 130518935 | 10/20/2019 | 200.00 |
| 131576709 | FS2-225E-10-10-E-0N | 19I1298 | 130518953 | 130518935 | 10/20/2019 | 200.00 |
| 131576710 | FS2-225E-10-10-E-0N | 19I1298 | 130518933 | 130518935 | 10/20/2019 | 200.00 |
| 131576711 | FS2-225E-10-10-E-0N | 19I1298 | 130518933 | 130518936 | 10/20/2019 | 200.00 |
| 131576712 | FS2-225E-10-10-E-0N | 19I1298 | 130518933 | 130518936 | 10/20/2019 | 200.00 |
| 131576713 | FS2-225E-10-10-E-0N | 19I1298 | 130518933 | 130518936 | 10/20/2019 | 200.00 |
| 131576714 | FS2-225E-10-10-E-0N | 19I1298 | 130518933 | 130518936 | 10/20/2019 | 200.00 |
| 131576715 | FS2-225E-10-10-E-0N | 19I1298 | 130518933 | 130518936 | 10/20/2019 | 200.00 |
| 131576716 | FS2-225E-10-10-E-0N | 19I1298 | 130518938 | 130518936 | 10/20/2019 | 200.00 |
| 131576717 | FS2-225E-10-10-E-0N | 19I1298 | 130518938 | 130518937 | 10/20/2019 | 200.00 |
| 131576718 | FS2-225E-10-10-E-0N | 19I1298 | 130518938 | 130518937 | 10/20/2019 | 200.00 |
| 131576719 | FS2-225E-10-10-E-0N | 19I1298 | 130518938 | 130518937 | 10/20/2019 | 200.00 |
| 131576720 | FS2-225E-10-10-E-0N | 19I1298 | 130518938 | 130518937 | 10/20/2019 | 200.00 |
| 131576721 | FS2-225E-10-10-E-0N | 19I1298 | 130518939 | 130518937 | 10/20/2019 | 200.00 |
| 131576722 | FS2-225E-10-10-E-0N | 19I1298 | 130518939 | 130518993 | 10/20/2019 | 200.00 |
| 131576723 | FS2-225E-10-10-E-0N | 19I1298 | 130518939 | 130518993 | 10/20/2019 | 200.00 |
| 131576724 | FS2-225E-10-10-E-0N | 19I1298 | 130518939 | 130518993 | 10/20/2019 | 200.00 |
| 131576725 | FS2-225E-10-10-E-0N | 19I1298 | 130518939 | 130518993 | 10/20/2019 | 200.00 |
| 131576726 | FS2-225E-10-10-E-0N | 19I1298 | 130518939 | 130518993 | 10/20/2019 | 200.00 |
| 131576727 | FS2-225E-10-10-E-0N | 19I1298 | 130518990 | 130518993 | 10/20/2019 | 200.00 |
| 131576728 | FS2-225E-10-10-E-0N | 19I1298 | 130518990 | 130518988 | 10/20/2019 | 200.00 |
| 131576729 | FS2-225E-10-10-E-0N | 19I1298 | 130518990 | 130518988 | 10/20/2019 | 200.00 |
| 131576730 | FS2-225E-10-10-E-0N | 19I1298 | 130518990 | 130518988 | 10/20/2019 | 200.00 |
| 131576731 | FS2-225E-10-10-E-0N | 19I1298 | 130518990 | 130518988 | 10/20/2019 | 200.00 |
| 131576732 | FS2-225E-10-10-E-0N | 19I1298 | 130518989 | 130518988 | 10/20/2019 | 200.00 |
| 131576733 | FS2-225E-10-10-E-0N | 19I1298 | 130518989 | 130518988 | 10/20/2019 | 200.00 |
| 131576734 | FS2-225E-10-10-E-0N | 19I1298 | 130518989 | 130518985 | 10/20/2019 | 200.00 |
| 131576735 | FS2-225E-10-10-E-0N | 19I1298 | 130518989 | 130518985 | 10/20/2019 | 200.00 |
| 131576736 | FS2-225E-10-10-E-0N | 19I1298 | 130518989 | 130518985 | 10/20/2019 | 200.00 |
| 131576737 | FS2-225E-10-10-E-0N | 19I1298 | 130518989 | 130518985 | 10/20/2019 | 200.00 |
| 131576738 | FS2-225E-10-10-E-0N | 19I1298 | 130518984 | 130518985 | 10/20/2019 | 200.00 |
| 131576739 | FS2-225E-10-10-E-0N | 19I1298 | 130518984 | 130518979 | 10/20/2019 | 200.00 |
| 131576740 | FS2-225E-10-10-E-0N | 19I1298 | 130518984 | 130518979 | 10/20/2019 | 200.00 |
| 131576741 | FS2-225E-10-10-E-0N | 19I1298 | 130518984 | 130518979 | 10/20/2019 | 200.00 |
| 131576742 | FS2-225E-10-10-E-0N | 19I1298 | 130518984 | 130518979 | 10/20/2019 | 200.00 |
| 131576743 | FS2-225E-10-10-E-0N | 19I1298 | 130518982 | 130518979 | 10/20/2019 | 200.00 |
| 131576744 | FS2-225E-10-10-E-0N | 19I1298 | 130518982 | 130518981 | 10/20/2019 | 200.00 |
| 131576745 | FS2-225E-10-10-E-0N | 19I1298 | 130518982 | 130518981 | 10/20/2019 | 200.00 |
| 131576746 | FS2-225E-10-10-E-0N | 19I1298 | 130518982 | 130518981 | 10/20/2019 | 200.00 |
| 131576747 | FS2-225E-10-10-E-0N | 19I1298 | 130518982 | 130518981 | 10/20/2019 | 200.00 |
| 131576748 | FS2-225E-10-10-E-0N | 19I1298 | 130518982 | 130518981 | 10/20/2019 | 200.00 |
| 131576749 | FS2-225E-10-10-E-0N | 19I1298 | 130518975 | 130518981 | 10/20/2019 | 200.00 |
| 131576750 | FS2-225E-10-10-E-0N | 19I1298 | 130518975 | 130518980 | 10/20/2019 | 200.00 |
| 131576751 | FS2-225E-10-10-E-0N | 19I1298 | 130518975 | 130518980 | 10/20/2019 | 200.00 |
| 131576752 | FS2-225E-10-10-E-0N | 19I1298 | 130518975 | 130518980 | 10/20/2019 | 200.00 |
| 131576753 | FS2-225E-10-10-E-0N | 19I1298 | 130518975 | 130518980 | 10/20/2019 | 200.00 |
| 131576754 | FS2-225E-10-10-E-0N | 19I1298 | 130518975 | 130518980 | 10/20/2019 | 200.00 |
| 131576755 | FS2-225E-10-10-E-0N | 19I1298 | 130518983 | 130518980 | 10/20/2019 | 200.00 |
| 131576756 | FS2-225E-10-10-E-0N | 19I1298 | 130518983 | 130518986 | 10/20/2019 | 200.00 |
| 131576757 | FS2-225E-10-10-E-0N | 19I1298 | 130518983 | 130518986 | 10/20/2019 | 200.00 |
| 131576758 | FS2-225E-10-10-E-0N | 19I1298 | 130518983 | 130518986 | 10/20/2019 | 200.00 |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Resin Lot | Top | Bottom | Manufacturing date | Length |
|---|---|---|---|---|---|---|
| 131576759 | FS2-225E-10-10-E-0N | 19I1298 | 130518983 | 130518986 | 10/21/2019 | 200.00 |
| 131576760 | FS2-225E-10-10-E-0N | 19I1298 | 130518952 | 130518986 | 10/21/2019 | 200.00 |
| 131576761 | FS2-225E-10-10-E-0N | 19I1298 | 130518952 | 130518977 | 10/21/2019 | 200.00 |
| 131576762 | FS2-225E-10-10-E-0N | 19I1298 | 130518952 | 130518977 | 10/21/2019 | 200.00 |
| 131576763 | FS2-225E-10-10-E-0N | 19I1298 | 130518952 | 130518977 | 10/21/2019 | 200.00 |
| 131576764 | FS2-225E-10-10-E-0N | 19I1298 | 130518952 | 130518977 | 10/21/2019 | 200.00 |
| 131576765 | FS2-225E-10-10-E-0N | 19I1298 | 130518952 | 130518977 | 10/21/2019 | 200.00 |
| 131576766 | FS2-225E-10-10-E-0N | 19I1298 | 130518992 | 130518977 | 10/21/2019 | 200.00 |
| 131576767 | FS2-225E-10-10-E-0N | 19I1298 | 130518992 | 130518972 | 10/21/2019 | 200.00 |
| 131576768 | FS2-225E-10-10-E-0N | 19I1298 | 130518992 | 130518972 | 10/21/2019 | 200.00 |
| 131576769 | FS2-225E-10-10-E-0N | 19I1298 | 130518992 | 130518972 | 10/21/2019 | 200.00 |
| 131576770 | FS2-225E-10-10-E-0N | 19I1298 | 130518992 | 130518972 | 10/21/2019 | 200.00 |
| 131576771 | FS2-225E-10-10-E-0N | 19I1298 | 130518991 | 130518972 | 10/21/2019 | 200.00 |
| 131576772 | FS2-225E-10-10-E-0N | 19I1298 | 130518991 | 130518972 | 10/21/2019 | 200.00 |
| 131576773 | FS2-225E-10-10-E-0N | 19I1298 | 130518991 | 130518987 | 10/21/2019 | 200.00 |
| 131576774 | FS2-225E-10-10-E-0N | 19I1298 | 130518991 | 130518987 | 10/21/2019 | 200.00 |
| 131576775 | FS2-225E-10-10-E-0N | 19I1298 | 130518991 | 130518987 | 10/21/2019 | 200.00 |
| 131576776 | FS2-225E-10-10-E-0N | 19I1298 | 130518991 | 130518987 | 10/21/2019 | 200.00 |
| 131576777 | FS2-225E-10-10-E-0N | 19I1298 | 130518966 | 130518987 | 10/21/2019 | 200.00 |
| 131576778 | FS2-225E-10-10-E-0N | 19I1298 | 130518966 | 130518951 | 10/21/2019 | 200.00 |
| 131576779 | FS2-225E-10-10-E-0N | 19I1298 | 130518966 | 130518951 | 10/21/2019 | 200.00 |
| 131576780 | FS2-225E-10-10-E-0N | 19I1298 | 130518966 | 130518951 | 10/21/2019 | 200.00 |
| 131576781 | FS2-225E-10-10-E-0N | 19I1298 | 130518966 | 130518951 | 10/21/2019 | 200.00 |
| 131576782 | FS2-225E-10-10-E-0N | 19I1298 | 130518966 | 130518951 | 10/21/2019 | 200.00 |
| 131576783 | FS2-225E-10-10-E-0N | 19I1298 | 130518976 | 130518951 | 10/21/2019 | 200.00 |
| 131576784 | FS2-225E-10-10-E-0N | 19I1298 | 130518976 | 130518974 | 10/21/2019 | 200.00 |
| 131576785 | FS2-225E-10-10-E-0N | 19I1298 | 130518976 | 130518974 | 10/21/2019 | 200.00 |
| 131576786 | FS2-225E-10-10-E-0N | 19I1298 | 130518976 | 130518974 | 10/21/2019 | 200.00 |
| 131576787 | FS2-225E-10-10-E-0N | 19I1298 | 130518976 | 130518974 | 10/21/2019 | 200.00 |
| 131576788 | FS2-225E-10-10-E-0N | 19I1298 | 130518971 | 130518974 | 10/21/2019 | 200.00 |
| 131576789 | FS2-225E-10-10-E-0N | 19I1298 | 130518971 | 130518970 | 10/21/2019 | 200.00 |
| 131576790 | FS2-225E-10-10-E-0N | 19I1298 | 130518971 | 130518970 | 10/21/2019 | 200.00 |
| 131576791 | FS2-225E-10-10-E-0N | 19I1298 | 130518971 | 130518970 | 10/21/2019 | 200.00 |
| 131576792 | FS2-225E-10-10-E-0N | 19I1298 | 130518971 | 130518970 | 10/21/2019 | 200.00 |
| 131576793 | FS2-225E-10-10-E-0N | 19I1298 | 130518971 | 130518970 | 10/21/2019 | 200.00 |
| 131576794 | FS2-225E-10-10-E-0N | 19I1298 | 130518973 | 130518970 | 10/21/2019 | 200.00 |
| 131576795 | FS2-225E-10-10-E-0N | 19I1298 | 130518973 | 130518978 | 10/21/2019 | 200.00 |
| 131576796 | FS2-225E-10-10-E-0N | 19I1298 | 130518973 | 130518978 | 10/21/2019 | 200.00 |
| 131576797 | FS2-225E-10-10-E-0N | 19I1298 | 130518973 | 130518978 | 10/21/2019 | 200.00 |
| 131576798 | FS2-225E-10-10-E-0N | 19I1298 | 130518973 | 130518978 | 10/21/2019 | 200.00 |
| 131576799 | FS2-225E-10-10-E-0N | 19I1298 | 130518973 | 130518978 | 10/21/2019 | 200.00 |
| 131576800 | FS2-225E-10-10-E-0N | 19I1298 | 130518969 | 130518978 | 10/21/2019 | 200.00 |
| 131576801 | FS2-225E-10-10-E-0N | 19I1298 | 130518969 | 130518945 | 10/21/2019 | 200.00 |
| 131576802 | FS2-225E-10-10-E-0N | 19I1298 | 130518969 | 130518945 | 10/21/2019 | 200.00 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS2-225E-10-10-E-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Ply Adhesion Average ASTM D7005 (ppi) Side B | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|---|
| 131576690 | 239 | 93 | 0.961 | 2.6 | 6.7 | 7.8 | 0.207 |
| 131576691 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576692 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576693 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576694 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576695 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576696 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576697 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576698 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576699 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576701 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576702 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576703 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576704 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576705 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576706 | 242 | 91 | 0.958 | 2.6 | 2.9 | 3.3 | 0.210 |
| 131576707 | 242 | 91 | 0.958 | 2.6 | 4.0 | 3.4 | 0.210 |
| 131576708 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576709 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576710 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576711 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576712 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576713 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576714 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576715 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576716 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576717 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576718 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576719 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576720 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576721 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576722 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576723 | 239 | 83 | 0.960 | 2.6 | 4.0 | 3.4 | 0.202 |
| 131576724 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS2-225E-10-10-E-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Ply Adhesion Average ASTM D7005 (ppi) Side B | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|---|
| 131576725 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576726 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576727 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576728 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576729 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576730 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576731 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576732 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576733 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576734 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576735 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576736 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576737 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576738 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576739 | 243 | 85 | 0.958 | 2.6 | 2.7 | 2.4 | 0.208 |
| 131576740 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576741 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576742 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576743 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576744 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576745 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576746 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576747 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576748 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576749 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576750 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576751 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576752 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576753 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576754 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576755 | 241 | 85 | 0.958 | 2.6 | 2.0 | 1.8 | 0.205 |
| 131576756 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576757 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576758 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS2-225E-10-10-E-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Ply Adhesion Average ASTM D7005 (ppi) Side B | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|---|
| 131576759 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576760 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576761 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576762 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576763 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576764 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576765 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576766 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576767 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576768 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576769 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576770 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576771 | 241 | 86 | 0.959 | 2.6 | 3.1 | 3.7 | 0.201 |
| 131576772 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576773 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576774 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576775 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576776 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576777 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576778 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576779 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576780 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576781 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576782 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576783 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576784 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576785 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576786 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576787 | 246 | 95 | 0.959 | 2.6 | 3.7 | 3.4 | 0.216 |
| 131576788 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576789 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576790 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576791 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576792 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS2-225E-10-10-E-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Ply Adhesion Average ASTM D7005 (ppi) Side B | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|---|
| 131576793 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576794 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576795 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576796 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576797 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576798 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576799 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576800 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576801 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |
| 131576802 | 233 | 76 | 0.960 | 2.5 | 5.0 | 4.1 | 0.189 |

**Laboratory Manager**

This test report shall not be reproduced, except in full, without written approval of the laboratory.

GSE Environmental, LLC

# ROLL TEST DATA REPORT



**Report Date :** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal , NM US | FBR-100E-EBN-E-00 | |

| Roll Number | Mass per Unit Area ASTM D5261 (oz/yd²) | ASTM D4491 Water Flow Rate (gpm/ft²) | ASTM D4491 Permittivity (sec-1) | ASTM D4751 AOS (mm) | ASTM D4632 Grab Strength (lbs) MD | ASTM D4632 Grab Strength (lbs) TD | ASTM D4632 Grab Elongation (%) MD | ASTM D4632 Grab Elongation (%) TD | ASTM D4533 Trapezoidal Tear (lbs) MD | ASTM D4533 Trapezoidal Tear (lbs) TD | Puncture Resistance ASTM D4833 (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 130518931 | 11.6 | 99 | 1.30 | 0.150 | 307 | 369 | 81 | 111 | 286 | 369 | 211 |
| 130518933 | 11.6 | 99 | 1.30 | 0.150 | 307 | 369 | 81 | 111 | 286 | 369 | 211 |
| 130518934 | 11.6 | 99 | 1.30 | 0.150 | 307 | 369 | 81 | 111 | 286 | 369 | 211 |
| 130518935 | 11.6 | 99 | 1.30 | 0.150 | 307 | 369 | 81 | 111 | 286 | 369 | 211 |
| 130518936 | 10.9 | 102 | 1.40 | 0.150 | 295 | 408 | 81 | 107 | 289 | 371 | 213 |
| 130518937 | 10.9 | 102 | 1.40 | 0.150 | 295 | 408 | 81 | 107 | 289 | 371 | 213 |
| 130518938 | 10.9 | 102 | 1.40 | 0.150 | 295 | 408 | 81 | 107 | 289 | 371 | 213 |
| 130518939 | 10.9 | 102 | 1.40 | 0.150 | 295 | 408 | 81 | 107 | 289 | 371 | 213 |
| 130518942 | 10.2 | 93 | 1.20 | 0.150 | 276 | 348 | 70 | 108 | 293 | 354 | 203 |
| 130518943 | 10.2 | 93 | 1.20 | 0.150 | 276 | 348 | 70 | 108 | 293 | 354 | 203 |
| 130518945 | 10.2 | 93 | 1.20 | 0.150 | 276 | 348 | 70 | 108 | 293 | 354 | 203 |
| 130518951 | 10.7 | 104 | 1.40 | 0.150 | 309 | 344 | 82 | 84 | 187 | 248 | 184 |
| 130518952 | 10.7 | 104 | 1.40 | 0.150 | 309 | 344 | 82 | 84 | 187 | 248 | 184 |
| 130518953 | 10.7 | 104 | 1.40 | 0.150 | 309 | 344 | 82 | 84 | 187 | 248 | 184 |
| 130518956 | 11.0 | 105 | 1.40 | 0.150 | 321 | 373 | 80 | 99 | 194 | 212 | 192 |
| 130518965 | 10.5 | 104 | 1.40 | 0.150 | 295 | 358 | 81 | 91 | 178 | 262 | 181 |
| 130518966 | 10.7 | 105 | 1.40 | 0.150 | 310 | 386 | 86 | 109 | 180 | 269 | 204 |
| 130518969 | 10.7 | 105 | 1.40 | 0.150 | 310 | 386 | 86 | 109 | 180 | 269 | 204 |
| 130518970 | 10.7 | 105 | 1.40 | 0.150 | 310 | 386 | 86 | 109 | 180 | 269 | 204 |
| 130518971 | 10.8 | 106 | 1.40 | 0.150 | 315 | 356 | 87 | 92 | 178 | 245 | 188 |
| 130518972 | 10.8 | 106 | 1.40 | 0.150 | 315 | 356 | 87 | 92 | 178 | 245 | 188 |
| 130518973 | 10.8 | 106 | 1.40 | 0.150 | 315 | 356 | 87 | 92 | 178 | 245 | 188 |
| 130518974 | 10.8 | 106 | 1.40 | 0.150 | 315 | 356 | 87 | 92 | 178 | 245 | 188 |
| 130518975 | 10.8 | 106 | 1.40 | 0.150 | 315 | 356 | 87 | 92 | 178 | 245 | 188 |
| 130518976 | 10.6 | 105 | 1.40 | 0.150 | 298 | 347 | 84 | 91 | 170 | 265 | 209 |
| 130518977 | 10.6 | 105 | 1.40 | 0.150 | 298 | 347 | 84 | 91 | 170 | 265 | 209 |
| 130518978 | 10.6 | 105 | 1.40 | 0.150 | 298 | 347 | 84 | 91 | 170 | 265 | 209 |
| 130518979 | 10.6 | 105 | 1.40 | 0.150 | 298 | 347 | 84 | 91 | 170 | 265 | 209 |
| 130518980 | 10.6 | 105 | 1.40 | 0.150 | 298 | 347 | 84 | 91 | 170 | 265 | 209 |
| 130518981 | 10.6 | 103 | 1.40 | 0.150 | 300 | 373 | 81 | 124 | 173 | 259 | 189 |
| 130518982 | 10.6 | 103 | 1.40 | 0.150 | 300 | 373 | 81 | 124 | 173 | 259 | 189 |
| 130518983 | 10.6 | 103 | 1.40 | 0.150 | 300 | 373 | 81 | 124 | 173 | 259 | 189 |
| 130518984 | 10.6 | 103 | 1.40 | 0.150 | 300 | 373 | 81 | 124 | 173 | 259 | 189 |
| 130518985 | 10.6 | 103 | 1.40 | 0.150 | 300 | 373 | 81 | 124 | 173 | 259 | 189 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

***Report Date :*** Oct/22/2019

| ***Sales Order No.*** | ***Customer Name*** | ***Project Location*** | ***Product Name*** | ***BOL Number*** |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal , NM US | FBR-100E-EBN-E-00 | |

| **Roll Number** | Mass per Unit Area ASTM D5261 (oz/yd²) | ASTM D4491 Water Flow Rate (gpm/ft²) | ASTM D4491 Permittivity (sec-1) | ASTM D4751 AOS (mm) | ASTM D4632 Grab Strength (lbs) MD | ASTM D4632 Grab Strength (lbs) TD | ASTM D4632 Grab Elongation (%) MD | ASTM D4632 Grab Elongation (%) TD | ASTM D4533 Trapezoidal Tear (lbs) MD | ASTM D4533 Trapezoidal Tear (lbs) TD | Puncture Resistance ASTM D4833 (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **130518986** | 11.5 | 104 | 1.40 | 0.150 | 342 | 365 | 97 | 106 | 201 | 231 | 181 |
| **130518987** | 11.5 | 104 | 1.40 | 0.150 | 342 | 365 | 97 | 106 | 201 | 231 | 181 |
| **130518988** | 11.5 | 104 | 1.40 | 0.150 | 342 | 365 | 97 | 106 | 201 | 231 | 181 |
| **130518989** | 11.5 | 104 | 1.40 | 0.150 | 342 | 365 | 97 | 106 | 201 | 231 | 181 |
| **130518990** | 11.5 | 104 | 1.40 | 0.150 | 342 | 365 | 97 | 106 | 201 | 231 | 181 |
| **130518991** | 10.6 | 108 | 1.40 | 0.150 | 314 | 345 | 102 | 107 | 129 | 167 | 180 |
| **130518992** | 10.6 | 108 | 1.40 | 0.150 | 314 | 345 | 102 | 107 | 129 | 167 | 180 |
| **130518993** | 10.6 | 108 | 1.40 | 0.150 | 314 | 345 | 102 | 107 | 129 | 167 | 180 |

**Laboratory Manager** _____

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Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS
201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT TX 77978
PHONE:( 888 )FPCUSA3

# Certificate of Analysis

(CONFIDENTIAL)

CUSTOMER:GSE ENVIRONMENTAL, LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
PRODUCT :HB5502B
RAILCAR FPAX140035
CLEANING/INSPECTION NO: 140035092519

S/O NO : EU9B038
CUSTOMER PO : 03-517037
DATE SHIPPED: 9/30/19
LOT NO : 19I1298
WEIGHT (LB) : 198,250.00
CUSTID:FT03112 SPIDE3

| TEST ITEM | REFERENCE METHOD | TEST VALUE |
|---|---|---|
| Melt Index,g/10min | ASTM D1238 | .36 |
| Density, g/cm3 | ASTM D1505 | .9538 |

Linda Kao

QC SUPERVISOR: LINDA KAO

Report Date
10/22/2019

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG /OWL LANNDFILL
**Sales Order:** 88056

**Required Testing:** ASTM D 1238, 190 / 2.16 -- Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

**Frequency:** 1/50,000 sf

**Specification:** ≤ 1.0 g/10 minutes

| Product Code | Roll Number | Result |
|---|---|---|
| FS2-225E-10-10-E-0N | 131576690 | 0.30 |
| FS2-225E-10-10-E-0N | 131576706 | 0.30 |
| FS2-225E-10-10-E-0N | 131576723 | 0.31 |
| FS2-225E-10-10-E-0N | 131576739 | 0.31 |
| FS2-225E-10-10-E-0N | 131576755 | 0.30 |
| FS2-225E-10-10-E-0N | 131576771 | 0.30 |
| FS2-225E-10-10-E-0N | 131576878 | 0.30 |

Approved by: Barbara McCrea
Date: October 22, 2019

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1245 Eastland Avenue
Kingstree, SC 29556
Phone 843-382-4603
Fax 843-382-4604

Date: October 22, 2019

Project: # 88056

Ref: Ultraviolet (UV) Resistance

To Whom It May Concern:

The resistance of nonwoven needle punched geotextiles to ultraviolet light depends primarily on antioxident and carbon black package mixed with resin to prepare a formulation for fiber extrusion. As long as this formulation remains the same the UV resistance of a geotextiles does not change. Therefore, UV testing is performed only once per resin formulation, according to ASTM Test Method D4355 and results are included on Solmax geotextile specification sheet. Currently, all Solmax geotextiles meet or exceed a value of 70% strength retained after 500 hours of UV exposure. Solmax will meet or exceed this value for the referenced project.

Although Solmax geotextiles are manufactured using one of the best available antioxident packages, we recommend covering the geotextiles within 30 days of exposure to direct Sunlight. This period does not include time during which geotextiles rolls remain on site covered in black shrink-wrap. Our recommendation is based on UV performance data published in technical literature indicating geotextile strength can decrease sharply after prolonged exposure to Sunlight.



Thomas E. Harrelson
Lab Manager

SOLMAX GSE Environmental, LLC.

# *Transmissivity Report*

## *ASTM D4716*

***Roll No.*** *131576690*

### *ROLL IDENTIFICATION*

| | |
|---|---|
| ***Roll Number*** | 131576690 |
| ***Product Name*** | FS2-225-10-10-E-0N |
| ***Production Date*** | 10/20/2019 |

### *CUSTOMER INFORMATION*

| | |
|---|---|
| ***Order Number*** | 88056 |
| ***Customer Name*** | Mustang Extreme Environmental Services, LLC |
| ***Project Name*** | MUSTANG / OWL LANNDFILL |
| ***Location*** | JAL NM |

| ***Pressure (psf)*** | ***Gradient*** | ***Net/Composite*** | ***Transmissivity Results*** $(m^2/sec)$ | $(gal/min/ft)$ | ***Seat Time (min)*** | ***Boundary*** |
|---|---|---|---|---|---|---|
| 10,000 | 0.10 | Composite | 3.13E-04 | 1.51 | 15 | SS Plates |
| 10,000 | 0.10 | Net | 5.49E-03 | 26.52 | 15 | SS Plates |



GSE QC APPROVED

# CONFORMANCE LIST

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI/AUSTIN 1/100,000 sf, min 1/lot. Geonet 2 ft x 2 ft coupons. Geotextiles 3 ft x rw. Geocomposite 2 ft x 2 ft coupons.

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Sent |
|---|---|---|---|---|---|
| **131576690** | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | 10/22 |
| 131576691 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576692 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576693 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576694 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576695 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576696 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576697 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576698 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576699 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576701 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576702 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576703 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576704 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576705 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576706 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576707 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576708 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576709 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576710 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576711 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576712 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576713 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576714 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576715 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576716 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576717 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576718 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576719 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576720 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576721 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576722 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| **131576723** | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | 10/22 |
| 131576724 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576725 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576726 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576727 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576728 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576729 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576730 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576731 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576732 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576733 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576734 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576735 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576736 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576737 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576738 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576739 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |

# CONFORMANCE LIST

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI/AUSTIN 1/100,000 sf, min 1/lot. Geonet 2 ft x 2 ft coupons. Geotextiles 3 ft x rw. Geocomposite 2 ft x 2 ft coupons.

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Sent |
|---|---|---|---|---|---|
| 131576740 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576741 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576742 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576743 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576744 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576745 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576746 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576747 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576748 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576749 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576750 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576751 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576752 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576753 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576754 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| **131576755** | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | 10/22 |
| 131576756 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576757 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576758 | 19I1298 | FS2-225E-10-10-E-0N | 10/20/2019 | 200 | |
| 131576759 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576760 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576761 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576762 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576763 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576764 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576765 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576766 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576767 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576768 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576769 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576770 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576771 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576772 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576773 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576774 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576775 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576776 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576777 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576778 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576779 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576780 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576781 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576782 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576783 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576784 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576785 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576786 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| **131576787** | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | 10/22 |
| 131576788 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |

# CONFORMANCE LIST

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI/AUSTIN 1/100,000 sf, min 1/lot. Geonet 2 ft x 2 ft coupons. Geotextiles 3 ft x rw. Geocomposite 2 ft x 2 ft coupons.

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Sent |
|---|---|---|---|---|---|
| 131576789 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576790 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576791 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576792 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576793 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576794 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576795 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576796 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576797 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576798 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576799 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576800 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576801 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |
| 131576802 | 19I1298 | FS2-225E-10-10-E-0N | 10/21/2019 | 200 | |

# Roll Allocation List

SINGLE SIDED GEOCOMPOSITE

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Resin Lot | Bottom | Manufacturing date | Length |
|---|---|---|---|---|---|
| 131576597 | FS1-200E-10-00-FA-0N | DKH610781 | 130518960 | 10/17/2019 | 288.00 |
| 131576601 | FS1-200E-10-00-FA-0N | DKH610781 | 130518960 | 10/18/2019 | 288.00 |
| 131576610 | FS1-200E-10-00-FA-0N | DKH610781 | 130518940 | 10/18/2019 | 288.00 |
| 131576611 | FS1-200E-10-00-FA-0N | DKH610781 | 130518940 | 10/18/2019 | 288.00 |
| 131576612 | FS1-200E-10-00-FA-0N | DKH610781 | 130518967 | 10/18/2019 | 288.00 |
| 131576613 | FS1-200E-10-00-FA-0N | DKH610781 | 130518967 | 10/18/2019 | 288.00 |
| 131576614 | FS1-200E-10-00-FA-0N | DKH610781 | 130518957 | 10/18/2019 | 288.00 |
| 131576615 | FS1-200E-10-00-FA-0N | DKH610781 | 130518957 | 10/18/2019 | 288.00 |
| 131576616 | FS1-200E-10-00-FA-0N | DKH610781 | 130518957 | 10/18/2019 | 288.00 |
| 131576618 | FS1-200E-10-00-FA-0N | DKH610781 | 130518957 | 10/18/2019 | 288.00 |
| 131576619 | FS1-200E-10-00-FA-0N | DKH610781 | 130518957 | 10/19/2019 | 288.00 |
| 131576621 | FS1-200E-10-00-FA-0N | DKH610781 | 130518959 | 10/19/2019 | 288.00 |
| 131576622 | FS1-200E-10-00-FA-0N | DKH610781 | 130518959 | 10/19/2019 | 288.00 |
| 131576623 | FS1-200E-10-00-FA-0N | DKH610781 | 130518941 | 10/19/2019 | 288.00 |
| 131576624 | FS1-200E-10-00-FA-0N | DKH610781 | 130518941 | 10/19/2019 | 288.00 |
| 131576625 | FS1-200E-10-00-FA-0N | DKH610781 | 130518941 | 10/19/2019 | 288.00 |
| 131576626 | FS1-200E-10-00-FA-0N | DKH610781 | 130518941 | 10/19/2019 | 288.00 |
| 131576627 | FS1-200E-10-00-FA-0N | DKH610781 | 130518941 | 10/19/2019 | 288.00 |
| 131576628 | FS1-200E-10-00-FA-0N | DKH610781 | 130518944 | 10/19/2019 | 288.00 |
| 131576629 | FS1-200E-10-00-FA-0N | DKH610781 | 130518944 | 10/19/2019 | 288.00 |
| 131576630 | FS1-200E-10-00-FA-0N | DKH610781 | 130518944 | 10/19/2019 | 288.00 |
| 131576631 | FS1-200E-10-00-FA-0N | DKH610781 | 130518944 | 10/19/2019 | 288.00 |
| 131576632 | FS1-200E-10-00-FA-0N | 19I1298 | 130518955 | 10/19/2019 | 288.00 |
| 131576633 | FS1-200E-10-00-FA-0N | 19I1298 | 130518955 | 10/19/2019 | 288.00 |
| 131576634 | FS1-200E-10-00-FA-0N | 19I1298 | 130518955 | 10/19/2019 | 288.00 |
| 131576635 | FS1-200E-10-00-FA-0N | 19I1298 | 130518955 | 10/19/2019 | 288.00 |
| 131576636 | FS1-200E-10-00-FA-0N | 19I1298 | 130518955 | 10/19/2019 | 288.00 |
| 131576637 | FS1-200E-10-00-FA-0N | 19I1298 | 130518948 | 10/19/2019 | 288.00 |
| 131576638 | FS1-200E-10-00-FA-0N | 19I1298 | 130518948 | 10/19/2019 | 288.00 |
| 131576639 | FS1-200E-10-00-FA-0N | 19I1298 | 130518948 | 10/19/2019 | 288.00 |
| 131576640 | FS1-200E-10-00-FA-0N | 19I1298 | 130518946 | 10/19/2019 | 288.00 |
| 131576641 | FS1-200E-10-00-FA-0N | 19I1298 | 130518946 | 10/19/2019 | 288.00 |
| 131576642 | FS1-200E-10-00-FA-0N | 19I1298 | 130518946 | 10/19/2019 | 288.00 |
| 131576643 | FS1-200E-10-00-FA-0N | 19I1298 | 130518946 | 10/19/2019 | 288.00 |
| 131576644 | FS1-200E-10-00-FA-0N | 19I1298 | 130518962 | 10/19/2019 | 288.00 |
| 131576645 | FS1-200E-10-00-FA-0N | 19I1298 | 130518962 | 10/19/2019 | 288.00 |
| 131576646 | FS1-200E-10-00-FA-0N | 19I1298 | 130518962 | 10/19/2019 | 288.00 |
| 131576647 | FS1-200E-10-00-FA-0N | 19I1298 | 130518962 | 10/19/2019 | 288.00 |
| 131576648 | FS1-200E-10-00-FA-0N | 19I1298 | 130518932 | 10/19/2019 | 288.00 |
| 131576649 | FS1-200E-10-00-FA-0N | 19I1298 | 130518932 | 10/19/2019 | 288.00 |
| 131576650 | FS1-200E-10-00-FA-0N | 19I1298 | 130518932 | 10/19/2019 | 288.00 |
| 131576651 | FS1-200E-10-00-FA-0N | 19I1298 | 130518932 | 10/19/2019 | 288.00 |
| 131576652 | FS1-200E-10-00-FA-0N | 19I1298 | 130518961 | 10/19/2019 | 288.00 |
| 131576653 | FS1-200E-10-00-FA-0N | 19I1298 | 130518961 | 10/19/2019 | 288.00 |
| 131576654 | FS1-200E-10-00-FA-0N | 19I1298 | 130518961 | 10/19/2019 | 288.00 |
| 131576655 | FS1-200E-10-00-FA-0N | 19I1298 | 130518961 | 10/19/2019 | 288.00 |
| 131576656 | FS1-200E-10-00-FA-0N | 19I1298 | 130518963 | 10/19/2019 | 288.00 |
| 131576657 | FS1-200E-10-00-FA-0N | 19I1298 | 130518963 | 10/19/2019 | 288.00 |
| 131576658 | FS1-200E-10-00-FA-0N | 19I1298 | 130518963 | 10/19/2019 | 288.00 |
| 131576659 | FS1-200E-10-00-FA-0N | 19I1298 | 130518963 | 10/19/2019 | 288.00 |
| 131576660 | FS1-200E-10-00-FA-0N | 19I1298 | 130518964 | 10/19/2019 | 288.00 |
| 131576661 | FS1-200E-10-00-FA-0N | 19I1298 | 130518964 | 10/19/2019 | 288.00 |
| 131576662 | FS1-200E-10-00-FA-0N | 19I1298 | 130518964 | 10/19/2019 | 288.00 |
| 131576663 | FS1-200E-10-00-FA-0N | 19I1298 | 130518964 | 10/19/2019 | 288.00 |
| 131576664 | FS1-200E-10-00-FA-0N | 19I1298 | 130518949 | 10/19/2019 | 288.00 |
| 131576665 | FS1-200E-10-00-FA-0N | 19I1298 | 130518949 | 10/19/2019 | 288.00 |
| 131576666 | FS1-200E-10-00-FA-0N | 19I1298 | 130518949 | 10/19/2019 | 288.00 |
| 131576667 | FS1-200E-10-00-FA-0N | 19I1298 | 130518949 | 10/19/2019 | 288.00 |
| 131576668 | FS1-200E-10-00-FA-0N | 19I1298 | 130518968 | 10/19/2019 | 288.00 |
| 131576669 | FS1-200E-10-00-FA-0N | 19I1298 | 130518968 | 10/19/2019 | 288.00 |
| 131576670 | FS1-200E-10-00-FA-0N | 19I1298 | 130518968 | 10/19/2019 | 288.00 |
| 131576671 | FS1-200E-10-00-FA-0N | 19I1298 | 130518968 | 10/20/2019 | 288.00 |
| 131576672 | FS1-200E-10-00-FA-0N | 19I1298 | 130518958 | 10/20/2019 | 288.00 |
| 131576673 | FS1-200E-10-00-FA-0N | 19I1298 | 130518958 | 10/20/2019 | 288.00 |
| 131576674 | FS1-200E-10-00-FA-0N | 19I1298 | 130518958 | 10/20/2019 | 288.00 |
| 131576675 | FS1-200E-10-00-FA-0N | 19I1298 | 130518958 | 10/20/2019 | 288.00 |
| 131576676 | FS1-200E-10-00-FA-0N | 19I1298 | 130518930 | 10/20/2019 | 288.00 |
| 131576677 | FS1-200E-10-00-FA-0N | 19I1298 | 130518930 | 10/20/2019 | 288.00 |

# Roll Allocation List

Sales Order SO-088056
Customer Name Mustang Extreme Environmental Services LLC
Project Name MUSTANG / OWL LANNDFILL

| Serial number | Item Number | Resin Lot | Bottom | Manufacturing date | Length |
|---|---|---|---|---|---|
| 131576678 | FS1-200E-10-00-FA-0N | 19I1298 | 130518930 | 10/20/2019 | 288.00 |
| 131576679 | FS1-200E-10-00-FA-0N | 19I1298 | 130518930 | 10/20/2019 | 288.00 |
| 131576680 | FS1-200E-10-00-FA-0N | 19I1298 | 130518947 | 10/20/2019 | 288.00 |
| 131576681 | FS1-200E-10-00-FA-0N | 19I1298 | 130518947 | 10/20/2019 | 288.00 |
| 131576682 | FS1-200E-10-00-FA-0N | 19I1298 | 130518947 | 10/20/2019 | 288.00 |
| 131576683 | FS1-200E-10-00-FA-0N | 19I1298 | 130518947 | 10/20/2019 | 288.00 |
| 131576684 | FS1-200E-10-00-FA-0N | 19I1298 | 130518954 | 10/20/2019 | 288.00 |
| 131576685 | FS1-200E-10-00-FA-0N | 19I1298 | 130518954 | 10/20/2019 | 288.00 |
| 131576686 | FS1-200E-10-00-FA-0N | 19I1298 | 130518954 | 10/20/2019 | 288.00 |
| 131576687 | FS1-200E-10-00-FA-0N | 19I1298 | 130518954 | 10/20/2019 | 288.00 |
| 131576688 | FS1-200E-10-00-FA-0N | 19I1298 | 130518954 | 10/20/2019 | 288.00 |
| 131576805 | FS1-200E-10-00-FA-0N | 19I1298 | 130518945 | 10/21/2019 | 288.00 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS1-200E-10-00-FA-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|
| 131576597 | 223 | 94 | 0.962 | 2.5 | 2.8 | 0.201 |
| 131576601 | 222 | 85 | 0.957 | 2.6 | 3.4 | 0.182 |
| 131576610 | 242 | 80 | 0.967 | 2.7 | 4.8 | 0.197 |
| 131576611 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576612 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576613 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576614 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576615 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576616 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576618 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576619 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576621 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576622 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576623 | 232 | 76 | 0.966 | 2.6 | 3.4 | 0.184 |
| 131576624 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576625 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576626 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576627 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576628 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576629 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576630 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576631 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576632 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576633 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576634 | 225 | 70 | 0.957 | 2.5 | 2.6 | 0.190 |
| 131576635 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576636 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576637 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576638 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576639 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576640 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576641 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576642 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576643 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS1-200E-10-00-FA-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|
| 131576644 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576645 | 221 | 68 | 0.959 | 2.5 | 2.3 | 0.166 |
| 131576646 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576647 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576648 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576649 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576650 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576651 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576652 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576653 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576654 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576655 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576656 | 223 | 73 | 0.958 | 2.5 | 3.2 | 0.178 |
| 131576657 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576658 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576659 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576660 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576661 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576662 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576663 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576664 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576665 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576666 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576667 | 223 | 70 | 0.958 | 2.5 | 3.7 | 0.178 |
| 131576668 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576669 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576670 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576671 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576672 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576673 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576674 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576675 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576676 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576677 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |

GSE Environmental, LLC

# ROLL TEST DATA REPORT

GSE QC APPROVED

**Report Date:** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal NM US | FS1-200E-10-00-FA-0N | |

| Roll Number | Geonet Thickness ASTM D5199 (mils) | Tensile Strength ASTM D7179 (ppi) | Density ASTM D1505 (g/cc) | Carbon Black Content ASTM D4218 (%) | Ply Adhesion Average ASTM D7005 (ppi) Side A | Geonet Mass per Unit Area ASTM D5261 (lbs/ft²) |
|---|---|---|---|---|---|---|
| 131576678 | 224 | 72 | 0.962 | 2.7 | 1.6 | 0.170 |
| 131576679 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576680 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576681 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576682 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576683 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576684 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576685 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576686 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576687 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576688 | 217 | 65 | 0.964 | 2.6 | 4.7 | 0.162 |
| 131576805 | 211 | 81 | 0.959 | 2.6 | 3.5 | 0.165 |

**Laboratory Manager**

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GSE Environmental, LLC

# ROLL TEST DATA REPORT



**Report Date :** Oct/22/2019

| Sales Order No. | Customer Name | Project Location | Product Name | BOL Number |
|---|---|---|---|---|
| SO-088056 | Mustang Extreme Environmental Services LLC | Jal , NM US | FBR-100E-EBN-E-00 | |

| Roll Number | Mass per Unit Area ASTM D5261 (oz/yd²) | ASTM D4491 Water Flow Rate (gpm/ft²) | ASTM D4491 Permittivity (sec-1) | ASTM D4751 AOS (mm) | ASTM D4632 Grab Strength (lbs) MD | ASTM D4632 Grab Strength (lbs) TD | ASTM D4632 Grab Elongation (%) MD | ASTM D4632 Grab Elongation (%) TD | ASTM D4533 Trapezoidal Tear (lbs) MD | ASTM D4533 Trapezoidal Tear (lbs) TD | Puncture Resistance ASTM D4833 (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 130518930 | 10.8 | 101 | 1.30 | 0.150 | 307 | 379 | 82 | 107 | 288 | 371 | 217 |
| 130518932 | 11.6 | 99 | 1.30 | 0.150 | 307 | 369 | 81 | 111 | 286 | 369 | 211 |
| 130518940 | 10.9 | 102 | 1.40 | 0.150 | 295 | 408 | 81 | 107 | 289 | 371 | 213 |
| 130518941 | 10.2 | 93 | 1.20 | 0.150 | 276 | 348 | 70 | 108 | 293 | 354 | 203 |
| 130518944 | 10.2 | 93 | 1.20 | 0.150 | 276 | 348 | 70 | 108 | 293 | 354 | 203 |
| 130518945 | 10.2 | 93 | 1.20 | 0.150 | 276 | 348 | 70 | 108 | 293 | 354 | 203 |
| 130518946 | 10.6 | 95 | 1.30 | 0.150 | 321 | 346 | 85 | 103 | 269 | 372 | 193 |
| 130518947 | 10.6 | 95 | 1.30 | 0.150 | 321 | 346 | 85 | 103 | 269 | 372 | 193 |
| 130518948 | 10.6 | 95 | 1.30 | 0.150 | 321 | 346 | 85 | 103 | 269 | 372 | 193 |
| 130518949 | 10.6 | 95 | 1.30 | 0.150 | 321 | 346 | 85 | 103 | 269 | 372 | 193 |
| 130518954 | 10.7 | 104 | 1.40 | 0.150 | 309 | 344 | 82 | 84 | 187 | 248 | 184 |
| 130518955 | 10.7 | 104 | 1.40 | 0.150 | 309 | 344 | 82 | 84 | 187 | 248 | 184 |
| 130518957 | 11.0 | 105 | 1.40 | 0.150 | 321 | 373 | 80 | 99 | 194 | 212 | 192 |
| 130518958 | 11.0 | 105 | 1.40 | 0.150 | 321 | 373 | 80 | 99 | 194 | 212 | 192 |
| 130518959 | 11.0 | 105 | 1.40 | 0.150 | 321 | 373 | 80 | 99 | 194 | 212 | 192 |
| 130518960 | 11.0 | 105 | 1.40 | 0.150 | 321 | 373 | 80 | 99 | 194 | 212 | 192 |
| 130518961 | 10.5 | 104 | 1.40 | 0.150 | 295 | 358 | 81 | 91 | 178 | 262 | 181 |
| 130518962 | 10.5 | 104 | 1.40 | 0.150 | 295 | 358 | 81 | 91 | 178 | 262 | 181 |
| 130518963 | 10.5 | 104 | 1.40 | 0.150 | 295 | 358 | 81 | 91 | 178 | 262 | 181 |
| 130518964 | 10.5 | 104 | 1.40 | 0.150 | 295 | 358 | 81 | 91 | 178 | 262 | 181 |
| 130518967 | 10.7 | 105 | 1.40 | 0.150 | 310 | 386 | 86 | 109 | 180 | 269 | 204 |
| 130518968 | 10.7 | 105 | 1.40 | 0.150 | 310 | 386 | 86 | 109 | 180 | 269 | 204 |

**Laboratory Manager** _____

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Formosa Plastics

FORMOSA PLASTICS CORPORATION, TEXAS
201 FORMOSA DRIVE
PO BOX 700
POINT COMFORT TX 77978
PHONE:( 888 )FPCUSA3

# Certificate of Analysis

(CONFIDENTIAL)

CUSTOMER:GSE ENVIRONMENTAL, LLC
1245 EASTLAND AVE
KINGSTREE SC 29556
PRODUCT :HB5502B
RAILCAR FPAX140035
CLEANING/INSPECTION NO: 140035092519

S/O NO : EU9B038
CUSTOMER PO : 03-517037
DATE SHIPPED: 9/30/19
LOT NO : 19I1298
WEIGHT (LB) : 198,250.00
CUSTID:FT03112 SPIDE3

| TEST ITEM | REFERENCE METHOD | TEST VALUE |
|---|---|---|
| Melt Index,g/10min | ASTM D1238 | .36 |
| Density, g/cm3 | ASTM D1505 | .9538 |

Linda Kao

QC SUPERVISOR: LINDA KAO

CoA Date: 08/30/2019

# Certificate of Analysis

Shipped To: GSE ENVIRONMENTAL, LLC:KINGSTREE
1245 EASTLAND AVE
KINGSTREE SC 29556
USA

Recipient: Green
Fax:

Delivery #: 80032932
PO #: 03-516881
Weight: 201300.000 LB
Ship Date: 08/30/2019
Package: BULK
Mode: Hopper Car
Car #: HLTX007468
Seal No: 159721

Product:
MARLEX HHM 5502BN POLYETHYLENE in Bulk

Lot Number: DKH610781

| Property | Test Method | Value | Unit |
|---|---|---|---|
| Melt Index | ASTM D1238 | 0.34 | g/10min |
| Density | D1505 | 0.9544 | g/cm3 |

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
**However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

T. KEVIN AYRES
QUALITY ASSURANCE SUPERINTENDENT

For CoA questions contact Melissa Alexander at +-832-813-4244

Report Date
10/22/2019

# Quality Assurance Laboratory Test Results

**Job Name:** MUSTANG /OWL LANNDFILL
**Sales Order:** 88056

**Required Testing:** ASTM D 1238, 190 / 2.16 -- Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

**Frequency:** 1/50,000 sf

**Specification:** ≤ 1.0 g/10 minutes

| Product Code | Roll Number | Result |
|---|---|---|
| FS1-200E-10-00-FA-0N | 131576597 | 0.30 |
| FS1-200E-10-00-FA-0N | 131576601 | 0.30 |
| FS1-200E-10-00-FA-0N | 131576610 | 0.31 |
| FS1-200E-10-00-FA-0N | 131576623 | 0.29 |
| FS1-200E-10-00-FA-0N | 131576634 | 0.30 |
| FS1-200E-10-00-FA-0N | 131576645 | 0.32 |
| FS1-200E-10-00-FA-0N | 131576656 | 0.29 |
| FS1-200E-10-00-FA-0N | 131576667 | 0.30 |
| FS1-200E-10-00-FA-0N | 131576678 | 0.30 |
| FS1-200E-10-00-FA-0N | 131576688 | 0.29 |
| FS1-200E-10-00-FA-0N | 131576805 | 0.31 |

Approved by: Barbara McCrea
Date: October 22, 2019

*The above stated data shall not be reproduced except in full, without the written approval of the laboratory.*

1245 Eastland Avenue
Kingstree, SC 29556
Phone 843-382-4603
Fax 843-382-4604

Date: October 22, 2019

Project: # 88056

Ref: Ultraviolet (UV) Resistance

To Whom It May Concern:

The resistance of nonwoven needle punched geotextiles to ultraviolet light depends primarily on antioxident and carbon black package mixed with resin to prepare a formulation for fiber extrusion. As long as this formulation remains the same the UV resistance of a geotextiles does not change. Therefore, UV testing is performed only once per resin formulation, according to ASTM Test Method D4355 and results are included on Solmax geotextile specification sheet. Currently, all Solmax geotextiles meet or exceed a value of 70% strength retained after 500 hours of UV exposure. Solmax will meet or exceed this value for the referenced project.

Although Solmax geotextiles are manufactured using one of the best available antioxident packages, we recommend covering the geotextiles within 30 days of exposure to direct Sunlight. This period does not include time during which geotextiles rolls remain on site covered in black shrink-wrap. Our recommendation is based on UV performance data published in technical literature indicating geotextile strength can decrease sharply after prolonged exposure to Sunlight.



Thomas E. Harrelson
Lab Manager

SOLMAX GSE Environmental, LLC.

# *Transmissivity Report*

## *ASTM D4716*

***Roll No.*** *131576597*

### *ROLL IDENTIFICATION*

| | |
|---|---|
| ***Roll Number*** | 131576597 |
| ***Product Name*** | FS1-200E-10-00-FA-0N |
| ***Production Date*** | 10/17/2019 |

### *CUSTOMER INFORMATION*

| | |
|---|---|
| ***Order Number*** | 88056 |
| ***Customer Name*** | Mustang Extreme Environmental Services, LLC |
| ***Project Name*** | MUSTANG / OWL LANNDFILL |
| ***Location*** | JAL NM |

| *Pressure (psf)* | *Gradient* | *Net/Composite* | *Transmissivity Results* ($m^2/sec$) | *(gal/min/ft)* | *Seat Time (min)* | *Boundary* |
|---|---|---|---|---|---|---|
| 10,000 | 0.10 | Composite | 1.57E-03 | 7.58 | 15 | SS Plates |
| 10,000 | 0.10 | Net | 4.53E-03 | 21.88 | 15 | SS Plates |



GSE QC APPROVED

# CONFORMANCE LIST

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI/AUSTIN
1/100,000 sf, min 1/lot. Geonet 2 ft x 2 ft coupons. Geotextile 3 ft x rw. Geocomposite 2 ft x 2 ft coupons.

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Sent |
|---|---|---|---|---|---|
| **131576597** | DKH610781 | FS1-200E-10-00-FA-0N | 10/17/2019 | 288 | 10/22 |
| 131576601 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576610 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576611 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576612 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576613 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576614 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576615 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576616 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576618 | DKH610781 | FS1-200E-10-00-FA-0N | 10/18/2019 | 288 | |
| 131576619 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576621 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576622 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576623 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576624 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576625 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576626 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576627 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576628 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576629 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576630 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576631 | DKH610781 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| **131576632** | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | 10/22 |
| 131576633 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576634 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576635 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576636 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576637 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576638 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576639 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576640 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576641 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576642 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576643 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576644 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576645 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576646 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576647 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576648 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576649 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576650 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576651 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576652 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576653 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| **131576654** | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | 10/22 |
| 131576655 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576656 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576657 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576658 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |

# CONFORMANCE LIST

**Order** SO-088056
**Customer** Mustang Extreme Environmental Services LLC
**Project Name** OWL LANNDFILL

TRI/AUSTIN
1/100,000 sf, min 1/lot. Geonet 2 ft x 2 ft coupons. Geotextile 3 ft x rw. Geocomposite 2 ft x 2 ft coupons.

| Roll# | Resin Lot | Product Code | Mfg Date | Length | Sent |
|---|---|---|---|---|---|
| 131576659 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576660 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576661 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576662 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576663 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576664 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576665 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576666 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576667 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576668 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576669 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576670 | 19I1298 | FS1-200E-10-00-FA-0N | 10/19/2019 | 288 | |
| 131576671 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576672 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576673 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576674 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576675 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| **131576676** | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | 10/22 |
| 131576677 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576678 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576679 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576680 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576681 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576682 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576683 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576684 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576685 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576686 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576687 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576688 | 19I1298 | FS1-200E-10-00-FA-0N | 10/20/2019 | 288 | |
| 131576805 | 19I1298 | FS1-200E-10-00-FA-0N | 10/21/2019 | 288 | |

# APPENDIX B

## Material Manufacturer Certification and Conformance Testing Results

B.8. Geocomposite Conformance Testing Results

November 5, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road, Suite 200
P1004
Ft. Worth, TX 76109.

email: sroeder@mustangenergyservices.com

**Bill To:**

**<= Same (P.O. # 301445)**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51755 |
| Material(s) Tested: | Four, Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite(s) |
| Test(s) Requested: | Transmissivity (ASTM D 4716) - GC<br>Peel Strength (ASTM D 7005) - GC<br>Transmissivity (ASTM D 4716) - GN<br>Thickness (ASTM D 5199) - GN<br>Mass/Unit Area (ASTM D 3776, Option C) - GN<br>Carbon Black Content (ASTM D 1603, mod.) - GN<br>Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)<br>Tensile Properties (ASTM D 7179) - GN<br>Mass/Unit Area (ASTM D 5261) - GT<br>Grab Tensile (ASTM D 4632) - GT<br>Puncture Strength (ASTM D 4833) - GT<br>Trapezoidal Tear (ASTM D 4533) - GT<br>Apparent Opening Size (ASTM D 4751, Method B) - GT<br>Permittivity (ASTM D 4491) - GT |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file

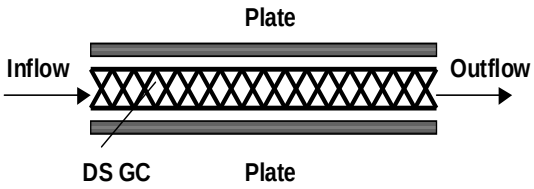


The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576690**
**TRI Log #: 51755**

| PARAMETER | | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Hydraulic Transmissivity (ASTM D 4716)** | | | | | | | | | | | | | |
| Direction Tested: Machine Direction | | | | | | | | | | | | | |
| Normal Load (psf): | 10,000 | | | | | | | | | | | | |
| Hydraulic Gradient: | 0.1 | | | | | | | | | | | | |
| Test Length (in) | 12 | | | | | | | | | | | | |
| Test Width (in) | 12 | | | | | | | | | | | | |
| Plate / Sample / Plate | | | | | | | | | | | | | |
| Seat Time (hours) | | Specimen | | 1 | | | 2 | | | | | | |
| | Volume (cc) | | 565 | 567 | 565 | 588 | 578 | 573 | | | | | |
| | Time (s) | | 15.45 | 15.47 | 15.48 | 25.53 | 25.47 | 25.43 | | | | | |
| 0.25 | Flow Rate (GPM/ft width) | | 0.58 | 0.58 | 0.58 | 0.37 | 0.36 | 0.36 | | | | **0.47** | 0.12 |
| | Transmissivity (m^2/s) | | 1.21E-03 | 1.21E-03 | 1.20E-03 | 7.56E-04 | 7.46E-04 | 7.41E-04 | | | | **9.76E-04** | 2.50E-04 |
| | Test Temp (C) | | | 20.0 | | | 20.1 | | | | | | |
| | Temp. Corr. Factor | | | 1.004 | | | 1.001 | | | | | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | | |
| A - MD Average Peel Strength (ppi) | | 6.34 | 4.00 | 4.84 | 3.36 | 3.64 | | | | | | **4.44** | 1.20 |
| A - MD Average Peel Strength (g/in) | | 2878 | 1816 | 2197 | 1525 | 1653 | | | | | | **2014** | 545 |
| B - MD Average Peel Strength (ppi) | | 4.70 | 4.39 | 4.60 | 3.16 | 2.86 | | | | | | **3.94** | 0.86 |
| B - MD Average Peel Strength (g/in) | | 2134 | 1993 | 2088 | 1435 | 1298 | | | | | | **1790** | 393 |




Note: A and B represent a randomly assigned top and bottom of the sample

MD Machine Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576690**
**TRI Log #: 51755**

**Hydraulic Transmissivity (ASTM D 4716)** — GEONET COMPONENT

Direction Tested: Machine Direction
Normal Load (psf): 10,000
Hydraulic Gradient: 0.1
Test Length (in) 12
Test Width (in) 12

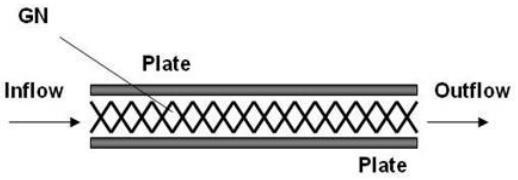



Plate / Sample / Plate

| Seat Time (hours) | PARAMETER | Specimen | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TEST REPLICATE NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| | Volume (cc) | | | 992 | 978 | 980 | 995 | 995 | 993 | | | | | |
| | Time (s) | | | 5.56 | 5.41 | 5.53 | 5.53 | 5.50 | 5.46 | | | | | |
| 0.25 | Flow Rate (GPM/ft width) | | | 2.88 | 2.92 | 2.87 | 2.90 | 2.92 | 2.93 | | | | **2.90** | 0.03 |
| | Transmissivity (m^2/s) | | | 5.97E-03 | 6.05E-03 | 5.93E-03 | 6.01E-03 | 6.04E-03 | 6.07E-03 | | | | **6.01E-03** | 5.33E-05 |
| | Test Temp (C) | | | | 19.3 | | | 19.4 | | | | | | |
| | Temp. Corr. Factor | | | | 1.020 | | | 1.017 | | | | | | |

**Thickness (ASTM D 5199)** — GEONET COMPONENT

| PARAMETER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Thickness (mils) | 248.0 | 235.8 | 228.6 | 233.3 | 227.4 | 219.1 | 233.6 | 224.5 | 215.0 | 222.4 | **228.8** | 9.5 |
| | | | | | | | | | | | **215.0** | << min |

**Mass/Unit Area (ASTM D 3776, Option C)** — GEONET COMPONENT

| PARAMETER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5" diameter Circle - Mass (g) | 12.43 | 10.88 | 11.45 | 12.10 | 11.07 | 11.20 | 11.55 | 11.33 | 12.02 | 11.82 | | |
| Mass/unit area (lbs./sq.ft) | 0.12 | 0.11 | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 | 0.12 | **0.11** | 0.00 |

**Carbon Black Content (ASTM D 1603, mod.)** — GEONET COMPONENT

| PARAMETER | 1 | 2 | MEAN | STD. DEV. |
|---|---|---|---|---|
| % Carbon Black | 2.40 | 2.39 | **2.40** | 0.01 |

**Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** — GEONET COMPONENT

| PARAMETER | 1 | 2 | MEAN |
|---|---|---|---|
| Melt Flow Index (g/10 min) | 0.41 | 0.42 | **0.41** |

**Tensile Properties (ASTM D 7179, 12 ipm strain rate)** — GEONET COMPONENT

| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|
| MD Max. Strength (ppi) | 78 | 73 | 77 | 86 | 74 | **78** | 5 |
| MD Elong. @ Max. Strength (%) | 26 | 25 | 27 | 25 | 26 | **25** | 1 |

MD Machine Direction TD Transverse Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576690**
**TRI Log #: 51755**

GEOTEXTILE - SIDE A

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.16 | 5.00 | 4.25 | 4.58 | 5.82 | 4.62 | 4.67 | 4.27 | 3.93 | 5.32 | **4.66** | 0.58 |
| Mass/Unit Area (oz/sq.yd) | 9.68 | 11.63 | 9.89 | 10.65 | 13.54 | 10.75 | 10.86 | 9.93 | 9.14 | 12.37 | **10.84** | 1.34 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 433 | 381 | 391 | 370 | 415 | 364 | 361 | 363 | 487 | 454 | **402** | 44 |
| TD - Tensile Strength (lbs) | 303 | 311 | 293 | 359 | 375 | 318 | 307 | 282 | 379 | 429 | **336** | 47 |
| MD - Elong. @ Max. Load (%) | 95 | 99 | 92 | 89 | 101 | 105 | 105 | 87 | 106 | 99 | **98** | 7 |
| TD - Elong. @ Max. Load (%) | 87 | 83 | 83 | 97 | 76 | 65 | 87 | 79 | 83 | 87 | **83** | 8 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 182 | 189 | 169 | 199 | 205 | | | | | | **189** | 14 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 129 | 132 | 101 | 107 | 148 | 137 | 131 | 116 | 118 | 135 | **126** | 15 |
| TD - Tear Strength (lbs) | 209 | 194 | 169 | 176 | 179 | 236 | 136 | 159 | 153 | 152 | **176** | 30 |
| **Apparent Opening Size (ASTM D 4751, Method B)** | | | | | | | | | | | | |
| Opening Size Diameter (mm) | 0.128 | 0.146 | 0.128 | 0.142 | 0.146 | | | | | | **0.138** | 0.009 |
| Sieve No. | 100 | 100 | 100 | 100 | 100 | | | | | | **100** | |
| **Permittivity (ASTM D 4491,Method C)** | | | | | | | | | | | | |
| Thickness ( mil) | 141 | 132 | 158 | 129 | 128 | 107 | 112 | 135 | 132 | 156 | **133** | 16 |
| Thickness ( mm) | 3.58 | 3.35 | 4.01 | 3.28 | 3.25 | 2.72 | 2.84 | 3.43 | 3.35 | 3.96 | **3.38** | 0.41 |
| Permittivity (Sec-1) | 0.87 | 1.16 | 0.72 | 1.02 | 1.22 | 1.41 | 1.23 | 0.97 | 1.00 | 0.83 | **1.04** | 0.21 |
| Permittivity (GPM/ft2) | 65.1 | 86.8 | 53.9 | 76.3 | 91.3 | 105.5 | 92.0 | 72.6 | 74.8 | 62.1 | **78.0** | 15.8 |
| Flow rate (LPM/m2) | 2652 | 3535 | 2194 | 3109 | 3718 | 4297 | 3749 | 2956 | 3048 | 2530 | **3179** | 644 |
| Permittivity (cm/sec) | 0.312 | 0.389 | 0.289 | 0.334 | 0.397 | 0.383 | 0.350 | 0.333 | 0.335 | 0.329 | **0.345** | 0.035 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576690**
**TRI Log #: 51755**

GEOTEXTILE - SIDE B

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.94 | 4.73 | 4.26 | 4.11 | 5.04 | 6.22 | 5.56 | 4.85 | 4.87 | 4.42 | **4.90** | 0.62 |
| Mass/Unit Area (oz/sq.yd) | 11.49 | 11.00 | 9.91 | 9.56 | 11.72 | 14.47 | 12.93 | 11.28 | 11.33 | 10.28 | **11.40** | 1.45 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 369 | 414 | 359 | 345 | 333 | 400 | 308 | 275 | 305 | 369 | **348** | 44 |
| TD - Tensile Strength (lbs) | 442 | 473 | 441 | 438 | 374 | 388 | 308 | 383 | 421 | 389 | **406** | 47 |
| MD - Elong. @ Max. Load (%) | 81 | 89 | 88 | 88 | 91 | 77 | 91 | 90 | 76 | 89 | **86** | 6 |
| TD - Elong. @ Max. Load (%) | 95 | 97 | 97 | 97 | 107 | 98 | 98 | 97 | 94 | 94 | **97** | 4 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 251 | 210 | 173 | 144 | 192 | | | | | | **194** | 40 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 132 | 154 | 109 | 130 | 150 | 174 | 128 | 123 | 139 | 178 | **142** | 22 |
| TD - Tear Strength (lbs) | 149 | 205 | 196 | 220 | 173 | 162 | 167 | 137 | 176 | 165 | **175** | 25 |
| **Apparent Opening Size (ASTM D 4751, Method B)** | | | | | | | | | | | | |
| Opening Size Diameter (mm) | 0.132 | 0.135 | 0.132 | 0.134 | 0.135 | | | | | | **0.134** | 0.002 |
| Sieve No. | 100 | 100 | 100 | 100 | 100 | | | | | | **100** | |
| **Permittivity (ASTM D 4491,Method C)** | | | | | | | | | | | | |
| Thickness ( mil) | 154 | 144 | 131 | 129 | 128 | 145 | 113 | 135 | 135 | 134 | **135** | 11 |
| Thickness ( mm) | 3.91 | 3.66 | 3.33 | 3.28 | 3.25 | 3.68 | 2.87 | 3.43 | 3.43 | 3.40 | **3.42** | 0.28 |
| Permittivity (Sec-1) | 0.87 | 0.97 | 0.87 | 0.96 | 1.14 | 0.89 | 1.50 | 0.95 | 1.00 | 0.92 | **1.01** | 0.19 |
| Permittivity (GPM/ft2) | 65.1 | 72.6 | 65.1 | 71.8 | 85.3 | 66.6 | 112.2 | 71.1 | 74.8 | 68.8 | **75.3** | 14.2 |
| Flow rate (LPM/m2) | 2652 | 2956 | 2652 | 2926 | 3474 | 2712 | 4572 | 2895 | 3048 | 2804 | **3069** | 580 |
| Permittivity (cm/sec) | 0.340 | 0.355 | 0.289 | 0.315 | 0.371 | 0.328 | 0.431 | 0.326 | 0.343 | 0.313 | **0.341** | 0.039 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576723**
**TRI Log #: 51755**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | |
| A - MD Average Peel Strength (ppi) | 3.21 | 0.78 | 1.89 | 2.94 | 2.19 | | | | | | **2.20** | 0.96 |
| A - MD Average Peel Strength (g/in) | 1457 | 354 | 858 | 1335 | 994 | | | | | | **1000** | 436 |
| B - MD Average Peel Strength (ppi) | 3.96 | 2.80 | 3.73 | 3.57 | 2.68 | | | | | | **3.35** | 0.57 |
| B - MD Average Peel Strength (g/in) | 1798 | 1271 | 1693 | 1621 | 1217 | | | | | | **1520** | 260 |
| Note: A and B represent a randomly assigned top and bottom of the sample | | | | | | | | | | | | |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 229.5 | 228.0 | 220.5 | 208.8 | 214.2 | 214.7 | 226.6 | 219.5 | 227.5 | 223.1 | **221.2** | 7.0 |
| | | | | | | | | | | | **208.8** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 11.96 | 11.00 | 11.69 | 11.91 | 11.52 | 11.33 | 11.07 | 11.15 | 11.14 | 11.34 | | |
| Mass/unit area (lbs./sq.ft) | 0.12 | 0.11 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | **0.11** | 0.00 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.47 | 2.46 | | | | | | | | | **2.47** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.40 | 0.42 | | | | | | | | | **0.41** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 89 | 81 | 76 | 71 | 75 | | | | | | **78** | 7 |
| MD Elong. @ Max. Strength (%) | 23 | 22 | 23 | 24 | 26 | | | | | | **24** | 2 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576723**
**TRI Log #: 51755**

GEOTEXTILE - SIDE A

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 5.00 | 4.71 | 4.96 | 5.18 | 5.59 | 4.67 | 5.08 | 4.61 | 5.43 | 5.46 | **5.07** | 0.35 |
| Mass/Unit Area (oz/sq.yd) | 11.63 | 10.96 | 11.54 | 12.05 | 13.00 | 10.86 | 11.82 | 10.72 | 12.63 | 12.70 | **11.79** | 0.81 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 437 | 480 | 404 | 480 | 332 | 378 | 369 | 500 | 397 | 419 | **419** | 55 |
| TD - Tensile Strength (lbs) | 362 | 330 | 303 | 405 | 323 | 341 | 340 | 310 | 346 | 320 | **338** | 29 |
| MD - Elong. @ Max. Load (%) | 101 | 101 | 92 | 103 | 111 | 91 | 91 | 104 | 91 | 101 | **98** | 7 |
| TD - Elong. @ Max. Load (%) | 79 | 79 | 77 | 96 | 79 | 71 | 89 | 89 | 85 | 80 | **82** | 7 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 205 | 192 | 173 | 160 | 185 | | | | | | **183** | 17 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 152 | 134 | 106 | 138 | 156 | 175 | 189 | 115 | 121 | 135 | **142** | 26 |
| TD - Tear Strength (lbs) | 182 | 235 | 180 | 175 | 165 | 198 | 178 | 226 | 197 | 151 | **189** | 26 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576723**
**TRI Log #: 51755**

GEOTEXTILE - SIDE B

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.10 | 4.01 | 4.50 | 3.82 | 4.92 | 4.69 | 4.48 | 4.38 | 4.56 | 5.45 | **4.49** | 0.47 |
| Mass/Unit Area (oz/sq.yd) | 9.54 | 9.33 | 10.47 | 8.89 | 11.44 | 10.91 | 10.42 | 10.19 | 10.61 | 12.68 | **10.45** | 1.10 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 381 | 355 | 325 | 246 | 412 | 357 | 292 | 345 | 349 | 324 | **339** | 46 |
| TD - Tensile Strength (lbs) | 394 | 425 | 431 | 379 | 457 | 324 | 336 | 408 | 431 | 363 | **395** | 44 |
| MD - Elong. @ Max. Load (%) | 80 | 88 | 105 | 74 | 78 | 80 | 84 | 93 | 78 | 79 | **84** | 9 |
| TD - Elong. @ Max. Load (%) | 91 | 95 | 95 | 95 | 109 | 89 | 83 | 89 | 100 | 97 | **94** | 7 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 183 | 141 | 169 | 202 | 180 | | | | | | **175** | 22 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 129 | 112 | 134 | 145 | 148 | 154 | 137 | 137 | 137 | 130 | **136** | 12 |
| TD - Tear Strength (lbs) | 172 | 158 | 138 | 197 | 179 | 184 | 200 | 177 | 144 | 161 | **171** | 21 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576755**
**TRI Log #: 51755**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | |
| A - MD Average Peel Strength (ppi) | 3.70 | 2.37 | 2.28 | 2.05 | 4.88 | | | | | | **3.06** | 1.21 |
| A - MD Average Peel Strength (g/in) | 1680 | 1076 | 1035 | 931 | 2216 | | | | | | **1387** | 548 |
| B - MD Average Peel Strength (ppi) | 2.81 | 2.14 | 2.02 | 1.16 | 4.12 | | | | | | **2.45** | 1.10 |
| B - MD Average Peel Strength (g/in) | 1276 | 972 | 917 | 527 | 1870 | | | | | | **1112** | 501 |
| Note: A and B represent a randomly assigned top and bottom of the sample | | | | | | | | | | | | |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 211.9 | 214.3 | 219.4 | 224.4 | 231.7 | 231.7 | 228.0 | 226.0 | 230.8 | 221.9 | **224.0** | 7.1 |
| | | | | | | | | | | | **211.9** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 10.86 | 11.54 | 11.38 | 10.97 | 11.73 | 12.18 | 11.58 | 11.70 | 11.52 | 10.93 | | |
| Mass/unit area (lbs./sq.ft) | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 | 0.12 | 0.11 | 0.12 | 0.11 | 0.11 | **0.11** | 0.00 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.45 | 2.48 | | | | | | | | | **2.47** | 0.02 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.40 | 0.42 | | | | | | | | | **0.41** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 76 | 70 | 86 | 76 | 88 | | | | | | **79** | 8 |
| MD Elong. @ Max. Strength (%) | 25 | 24 | 27 | 24 | 27 | | | | | | **25** | 1 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576755**
**TRI Log #: 51755**

GEOTEXTILE - SIDE A

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.83 | 4.58 | 4.94 | 5.04 | 4.75 | 5.24 | 5.01 | 4.12 | 4.30 | 4.72 | **4.75** | 0.34 |
| Mass/Unit Area (oz/sq.yd) | 11.23 | 10.65 | 11.49 | 11.72 | 11.05 | 12.19 | 11.65 | 9.58 | 10.00 | 10.98 | **11.06** | 0.80 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 339 | 302 | 294 | 318 | 406 | 307 | 313 | 277 | 313 | 322 | **319** | 35 |
| TD - Tensile Strength (lbs) | 380 | 290 | 299 | 352 | 471 | 370 | 346 | 383 | 401 | 384 | **368** | 52 |
| MD - Elong. @ Max. Load (%) | 81 | 85 | 85 | 90 | 89 | 80 | 82 | 83 | 96 | 86 | **86** | 5 |
| TD - Elong. @ Max. Load (%) | 97 | 91 | 99 | 99 | 103 | 99 | 99 | 99 | 87 | 113 | **99** | 7 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 150 | 128 | 197 | 197 | 155 | | | | | | **165** | 31 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 129 | 114 | 121 | 113 | 141 | 115 | 113 | 99 | 125 | 143 | **121** | 14 |
| TD - Tear Strength (lbs) | 168 | 154 | 173 | 148 | 143 | 166 | 194 | 123 | 128 | 200 | **160** | 26 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576755**
**TRI Log #: 51755** GEOTEXTILE - SIDE B

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.98 | 5.16 | 4.45 | 4.45 | 5.10 | 5.31 | 5.08 | 4.82 | 4.52 | 4.68 | **4.86** | 0.32 |
| Mass/Unit Area (oz/sq.yd) | 11.58 | 12.00 | 10.35 | 10.35 | 11.86 | 12.35 | 11.82 | 11.21 | 10.51 | 10.89 | **11.29** | 0.73 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 328 | 334 | 260 | 366 | 425 | 406 | 298 | 347 | 276 | 343 | **338** | 52 |
| TD - Tensile Strength (lbs) | 380 | 372 | 506 | 478 | 405 | 375 | 523 | 456 | 353 | 414 | **426** | 60 |
| MD - Elong. @ Max. Load (%) | 76 | 81 | 114 | 94 | 78 | 81 | 81 | 89 | 68 | 76 | **84** | 13 |
| TD - Elong. @ Max. Load (%) | 98 | 94 | 99 | 97 | 101 | 97 | 101 | 109 | 84 | 101 | **98** | 6 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 161 | 146 | 177 | 173 | 197 | | | | | | **171** | 19 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 126 | 145 | 158 | 145 | 129 | 134 | 124 | 147 | 133 | 144 | **138** | 11 |
| TD - Tear Strength (lbs) | 150 | 191 | 157 | 191 | 166 | 163 | 164 | 151 | 202 | 201 | **173** | 21 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576787**
**TRI Log #: 51755**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | |
| A - MD Average Peel Strength (ppi) | 2.28 | 3.23 | 2.13 | 2.32 | 3.43 | | | | | | **2.68** | 0.60 |
| A - MD Average Peel Strength (g/in) | 1035 | 1466 | 967 | 1053 | 1557 | | | | | | **1216** | 274 |
| B - MD Average Peel Strength (ppi) | 5.62 | 2.43 | 2.65 | 3.50 | 3.62 | | | | | | **3.56** | 1.26 |
| B - MD Average Peel Strength (g/in) | 2551 | 1103 | 1203 | 1589 | 1643 | | | | | | **1618** | 572 |
| Note: A and B represent a randomly assigned top and bottom of the sample | | | | | | | | | | | | |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 238.9 | 228.6 | 219.8 | 221.1 | 232.4 | 216.8 | 223.2 | 226.8 | 222.6 | 226.4 | **225.7** | 6.5 |
| | | | | | | | | | | | **216.8** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 12.32 | 12.33 | 11.87 | 12.32 | 10.56 | 11.47 | 11.62 | 11.09 | 11.11 | 12.19 | | |
| Mass/unit area (lbs./sq.ft) | 0.12 | 0.12 | 0.12 | 0.12 | 0.10 | 0.11 | 0.12 | 0.11 | 0.11 | 0.12 | **0.12** | 0.01 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.40 | 2.39 | | | | | | | | | **2.40** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.40 | 0.41 | | | | | | | | | **0.40** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 75 | 67 | 71 | 85 | 95 | | | | | | **79** | 11 |
| MD Elong. @ Max. Strength (%) | 25 | 25 | 23 | 22 | 26 | | | | | | **24** | 2 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576787**
**TRI Log #: 51755**

GEOTEXTILE - SIDE A

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 5.39 | 5.73 | 4.38 | 3.91 | 4.89 | 4.73 | 4.40 | 4.14 | 4.52 | 4.85 | **4.69** | 0.55 |
| Mass/Unit Area (oz/sq.yd) | 12.54 | 13.33 | 10.19 | 9.09 | 11.37 | 11.00 | 10.23 | 9.63 | 10.51 | 11.28 | **10.92** | 1.29 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 346 | 372 | 359 | 327 | 335 | 434 | 299 | 263 | 312 | 375 | **342** | 47 |
| TD - Tensile Strength (lbs) | 394 | 375 | 399 | 306 | 416 | 461 | 326 | 402 | 445 | 411 | **393** | 48 |
| MD - Elong. @ Max. Load (%) | 89 | 87 | 93 | 93 | 93 | 84 | 95 | 90 | 83 | 92 | **90** | 4 |
| TD - Elong. @ Max. Load (%) | 91 | 96 | 95 | 89 | 108 | 99 | 93 | 100 | 96 | 100 | **97** | 5 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 194 | 166 | 130 | 164 | 167 | | | | | | **164** | 23 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 115 | 112 | 108 | 128 | 135 | 139 | 104 | 129 | 150 | 129 | **125** | 15 |
| TD - Tear Strength (lbs) | 205 | 164 | 171 | 225 | 182 | 183 | 193 | 142 | 184 | 205 | **185** | 23 |

MD Machine Direction TD Transverse Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS2-225E-10-10-E-00 Double Sided Geocomposite**
**Sample Identification: 131576787**
**TRI Log #: 51755**

GEOTEXTILE - SIDE B

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.58 | 5.07 | 4.60 | 5.05 | 4.32 | 4.82 | 4.31 | 4.38 | 4.38 | 5.58 | **4.71** | 0.42 |
| Mass/Unit Area (oz/sq.yd) | 10.65 | 11.79 | 10.70 | 11.75 | 10.05 | 11.21 | 10.03 | 10.19 | 10.19 | 12.98 | **10.95** | 0.97 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 307 | 307 | 259 | 318 | 329 | 378 | 309 | 255 | 357 | 353 | **317** | 40 |
| TD - Tensile Strength (lbs) | 462 | 381 | 358 | 338 | 417 | 441 | 449 | 422 | 439 | 385 | **409** | 42 |
| MD - Elong. @ Max. Load (%) | 84 | 75 | 73 | 87 | 84 | 79 | 96 | 108 | 87 | 85 | **86** | 10 |
| TD - Elong. @ Max. Load (%) | 97 | 96 | 93 | 101 | 111 | 101 | 106 | 95 | 95 | 107 | **100** | 6 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 186 | 144 | 163 | 151 | 222 | | | | | | **173** | 32 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 133 | 125 | 117 | 128 | 136 | 154 | 128 | 122 | 124 | 134 | **130** | 10 |
| TD - Tear Strength (lbs) | 194 | 158 | 159 | 199 | 174 | 187 | 212 | 158 | 174 | 157 | **177** | 20 |

MD Machine Direction TD Transverse Direction



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November 6, 2019

**Mail To:**

**Gregg Abney**
**Mustang Energy Services, Inc**
5049 Edwards Ranch Road, Suite 200
P1004
Ft. Worth, TX 76109.

email: gabney@mustangextreme.com

**Bill To:**

**<= Same (P.O. # 301445)**

Dear Mr. Abney:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs.
TRI is pleased to submit this final report of the laboratory testing for the sample(s) listed below.

| | |
|---|---|
| Project: | **OWL Landfill Services, LLC - Lea County New Mexico** |
| TRI Job Reference Number: | 51756 |
| Material(s) Tested: | Four, Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite(s) |
| Test(s) Requested: | Transmissivity (ASTM D 4716) - GC<br>Peel Strength (ASTM D 7005) - GC<br>Transmissivity (ASTM D 4716) - GN<br>Thickness (ASTM D 5199) - GN<br>Mass/Unit Area (ASTM D 3776, Option C) - GN<br>Carbon Black Content (ASTM D 1603, mod.) - GN<br>Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)<br>Tensile Properties (ASTM D 7179) - GN<br>Mass/Unit Area (ASTM D 5261) - GT<br>Grab Tensile (ASTM D 4632) - GT<br>Puncture Strength (ASTM D 4833) - GT<br>Trapezoidal Tear (ASTM D 4533) - GT<br>Apparent Opening Size (ASTM D 4751, Method B) - GT<br>Permittivity (ASTM D 4491) - GT |

If you have any questions or require any additional information, please call us at 1-800-880-8378

Sincerely,



Mansukh Patel
Laboratory Manager
Geosynthetic Services Division

*Signature is on file

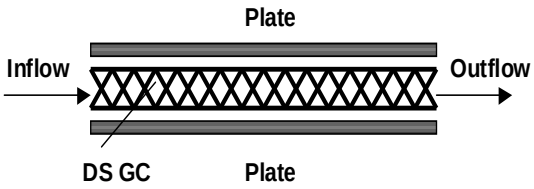


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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576597**
**TRI Log #: 51756**

| PARAMETER | | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Hydraulic Transmissivity (ASTM D 4716)** | | | | | | | | | | | | | |
| Direction Tested: Machine Direction | | | | | | | | | | | | | |
| Normal Load (psf): | 10,000 | | | | | | | | | | | | |
| Hydraulic Gradient: | 0.1 | | | | | | | | | | | | |
| Test Length (in) | 12 | | | | | | | | | | | | |
| Test Width (in) | 12 | | | | | | | | | | | | |
| Plate / Sample / Plate | | | | | | | | | | | | | |
| Seat Time (hours) | | Specimen | | 1 | | | 2 | | | | | | |
| | Volume (cc) | | 541 | 543 | 543 | 637 | 653 | 646 | | | | | |
| | Time (s) | | 10.36 | 10.46 | 10.47 | 10.40 | 10.58 | 10.49 | | | | | |
| 0.25 | Flow Rate (GPM/ft width) | | 0.81 | 0.81 | 0.81 | 0.95 | 0.96 | 0.95 | | | | **0.88** | 0.08 |
| | Transmissivity (m^2/s) | | 1.68E-03 | 1.67E-03 | 1.67E-03 | 1.97E-03 | 1.98E-03 | 1.98E-03 | | | | **1.82E-03** | 1.65E-04 |
| | Test Temp (C) | | | 21.0 | | | 21.1 | | | | | | |
| | Temp. Corr. Factor | | | 0.981 | | | 0.979 | | | | | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | | |
| MD Average Peel Strength (ppi) | | 2.94 | 1.53 | 1.74 | 3.99 | 4.31 | | | | | | **2.90** | 1.26 |
| MD Average Peel Strength (g/in) | | 1335 | 695 | 790 | 1811 | 1957 | | | | | | **1318** | 574 |




MD Machine Direction



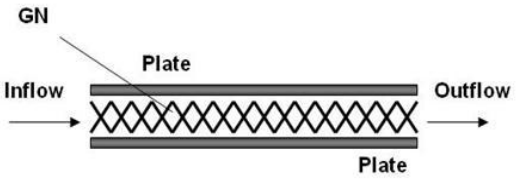
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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576597**
**TRI Log #: 51756**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Hydraulic Transmissivity (ASTM D 4716)** | | | | | GEONET COMPONENT | | | | | | | |
| Direction Tested: Machine Direction | | | | | | | | | | | | |
| Normal Load (psf): 10,000 | | | | | | | | | | | | |
| Hydraulic Gradient: 0.1 | | | | | | | | | | | | |
| Test Length (in) 12 | | | | | | | | | | | | |
| Test Width (in) 12 | | | | | | | | | | | | |
| Plate / Sample / Plate | | | | | | | | | | | | |
| Seat Time (hours) | Specimen | | 1 | | | 2 | | | | | | |
| Volume (cc) | | 958 | 957 | 956 | 951 | 933 | 954 | | | | | |
| Time (s) | | 5.53 | 5.53 | 5.58 | 5.55 | 5.44 | 5.58 | | | | | |
| 0.25 Flow Rate (GPM/ft width) | | 2.72 | 2.72 | 2.69 | 2.68 | 2.68 | 2.67 | | | | **2.69** | 0.02 |
| Transmissivity (m^2/s) | | 5.62E-03 | 5.62E-03 | 5.56E-03 | 5.54E-03 | 5.55E-03 | 5.53E-03 | | | | **5.57E-03** | 4.29E-05 |
| Test Temp (C) | | | 20.6 | | | 20.8 | | | | | | |
| Temp. Corr. Factor | | | 0.990 | | | 0.986 | | | | | | |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 230.2 | 232.9 | 220.4 | 222.0 | 211.0 | 208.6 | 235.2 | 235.7 | 228.5 | 229.1 | **225.4** | 9.6 |
| | | | | | | | | | | | **208.6** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 10.98 | 11.18 | 11.78 | 12.17 | 9.84 | 9.73 | 11.06 | 11.80 | 11.23 | 11.09 | | |
| Mass/unit area (lbs./sq.ft) | 0.11 | 0.11 | 0.12 | 0.12 | 0.10 | 0.10 | 0.11 | 0.12 | 0.11 | 0.11 | **0.11** | 0.01 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.54 | 2.57 | | | | | | | | | **2.56** | 0.02 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.32 | 0.33 | | | | | | | | | **0.32** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 84 | 74 | 83 | 65 | 71 | | | | | | **75** | 8 |
| MD Elong. @ Max. Strength (%) | 26 | 30 | 27 | 37 | 32 | | | | | | **30** | 4 |

MD Machine Direction






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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576597**
**TRI Log #: 51756**

GEOTEXTILE COMPONENT

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 5.03 | 4.75 | 4.39 | 3.97 | 4.64 | 5.19 | 4.87 | 4.22 | 4.72 | 4.57 | **4.64** | 0.37 |
| Mass/Unit Area (oz/sq.yd) | 11.70 | 11.05 | 10.21 | 9.23 | 10.79 | 12.07 | 11.33 | 9.82 | 10.98 | 10.63 | **10.78** | 0.86 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 320 | 374 | 246 | 285 | 398 | 297 | 380 | 307 | 298 | 329 | **323** | 48 |
| TD - Tensile Strength (lbs) | 381 | 422 | 485 | 444 | 406 | 469 | 396 | 363 | 388 | 375 | **413** | 41 |
| MD - Elong. @ Max. Load (%) | 69 | 89 | 76 | 81 | 77 | 72 | 83 | 79 | 84 | 73 | **78** | 6 |
| TD - Elong. @ Max. Load (%) | 89 | 91 | 99 | 87 | 91 | 91 | 88 | 96 | 88 | 107 | **93** | 6 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 198 | 204 | 145 | 170 | 198 | | | | | | **183** | 25 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 149 | 132 | 143 | 110 | 154 | 148 | 107 | 140 | 117 | 110 | **131** | 18 |
| TD - Tear Strength (lbs) | 192 | 160 | 221 | 217 | 164 | 151 | 130 | 169 | 174 | 194 | **177** | 29 |
| **Apparent Opening Size (ASTM D 4751, Method B)** | | | | | | | | | | | | |
| Opening Size Diameter (mm) | 0.121 | 0.143 | 0.141 | 0.142 | 0.131 | | | | | | **0.136** | 0.009 |
| Sieve No. | 100 | 100 | 100 | 100 | 100 | | | | | | **100** | |
| **Permittivity (ASTM D 4491,Method C)** | | | | | | | | | | | | |
| Thickness ( mil) | 142 | 125 | 124 | 133 | 141 | 119 | 132 | 126 | 137 | 126 | **131** | 8 |
| Thickness ( mm) | 3.61 | 3.18 | 3.15 | 3.38 | 3.58 | 3.02 | 3.35 | 3.20 | 3.48 | 3.20 | **3.31** | 0.20 |
| Permittivity (Sec-1) | 0.79 | 1.27 | 1.12 | 1.05 | 0.94 | 1.17 | 0.90 | 1.06 | 0.99 | 0.88 | **1.02** | 0.15 |
| Permittivity (GPM/ft2) | 59.1 | 95.0 | 83.8 | 78.5 | 70.3 | 87.5 | 67.3 | 79.3 | 74.1 | 65.8 | **76.1** | 10.9 |
| Flow rate (LPM/m2) | 2408 | 3871 | 3413 | 3200 | 2865 | 3566 | 2743 | 3231 | 3017 | 2682 | **3100** | 445 |
| Permittivity (cm/sec) | 0.285 | 0.403 | 0.353 | 0.355 | 0.337 | 0.354 | 0.302 | 0.339 | 0.345 | 0.282 | **0.335** | 0.037 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576632**
**TRI Log #: 51756**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | |
| MD Average Peel Strength (ppi) | 0.96 | 1.27 | 0.96 | 4.32 | 2.76 | | | | | | **2.05** | 1.47 |
| MD Average Peel Strength (g/in) | 436 | 577 | 434 | 1961 | 1253 | | | | | | **932** | 668 |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 239.1 | 235.1 | 218.4 | 214.5 | 230.2 | 226.9 | 223.2 | 218.7 | 238.8 | 239.1 | **228.4** | 9.4 |
| | | | | | | | | | | | **214.5** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 12.45 | 12.10 | 9.56 | 10.23 | 11.80 | 11.99 | 10.55 | 10.83 | 11.59 | 11.90 | | |
| Mass/unit area (lbs./sq.ft) | 0.12 | 0.12 | 0.09 | 0.10 | 0.12 | 0.12 | 0.10 | 0.11 | 0.11 | 0.12 | **0.11** | 0.01 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.31 | 2.26 | | | | | | | | | **2.29** | 0.04 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.41 | 0.41 | | | | | | | | | **0.41** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 94 | 63 | 68 | 87 | 69 | | | | | | **76** | 13 |
| MD Elong. @ Max. Strength (%) | 24 | 27 | 28 | 24 | 28 | | | | | | **26** | 2 |

MD Machine Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576632**
**TRI Log #: 51756**

GEOTEXTILE COMPONENT

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 4.58 | 4.52 | 3.68 | 4.54 | 4.75 | 5.36 | 4.83 | 5.30 | 5.00 | 5.11 | **4.77** | 0.49 |
| Mass/Unit Area (oz/sq.yd) | 10.65 | 10.51 | 8.56 | 10.56 | 11.05 | 12.47 | 11.23 | 12.33 | 11.63 | 11.89 | **11.09** | 1.13 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 340 | 324 | 301 | 332 | 396 | 308 | 279 | 267 | 309 | 342 | **320** | 36 |
| TD - Tensile Strength (lbs) | 371 | 471 | 360 | 346 | 421 | 323 | 392 | 393 | 417 | 386 | **388** | 42 |
| MD - Elong. @ Max. Load (%) | 79 | 82 | 110 | 97 | 71 | 77 | 79 | 80 | 71 | 79 | **82** | 12 |
| TD - Elong. @ Max. Load (%) | 87 | 100 | 95 | 80 | 105 | 97 | 98 | 94 | 92 | 94 | **94** | 7 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 192 | 175 | 221 | 234 | 231 | | | | | | **211** | 26 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 146 | 171 | 148 | 138 | 126 | 158 | 144 | 115 | 117 | 98 | **136** | 22 |
| TD - Tear Strength (lbs) | 167 | 206 | 190 | 180 | 173 | 189 | 221 | 171 | 152 | 190 | **184** | 20 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576654**
**TRI Log #: 51756**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | |
| MD Average Peel Strength (ppi) | 5.45 | 4.34 | 0.84 | 3.99 | 4.33 | | | | | | **3.79** | 1.74 |
| MD Average Peel Strength (g/in) | 2474 | 1970 | 383 | 1811 | 1966 | | | | | | **1721** | 789 |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 222.0 | 227.6 | 221.1 | 218.1 | 221.5 | 223.5 | 244.4 | 238.0 | 220.9 | 222.1 | **225.9** | 8.5 |
| | | | | | | | | | | | **218.1** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 10.61 | 9.91 | 12.71 | 13.42 | 10.63 | 10.19 | 11.24 | 11.47 | 10.02 | 11.61 | | |
| Mass/unit area (lbs./sq.ft) | 0.11 | 0.10 | 0.13 | 0.13 | 0.11 | 0.10 | 0.11 | 0.11 | 0.10 | 0.12 | **0.11** | 0.01 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.25 | 2.23 | | | | | | | | | **2.24** | 0.01 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.41 | 0.42 | | | | | | | | | **0.42** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 75 | 72 | 82 | 56 | 81 | | | | | | **73** | 11 |
| MD Elong. @ Max. Strength (%) | 29 | 30 | 27 | 28 | 27 | | | | | | **28** | 1 |

MD Machine Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576654**
**TRI Log #: 51756**

GEOTEXTILE COMPONENT

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 5.07 | 4.65 | 4.26 | 3.80 | 4.94 | 4.63 | 4.04 | 4.32 | 4.85 | 4.24 | **4.48** | 0.41 |
| Mass/Unit Area (oz/sq.yd) | 11.79 | 10.82 | 9.91 | 8.84 | 11.49 | 10.77 | 9.40 | 10.05 | 11.28 | 9.86 | **10.42** | 0.96 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 362 | 354 | 305 | 340 | 307 | 292 | 301 | 266 | 269 | 434 | **323** | 51 |
| TD - Tensile Strength (lbs) | 349 | 339 | 356 | 384 | 389 | 449 | 368 | 386 | 279 | 378 | **368** | 43 |
| MD - Elong. @ Max. Load (%) | 77 | 81 | 85 | 87 | 85 | 76 | 77 | 93 | 85 | 70 | **82** | 7 |
| TD - Elong. @ Max. Load (%) | 89 | 85 | 85 | 85 | 103 | 94 | 95 | 92 | 85 | 97 | **91** | 6 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 148 | 228 | 169 | 172 | 209 | | | | | | **185** | 33 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 132 | 144 | 144 | 124 | 153 | 159 | 158 | 179 | 125 | 154 | **147** | 17 |
| TD - Tear Strength (lbs) | 170 | 159 | 180 | 177 | 191 | 164 | 199 | 137 | 154 | 207 | **174** | 22 |

MD Machine Direction TD Transverse Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576676**
**TRI Log #: 51756**

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Peel Strength (ASTM D 7005)** | | | | | | | | | | | | |
| MD Average Peel Strength (ppi) | 2.35 | 5.34 | 1.01 | 1.97 | 2.63 | | | | | | **2.66** | 1.62 |
| MD Average Peel Strength (g/in) | 1067 | 2424 | 459 | 894 | 1194 | | | | | | **1208** | 735 |
| **Thickness (ASTM D 5199)** | | | | | GEONET COMPONENT | | | | | | | |
| Thickness (mils) | 224.2 | 219.1 | 213.3 | 216.4 | 219.6 | 223.1 | 227.1 | 214.5 | 232.8 | 228.0 | **221.8** | 6.3 |
| | | | | | | | | | | | **213.3** | << min |
| **Mass/Unit Area (ASTM D 3776, Option C)** | | | | | GEONET COMPONENT | | | | | | | |
| 5" diameter Circle - Mass (g) | 11.07 | 11.47 | 8.82 | 9.22 | 11.35 | 10.41 | 10.86 | 10.78 | 9.64 | 9.76 | | |
| Mass/unit area (lbs./sq.ft) | 0.11 | 0.11 | 0.09 | 0.09 | 0.11 | 0.10 | 0.11 | 0.11 | 0.10 | 0.10 | **0.10** | 0.01 |
| **Carbon Black Content (ASTM D 1603, mod.)** | | | | | GEONET COMPONENT | | | | | | | |
| % Carbon Black | 2.77 | 2.70 | | | | | | | | | **2.74** | 0.05 |
| **Melt Flow Index (ASTM D 1238, Method A, 190°C / 2.16 kg)** | | | | | GEONET COMPONENT | | | | | | | |
| Melt Flow Index (g/10 min) | 0.31 | 0.32 | | | | | | | | | **0.32** | |
| **Tensile Properties (ASTM D 7179, 12 ipm strain rate)** | | | | | GEONET COMPONENT | | | | | | | |
| MD Max. Strength (ppi) | 62 | 79 | 74 | 56 | 74 | | | | | | **69** | 10 |
| MD Elong. @ Max. Strength (%) | 31 | 26 | 27 | 32 | 26 | | | | | | **28** | 3 |

MD Machine Direction



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**GEOCOMPOSITE TEST RESULTS**
**TRI Client: Mustang Energy Services, Inc**
**Project: OWL Landfill Services, LLC - Lea County New Mexico**

**Material: Solmax GSE FS1-200E-10-00-FA-00 Single Sided Geocomposite**
**Sample Identification: 131576676**
**TRI Log #: 51756**

GEOTEXTILE COMPONENT

| PARAMETER | TEST REPLICATE NUMBER | | | | | | | | | | MEAN | STD. DEV. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| **Mass/Unit Area (ASTM D 5261)** | | | | | | | | | | | | |
| 5" diameter Circle - Mass (g) | 5.46 | 5.38 | 4.73 | 5.09 | 5.01 | 4.42 | 4.17 | 4.44 | 4.50 | 5.50 | **4.87** | 0.48 |
| Mass/Unit Area (oz/sq.yd) | 12.70 | 12.51 | 11.00 | 11.84 | 11.65 | 10.28 | 9.70 | 10.33 | 10.47 | 12.79 | **11.33** | 1.13 |
| **Grab Tensile Properties (ASTM D 4632)** | | | | | | | | | | | | |
| MD - Tensile Strength (lbs) | 397 | 305 | 294 | 288 | 393 | 290 | 302 | 293 | 293 | 405 | **326** | 50 |
| TD - Tensile Strength (lbs) | 419 | 490 | 328 | 333 | 403 | 443 | 503 | 418 | 516 | 391 | **424** | 65 |
| MD - Elong. @ Max. Load (%) | 82 | 73 | 75 | 77 | 89 | 67 | 73 | 93 | 81 | 69 | **78** | 8 |
| TD - Elong. @ Max. Load (%) | 82 | 98 | 87 | 87 | 113 | 88 | 103 | 85 | 95 | 103 | **94** | 10 |
| **Puncture Resistance (ASTM D 4833)** | | | | | | | | | | | | |
| Puncture Strength (lbs) | 175 | 161 | 159 | 199 | 203 | | | | | | **179** | 21 |
| **Trapezoidal Tear (ASTM D 4533)** | | | | | | | | | | | | |
| MD - Tear Strength (lbs) | 165 | 146 | 131 | 120 | 150 | 185 | 142 | 91 | 151 | 129 | **141** | 26 |
| TD - Tear Strength (lbs) | 218 | 236 | 154 | 183 | 184 | 194 | 239 | 177 | 244 | 211 | **204** | 30 |

MD Machine Direction TD Transverse Direction



The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.1. GCL Inventory Control Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **MATERIAL TYPE:** | GCL | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | BLI-075-06N-03S-D-30 BentoLiner NSL | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | LOT NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 502339481 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 2 | 502339501 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 3 | 502339502 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 4 | 502339503 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 5 | 502339504 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 6 | 502339505 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | Y | 11/23/2019 |
| 7 | 502339506 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 8 | 502339507 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 9 | 502339508 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 10 | 502339509 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 11 | 502339510 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 12 | 502339511 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 13 | 502339512 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 14 | 502339513 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 15 | 502339514 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 16 | 502339515 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 17 | 502339516 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 18 | 502339517 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/23/2019 |
| 19 | 502339484 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 20 | 502339483 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 21 | 502339494 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 22 | 502339479 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 23 | 502339480 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 24 | 502339478 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 25 | 502339466 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 26 | 502339489 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 27 | 502339499 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 28 | 502339489 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 29 | 502339411 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 30 | 502339491 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 31 | 502339486 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 32 | 502339500 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 33 | 502339475 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 34 | 502339466 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 35 | 502339497 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 36 | 502339493 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 37 | 502339487 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 38 | 502339495 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 39 | 502339492 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 40 | 502339529 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |

GORDON ENVIRONMENTAL PSC

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# GCL INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **MATERIAL TYPE:** | GCL | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | BLI-075-06N-03S-D-30 BentoLiner NSL | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | Material ID Number | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 41 | 502339528 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 42 | 502339488 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 43 | 502339520 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 44 | 502339533 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 45 | 502339441 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 46 | 502339442 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 47 | 502339449 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 48 | 502339450 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 49 | 502339454 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 50 | 502339457 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | Y | 11/25/2019 |
| 51 | 502339460 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 52 | 502339464 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 53 | 502339476 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 54 | 502339469 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 55 | 502339463 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 56 | 502339477 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 57 | 502339459 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 58 | 502339456 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 59 | 502339452 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 60 | 502339446 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 61 | 502339448 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 62 | 502339447 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 63 | 502339521 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 64 | 502339534 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 65 | 502339527 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 66 | 502339530 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 67 | 502339474 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 68 | 502339473 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 69 | 502339485 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 70 | 502339462 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 71 | 502339468 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 72 | 502339465 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 73 | 502339461 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 74 | 502339467 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 75 | 502339458 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 76 | 502339455 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 77 | 502339451 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 78 | 502339445 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 79 | 502339453 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 80 | 502339443 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |

GORDON ENVIRONMENTAL PSC

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Rio Rancho, New Mexico 87124
505.867.6990

# GCL INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 3 |
| **MATERIAL TYPE:** | GCL | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | BLI-075-06N-03S-D-30 BentoLiner NSL | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | LOT NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 81 | 502339444 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 82 | 502339518 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 83 | 502339532 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 84 | 502339524 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 85 | 502339522 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 86 | 502339525 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 87 | 502339523 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 88 | 502339526 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 89 | 502339531 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 90 | 502339519 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/25/2019 |
| 91 | 502339575 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 92 | 502339571 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 93 | 502339563 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 94 | 502339567 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 95 | 502339568 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 96 | 502339581 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 97 | 502339580 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 98 | 502339543 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 99 | 502339438 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 100 | 502339436 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 101 | 502339424 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 102 | 502339439 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 103 | 502339433 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 104 | 502339560 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 105 | 502339559 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 106 | 502339552 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 107 | 502339551 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 108 | 502339425 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 109 | 502339423 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 110 | 502339426 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 111 | 502339428 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 112 | 502339440 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 113 | 502339427 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 114 | 502339434 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 115 | 502339566 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 116 | 502339578 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 117 | 502339570 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 118 | 502339573 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 119 | 502339564 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 120 | 502339574 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |

GORDON ENVIRONMENTAL PSC

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# GCL INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 4 |
| **MATERIAL TYPE:** | GCL | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | BLI-075-06N-03S-D-30 BentoLiner NSL | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | LOT NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 121 | 502339572 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 122 | 502339427 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 123 | 502339429 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 124 | 502339433 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 125 | 502339430 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 126 | 502339431 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 127 | 502339558 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 128 | 502339553 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 129 | 502339555 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 130 | 502339550 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 131 | 502339547 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 132 | 502339545 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 133 | 502339548 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 134 | 502339557 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 135 | 502339546 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 136 | 502339556 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 137 | 502339561 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 138 | 502339562 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 139 | 502339554 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 140 | 502339542 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 141 | 502339563 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 142 | 502339538 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 143 | 502339549 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | Y | 11/27/2019 |
| 144 | 502339543 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 145 | 502339535 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 146 | 502339539 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 147 | 502339544 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 148 | 502339541 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 149 | 502339539 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 150 | 502339408 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 151 | 502339413 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 152 | 502339409 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | Y | 11/27/2019 |
| 153 | 502339412 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 154 | 502339420 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 155 | 502339417 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 156 | 502339416 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 157 | 502339618 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 158 | 502339415 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 159 | 502339407 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 160 | 502339422 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |

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# GCL INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 5 |
| **MATERIAL TYPE:** | GCL | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | BLI-075-06N-03S-D-30 BentoLiner NSL | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | LOT NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 161 | 502339419 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 162 | 502339617 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 163 | 502339620 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 164 | 502339421 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 165 | 502339621 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 166 | 502339579 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 167 | 502339576 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 168 | 502339583 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 169 | 502339584 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 170 | 502339569 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 171 | 502339582 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 172 | 502339565 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 173 | 502339593 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | Y | 11/27/2019 |
| 174 | 502339592 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 175 | 502339599 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 176 | 502339594 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 177 | 502339595 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 178 | 502339590 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 179 | 502339577 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 180 | 502339596 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 181 | 502339591 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 182 | 502339598 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 183 | 502339597 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 184 | 502339586 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 185 | 502339588 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 186 | 502339587 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 187 | 502339585 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 188 | 502339589 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 11/27/2019 |
| 189 | 502339603 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 190 | 502339619 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 191 | 502339605 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 192 | 502339604 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 193 | 502339616 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 194 | 502339607 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 195 | 502339601 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 196 | 502339608 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 197 | 502339615 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 198 | 502339613 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 199 | 502339611 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 200 | 502339614 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |

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# GCL INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 6 |
| **MATERIAL TYPE:** | GCL | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | BLI-075-06N-03S-D-30 BentoLiner NSL | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | LOT NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 201 | 502339609 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 202 | 502339600 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 203 | 502339612 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 204 | 502339602 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 205 | 502339610 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |
| 206 | 502339606 | BLI-075-06N-03S-D-30 | 150 | 15 | 2250 | Y | | 12/2/2019 |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.2. Geonet Inventory Control Log

GORDON ENVIRONMENTAL PSC

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# GEONET INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 56019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **MATERIAL TYPE:** | Geonet | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | GNS-200E-00-00-E-00 | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 131527713 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 2 | 131527160 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 3 | 131529792 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 4 | 131530164 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 5 | 131537937 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 6 | 131516409 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 7 | 131516300 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 8 | 131516303 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 9 | 131520046 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 10 | 131527379 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 11 | 131533350 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 12 | 131520034 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 13 | 131529230 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 14 | 131529188 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 15 | 131531798 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 16 | 131529268 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 17 | 131531749 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 18 | 131527523 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 19 | 131520074 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 20 | 131520083 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 21 | 131520075 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 22 | 131531771 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 23 | 131534345 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 24 | 131530074 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 25 | 131534307 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 26 | 131528707 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 27 | 131527808 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 28 | 131533349 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 29 | 131516113 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 30 | 131516032 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 31 | 131530042 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 32 | 131534237 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 33 | 131530032 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 34 | 131527524 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 35 | 131525594 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 36 | 131529016 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 37 | 131516169 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 38 | 131529735 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 39 | 131517192 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 40 | 131534139 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |

GORDON ENVIRONMENTAL PSC

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# GEONET INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 56019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **MATERIAL TYPE:** | Geonet | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | GNS-200E-00-00-E-00 | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 41 | 131520045 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 42 | 131511791 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 43 | 131517268 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 44 | 131530073 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 45 | 131534433 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 46 | 131517266 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 47 | 131533220 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 48 | 131529734 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 49 | 131533270 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 50 | 131516116 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 51 | 131530029 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 52 | 131531748 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 53 | 131527362 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 54 | 131527976 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 55 | 131531868 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 56 | 131516301 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 57 | 131520084 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 58 | 131517159 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 59 | 131516168 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 60 | 131534039 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 61 | 131527676 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 62 | 131530163 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 63 | 131529742 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 64 | 131533219 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 65 | 131533269 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 66 | 131534040 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 67 | 131528709 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 68 | 131529733 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 69 | 131530031 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 70 | 131527897 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
| 71 | 131530076 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 72 | 131530072 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 73 | 131531770 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | | 11/23/2019 |
| 74 | 131527194 | GNS-200E-00-00-E-00 | 290 | 15 | 200 Mil | Y | Y | 11/23/2019 |
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# APPENDIX C

## Cell 1A Liner Installation Documentation

C.3. FML Inventory Control Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **MATERIAL TYPE:** | Smooth FML | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | 60 mil | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 6-15402 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 2 | 6-15401 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 3 | 6-15400 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 4 | 6-15431 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 5 | 6-15428 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 6 | 6-15431 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 7 | 6-15407 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 8 | 6-15498 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 9 | 6-15421 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 10 | 6-15433 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 11 | 6-15406 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11-22-19 |
| 12 | 6-15411 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 13 | 6-15410 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 14 | 6-15409 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 15 | 6-15448 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 16 | 6-15449 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 17 | 6-15437 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 18 | 6-15414 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11-22-19 |
| 19 | 6-15447 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 20 | 6-15450 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 21 | 6-15443 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 22 | 6-15430 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11-22-19 |
| 23 | 6-15463 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 24 | 6-15435 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 25 | 6-15429 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 26 | 6-15432 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 27 | 6-15426 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 28 | 6-15458 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 29 | 6-15457 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 30 | 6-15427 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 31 | 6-15456 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 32 | 6-15459 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 33 | 6-15453 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 34 | 6-15465 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 35 | 6-15464 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 36 | 6-15454 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11-22-19 |
| 37 | 6-15455 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 38 | 6-15452 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 39 | 6-15420 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |
| 40 | 6-15428 | 1054428 | 560 | 22.5 | 60mil | Y | | 11-22-19 |

GORDON ENVIRONMENTAL PSC

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505.867.6990

# FML INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **MATERIAL TYPE:** | Smooth FML | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | 60 mil | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 6-15425 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 2 | 6-15423 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 3 | 6-15446 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11/22/2019 |
| 4 | 6-15461 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 5 | 6-15462 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11/22/2019 |
| 6 | 6-15441 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 7 | 6-15451 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 8 | 6-15440 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 9 | 6-15438 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11/22/2019 |
| 10 | 6-15442 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 11 | 6-15436 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 12 | 6-15439 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 13 | 6-15444 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 14 | 6-15434 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 15 | 6-15417 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 16 | 6-15445 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 17 | 6-15415 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 18 | 6-15404 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 19 | 6-15413 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 20 | 6-15405 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 21 | 6-15428 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 22 | 6-15412 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 23 | 6-15499 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 24 | 6-15408 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 25 | 6-15416 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
| 26 | 6-15422 | 1054428 | 560 | 22.5 | 60mil | Y | Y | 11/22/2019 |
| 27 | 6-15418 | 1054428 | 560 | 22.5 | 60mil | Y | | 11/22/2019 |
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GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 3 |
| **MATERIAL TYPE:** | Textured FML | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | 60 mil Textured | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solmax/GSE | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 101496582 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 2 | 101496583 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 3 | 101496571 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 4 | 101496558 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 5 | 101496579 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 6 | 101496578 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 7 | 101496584 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 8 | 101496572 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 9 | 101496576 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 10 | 101496570 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 11 | 101496566 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 12 | 101496585 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 13 | 101496573 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 14 | 101496577 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 15 | 101496565 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | Y | 11/27/2019 |
| 16 | 101496559 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 17 | 101496575 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 18 | 101496568 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 19 | 101496581 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | Y | 11/27/2019 |
| 20 | 101496567 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 21 | 101496580 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 22 | 101496586 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 23 | 101496564 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 24 | 101496557 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 25 | 101496574 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | Y | 11/27/2019 |
| 26 | 101496556 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 27 | 101496554 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 28 | 101496555 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | | 11/27/2019 |
| 29 | 101496553 | HDT-606GE-BBB-B-WO | 520 | 22.5 | 60mil | Y | Y | 11/27/2019 |
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# APPENDIX C

## Cell 1A Liner Installation Documentation

C.4. Geocomposite Inventory Control Log

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GEOCOMPOSITE INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oil Field Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **MATERIAL TYPE:** | Double-Sided Geocomposite | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | FS2-225E-10-10-E-ON | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solomax | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 131576711 | FS2-225E-10-10-0N | 200 | 15.0 | 225-10-10 | Y | | 11/22/2019 |
| 2 | 131576785 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 3 | 131576786 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 4 | 131576792 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 5 | 131576727 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 6 | 131576710 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 7 | 131576701 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 8 | 131573728 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 9 | 131576699 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 10 | 131576799 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 11 | 131576797 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 12 | 131576799 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 13 | 131576798 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 14 | 131576698 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 15 | 131576802 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 16 | 131576713 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 17 | 131576715 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 18 | 131576709 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 19 | 131576704 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 20 | 131576693 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 21 | 131576692 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 22 | 131576703 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 23 | 131576702 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 24 | 131576801 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 25 | 131576712 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 26 | 131576725 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 27 | 131576723 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/22/2019 |
| 28 | 131576729 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 29 | 131576767 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 30 | 131576601 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/22/2019 |
| 31 | 131576666 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 32 | 131576671 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 33 | 131576756 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 34 | 131576758 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 35 | 131576791 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 36 | 131576697 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 37 | 131576695 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 38 | 131576730 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 39 | 131576731 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 40 | 131576732 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GEOCOMPOSITE INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oil Field Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **MATERIAL TYPE:** | Double-Sided Geocomposite | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | FS2-225E-10-10-E-ON | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solomax | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 41 | 131576726 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 42 | 131576705 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 43 | 131576691 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 44 | 131576800 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 45 | 131576790 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 46 | 131576690 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/22/2019 |
| 47 | 131576694 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 48 | 131576707 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 49 | 131576789 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 50 | 131576708 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 51 | 131576714 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 52 | 131576719 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 53 | 131576718 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 54 | 131576717 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 55 | 131576706 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/22/2019 |
| 56 | 131576736 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 57 | 131576737 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 58 | 131576765 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 59 | 131576793 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 60 | 131576696 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/22/2019 |
| 61 | 131576783 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 62 | 131576794 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 63 | 131576763 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 64 | 131576748 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 65 | 131576747 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 66 | 131576764 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 67 | 131576795 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 68 | 131576762 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 69 | 131576746 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 70 | 131576784 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 71 | 131576796 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 72 | 131576744 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 73 | 131576788 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 74 | 131576722 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 75 | 131576720 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 76 | 131576775 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 77 | 131576721 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 78 | 131576745 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 79 | 131576787 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/23/2019 |
| 80 | 131576741 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |

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# GEOCOMPOSITE INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oil Field Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 3 |
| **MATERIAL TYPE:** | Double-Sided Geocomposite | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | FS2-225E-10-10-E-ON | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solomax | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 81 | 131576781 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 82 | 131576774 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 83 | 131576753 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 84 | 131576754 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 85 | 131576782 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 86 | 131576755 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/23/2019 |
| 87 | 131576780 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 88 | 131576738 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 89 | 131576768 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 90 | 131576770 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 91 | 131576749 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 92 | 131576733 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 93 | 131576735 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 94 | 131576761 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 95 | 131576734 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 96 | 131576724 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 97 | 131576778 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 98 | 131576760 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 99 | 131576779 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 100 | 131576773 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 101 | 131576769 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 102 | 131576766 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 103 | 131576759 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 104 | 131576740 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 105 | 131576752 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 106 | 131576739 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/23/2019 |
| 107 | 131576750 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 108 | 131576751 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 109 | 131576743 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 110 | 131576742 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 111 | 131576772 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
| 112 | 131576771 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | Y | 11/23/2019 |
| 113 | 131576777 | FS2-225E-10-10-0N | 200 | 14.5 | 225-10-10 | Y | | 11/23/2019 |
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# GEOCOMPOSITE INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oil Field Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **MATERIAL TYPE:** | Single-Sided Geocomposite | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | FS1-200E-10-00-FA-ON | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solomax | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 1 | 131576649 | FS1-200E-10-00-FA-ON | 288 | 14.75 | 200-10-00 | Y | | 11/23/2019 |
| 2 | 131576634 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 3 | 131576633 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 4 | 131576650 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 5 | 131576687 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 6 | 131576652 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 7 | 131576688 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 8 | 131576805 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 9 | 131576776 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 10 | 131576681 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 11 | 131576657 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 12 | 131576656 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 13 | 131576682 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 14 | 131576643 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 15 | 131576624 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 16 | 131576662 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 17 | 131576654 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 18 | 131576670 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 19 | 131576665 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 20 | 131576676 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 21 | 131576680 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 22 | 131576613 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 23 | 131576627 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 24 | 131576647 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 25 | 131576688 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 26 | 131576661 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 27 | 131576672 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 28 | 131576677 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 29 | 131576614 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 30 | 131576622 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 31 | 131576621 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 32 | 131576628 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 33 | 131576629 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 34 | 131576615 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 35 | 131576630 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 36 | 131576611 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 37 | 131576685 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 38 | 131576640 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 39 | 131576619 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 40 | 131576678 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |

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# GEOCOMPOSITE INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 10156019 |
| **CLIENT:** | Oil Field Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **MATERIAL TYPE:** | Single-Sided Geocomposite | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | FS1-200E-10-00-FA-ON | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | Solomax | **UNLOADING METHOD:** | Forklift and sling |

| | ROLL NUMBER | MATERIAL ID NO. | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | CONFORMANCE SAMPLE (Y/N) | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | WIDTH (FT) | THICKNESS OF WEIGHT | | | |
| 41 | 131576626 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 42 | 131576618 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 43 | 131576631 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 44 | 131576632 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 45 | 131576625 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 46 | 131576610 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 47 | 131576637 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 48 | 131576674 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 49 | 131576646 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 50 | 131576673 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 51 | 131576639 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 52 | 131576651 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 53 | 131576616 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 54 | 131576675 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 55 | 131576653 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 56 | 131576667 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 57 | 131576641 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 58 | 131576645 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 59 | 131576658 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 60 | 131576659 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 61 | 131576635 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 62 | 131576668 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 63 | 131576671 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 64 | 131576648 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 65 | 131576612 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 66 | 131576684 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 67 | 131576638 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 68 | 131576683 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 69 | 131576653 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 70 | 131576642 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 71 | 131576623 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 72 | 131576664 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 73 | 131576679 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 74 | 131576644 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 75 | 131576669 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| 76 | 131576597 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | Y | 11/23/2019 |
| 77 | 131576636 | FS1-200E-10-00-FA-ON | 288 | 14.5 | 200-10-00 | Y | | 11/23/2019 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.5. Leachate Pipe and Riser Pipe Inventory Control Log

GORDON PSC ENVIRONMENTAL

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# LEACHATE COLLECTION AND RISER PIPE INVENTORY CONTROL LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Water Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **MATERIAL TYPE:** | Pipe Inventory | **DATE OF INVENTORY:** | See Below |
| **MATERIAL IDENTIFICATION:** | See Below | **INVENTORY MONITOR:** | Don Gray |
| **MATERIAL MANUFACTURER:** | See Below | **UNLOADING METHOD:** | Forklift and sling |

| | TYPE | QUANTITY | MATERIAL DIMENSIONS | | | MANUF. QC CERT. (Y/N) | TOTAL LENGTH | DATE OF INVENTORY |
|---|---|---|---|---|---|---|---|---|
| | | | LENGTH (FT) | DIAM. (IN) | PIPE SDR | | | |
| 1 | Solid HDPE | 22 | 40.0 | 6.0 | 13.5 | Y | 880 | 12/4/19 |
| 3 | End Cap | 1 | 6.0 | 6.0 | 13.5 | N | NA | 12/4/19 |
| 4 | Tee | 1 | 6.0 | 6.0 | 13.5 | N | NA | 12/4/19 |
| 5 | HDPE Blind Flange 6" Thick | 1 | 6.0 | 6.0 | 13.5 | N | NA | 12/4/19 |
| 6 | Stainlees Steel Rod 36" | 1 | NA | 0.5 | NA | N | 36" | 12/4/19 |
| 7 | Stainless Steel Nuts | 16 | NA | 0.5 | NA | N | NA | 12/4/19 |
| 8 | Stainless Steel Flat Washers | 16 | NA | 0.5 | NA | N | NA | 12/4/19 |
| 9 | Stainless Steel Backup Ring | 1 | NA | 6.0 | NA | N | NA | 12/4/19 |
| 10 | Neoprene Gasket | 1 | NA | 6.0 | NA | N | NA | 12/4/19 |
| 11 | 6" Rubber Cap | 1 | NA | 6.0 | NA | N | NA | 12/4/19 |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.6. GCL Deployment Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **DEPLOYMENT LOCATION:** | West Side, North Slope & Floor | **MONITOR:** | Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 1 | 502339606 | 151.0 | 15.5 | 2,340.5 | 12/3/19 |
| 2 | 502339608 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 3 | 502339611 | 151.0 | 15.5 | 2,340.5 | 12/3/19 |
| 4 | 502339602 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 5 | 502339604 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 6 | 502339609 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 7 | 502339607 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 8 | 502339613 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 9 | 502339600 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 10 | 502339614 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 11 | 502339601 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 12 | 502339616 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 13 | 502339615 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 14 | 502339589 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 15 | 502339603 | 150.0 | 15.5 | 2,325.0 | 12/3/19 |
| 16 | 502339579 | 66.0 | 15.5 | 1,023.0 | 12/3/19 |
| 17 | 502339586 | 150.0 | 15.5 | 2,325.0 | 12/5/19 |
| 18 | 502339593 | 95.0 | 15.5 | 1,472.5 | 12/5/19 |
| 19 | 502339593 | 59.0 | 15.5 | 914.5 | 12/5/19 |
| 20 | 502339599 | 82.0 | 15.5 | 1,271.0 | 12/5/19 |
| 21 | 502339588 | 111.0 | 15.5 | 1,720.5 | 12/5/19 |
| 16A | 502339588 | 33.0 | 15.5 | 511.5 | 12/5/19 |
| 22 | 502339588 | 6.5 | 15.5 | 100.8 | 12/5/19 |
| 23 | 502339597 | 149.0 | 15.5 | 2,309.5 | 12/5/19 |
| 24 | 502339605 | 88.0 | 15.5 | 1,364.0 | 12/5/19 |
| 25 | 502339605 | 61.0 | 15.5 | 945.5 | 12/5/19 |
| 26 | 502339587 | 150.0 | 15.5 | 2,325.0 | 12/5/19 |
| 27 | 502339591 | 34.0 | 15.5 | 527.0 | 12/5/19 |
| 28 | 502339591 | 117.0 | 15.5 | 1,813.5 | 12/5/19 |
| 29 | 502339619 | 91.0 | 15.5 | 1,410.5 | 12/5/19 |
| 30 | 502339594 | 49.0 | 15.5 | 759.5 | 12/5/19 |
| 31 | 502339594 | 103.0 | 15.5 | 1,596.5 | 12/5/19 |
| 32 | 502339585 | 142.0 | 15.5 | 2,201.0 | 12/5/19 |
| 33 | 502339585 | 8.0 | 15.5 | 124.0 | 12/5/19 |
| 34 | 502339595 | 150.0 | 15.5 | 2,325.0 | 12/5/19 |
| 35 | 502339596 | 150.0 | 15.5 | 2,325.0 | 12/5/19 |
| 36 | 502339478 | 148.0 | 15.5 | 2,294.0 | 12/5/19 |
| 37 | 502339595 | 86.0 | 15.5 | 1,333.0 | 12/5/19 |
| 38 | 502339595 | 64.0 | 15.5 | 992.0 | 12/5/19 |
| 40 | 502339582 | 31.0 | 15.5 | 480.5 | 12/5/19 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 69,370.3 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **DEPLOYMENT LOCATION:** | West Side, Floor | **MONITOR:** | Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 41 | 502339582 | 118 | 15.5 | 1,829.0 | 12/5/2019 |
| 42 | 502339592 | 123 | 15.5 | 1,906.5 | 12/5/2019 |
| 43 | 502339593 | 26 | 15.5 | 403.0 | 12/5/2019 |
| 44 | 502339577 | 150 | 15.5 | 2,325.0 | 12/5/2019 |
| 45 | 502339569 | 68 | 15.5 | 1,054.0 | 12/5/2019 |
| 39 | 502339565 | 150 | 15.5 | 2,325.0 | 12/5/2019 |
| 46 | 502339478 | 151 | 15.5 | 2,340.5 | 12/5/2019 |
| 47 | 502339569 | 80 | 15.5 | 1,240.0 | 12/5/2019 |
| 48 | 502339584 | 51 | 15.5 | 790.5 | 12/5/2019 |
| 48A | 502339478 | 66 | 7.0 | 462.0 | 12/5/2019 |
| 49 | 502339500 | 15 | 8.0 | 120.0 | 12/5/2019 |
| 49A | 502339500 | 46 | 8.0 | 368.0 | 12/5/2019 |
| 50 | 502339500 | 151 | 15.5 | 2,340.5 | 12/6/2019 |
| 51 | 502339466 | 121 | 15.5 | 1,875.5 | 12/6/2019 |
| 52 | 502339466 | 32 | 15.5 | 496.0 | 12/6/2019 |
| 53 | 502339495 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 54 | 502339492 | 57 | 15.5 | 883.5 | 12/6/2019 |
| 55 | 502339492 | 84 | 15.5 | 1,302.0 | 12/6/2019 |
| 56 | 502339475 | 151 | 15.5 | 2,340.5 | 12/6/2019 |
| 57 | 502339576 | 13 | 15.5 | 201.5 | 12/6/2019 |
| 58 | 502339576 | 137 | 15.5 | 2,123.5 | 12/6/2019 |
| 59 | 502339480 | 104 | 15.5 | 1,612.0 | 12/6/2019 |
| 60 | 502339480 | 45 | 15.5 | 697.5 | 12/6/2019 |
| 61 | 502339479 | 151 | 15.5 | 2,340.5 | 12/6/2019 |
| 62 | 502339583 | 53 | 15.5 | 821.5 | 12/6/2019 |
| 63 | 502339583 | 99 | 15.5 | 1,534.5 | 12/6/2019 |
| 64 | 502335437 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 65 | 502339491 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 66 | 502339493 | 94 | 15.5 | 1,457.0 | 12/6/2019 |
| 67 | 502339493 | 56 | 15.5 | 868.0 | 12/6/2019 |
| 68 | 502339497 | 151 | 15.5 | 2,340.5 | 12/6/2019 |
| 69 | 502339494 | 42 | 15.5 | 651.0 | 12/6/2019 |
| 70 | 502339494 | 108 | 15.5 | 1,674.0 | 12/6/2019 |
| 71 | 502339411 | 84 | 15.5 | 1,302.0 | 12/6/2019 |
| 72 | 502339496 | 56 | 15.5 | 868.0 | 12/6/2019 |
| 73 | 502339496 | 95 | 15.5 | 1,472.5 | 12/6/2019 |
| 74 | 502339489 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 75 | 502339483 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 76 | 502339502 | 95 | 15.5 | 1,472.5 | 12/6/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 57,463.0 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 3 |
| **DEPLOYMENT LOCATION:** | West Side, Floor | **MONITOR:** | Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 77 | 502339502 | 57 | 15.5 | 883.5 | 12/6/2019 |
| 78 | 502339484 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 79 | 502339486 | 43 | 15.5 | 666.5 | 12/6/2019 |
| 80 | 502339486 | 108 | 15.5 | 1,674.0 | 12/6/2019 |
| 81 | 502339499 | 136 | 15.5 | 2,108.0 | 12/6/2019 |
| 82 | 502339499 | 14 | 15.5 | 217.0 | 12/6/2019 |
| 83 | 502339503 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 84 | 502339498 | 85 | 15.5 | 1,317.5 | 12/6/2019 |
| 85 | 502339498 | 65 | 15.5 | 1,007.5 | 12/6/2019 |
| 86 | 502339501 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 87 | 502339481 | 31 | 15.5 | 480.5 | 12/6/2019 |
| 88 | 502339481 | 108 | 15.5 | 1,674.0 | 12/6/2019 |
| 89 | 502339504 | 138 | 15.5 | 2,139.0 | 12/6/2019 |
| 90 | 502339504 | 12 | 15.5 | 186.0 | 12/6/2019 |
| 91 | 502339195 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 92 | 502339505 | 86 | 15.5 | 1,333.0 | 12/6/2019 |
| 93 | 502339505 | 63 | 15.5 | 976.5 | 12/6/2019 |
| 94 | 502339512 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 95 | 502339514 | 36 | 15.5 | 558.0 | 12/6/2019 |
| 96 | 502339514 | 114 | 15.5 | 1,767.0 | 12/6/2019 |
| 97 | 502339510 | 133 | 15.5 | 2,061.5 | 12/6/2019 |
| 98 | 502339510 | 17 | 15.5 | 263.5 | 12/6/2019 |
| 99 | 502339508 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 100 | 502339513 | 82 | 15.5 | 1,271.0 | 12/6/2019 |
| 101 | 502339513 | 70 | 15.5 | 1,085.0 | 12/6/2019 |
| 102 | 502339507 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 103 | 502339517 | 26 | 15.5 | 403.0 | 12/6/2019 |
| 104 | 502339517 | 124 | 15.5 | 1,922.0 | 12/6/2019 |
| 105 | 502339516 | 120 | 15.5 | 1,860.0 | 12/6/2019 |
| 106 | 502339519 | 28 | 15.5 | 434.0 | 12/6/2019 |
| 107 | 502339515 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 108 | 502339515 | 71 | 15.5 | 1,100.5 | 12/6/2019 |
| 109 | 502339560 | 79 | 15.5 | 1,224.5 | 12/6/2019 |
| 110 | 502339557 | 150 | 15.5 | 2,325.0 | 12/6/2019 |
| 111 | 502339557 | 22 | 15.5 | 341.0 | 12/6/2019 |
| 112 | 502339557 | 130 | 15.5 | 2,015.0 | 12/6/2019 |
| 113 | 502339511 | 95 | 12.0 | 1,140.0 | 12/6/2019 |
| 114 | 502339511 | 85 | 11.0 | 935.0 | 12/6/2019 |
| 115 | 502339511 | 15 | 15.5 | 232.5 | 12/6/2019 |
| 116 | 502339511 | 10 | 15.5 | 155.0 | 12/6/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 54,356.5 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 4 |
| **DEPLOYMENT LOCATION:** | East Side, North Slope & East Slope | **MONITOR:** | Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 117 | 502339529 | 131 | 15.5 | 2,030.5 | 12/6/2019 |
| 118 | 502339529 | 20 | 15.5 | 310.0 | 12/6/2019 |
| 119 | 502339530 | 110 | 15.5 | 1,705.0 | 12/6/2019 |
| 120 | 502339530 | 40 | 15.5 | 620.0 | 12/6/2019 |
| 121 | 502339444 | 93 | 15.5 | 1,441.5 | 12/6/2019 |
| 122 | 502330944 | 57 | 15.5 | 883.5 | 12/6/2019 |
| 123 | 502339443 | 73 | 15.5 | 1,131.5 | 12/6/2019 |
| 124 | 502339443 | 77 | 15.5 | 1,193.5 | 12/6/2019 |
| 125 | 502339534 | 55 | 15.5 | 852.5 | 12/6/2019 |
| 126 | 502339534 | 95 | 15.5 | 1,472.5 | 12/6/2019 |
| 127 | 502339520 | 36 | 15.5 | 558.0 | 12/6/2019 |
| 128 | 502339520 | 111 | 15.5 | 1,720.5 | 12/6/2019 |
| 129 | 502339488 | 23 | 15.5 | 356.5 | 12/6/2019 |
| 130 | 502339488 | 80 | 15.5 | 1,240.0 | 12/6/2019 |
| 131 | 502339453 | 53 | 15.5 | 821.5 | 12/6/2019 |
| 132 | 502339453 | 98 | 15.5 | 1,519.0 | 12/6/2019 |
| 133 | 502339511 | 26 | 15.5 | 403.0 | 12/6/2019 |
| 134 | 502339528 | 6 | 15.5 | 93.0 | 12/6/2019 |
| 135 | 502339528 | 130 | 15.5 | 2,015.0 | 12/6/2019 |
| 136 | 502339527 | 130 | 15.5 | 2,015.0 | 12/7/2019 |
| 137 | 502339521 | 21 | 15.5 | 325.5 | 12/7/2019 |
| 138 | 502339521 | 110 | 15.5 | 1,705.0 | 12/7/2019 |
| 139 | 502339445 | 36 | 15.5 | 558.0 | 12/7/2019 |
| 140 | 502339445 | 96 | 15.5 | 1,488.0 | 12/7/2019 |
| 141 | 502339441 | 54 | 15.5 | 837.0 | 12/7/2019 |
| 142 | 502339441 | 52 | 15.5 | 806.0 | 12/7/2019 |
| 143 | 502339451 | 97 | 15.5 | 1,503.5 | 12/7/2019 |
| 144 | 502339533 | 53 | 15.5 | 821.5 | 12/7/2019 |
| 145 | 502339448 | 50 | 15.5 | 775.0 | 12/7/2019 |
| 146 | 502339455 | 26 | 15.5 | 403.0 | 12/7/2019 |
| 147 | 502339455 | 26 | 15.5 | 403.0 | 12/7/2019 |
| 148 | 502339455 | 38 | 15.5 | 589.0 | 12/7/2019 |
| 149 | 502339455 | 38 | 15.5 | 589.0 | 12/7/2019 |
| 150 | 502339455 | 67 | 15.5 | 1,038.5 | 12/7/2019 |
| 151 | 502339455 | 65 | 15.5 | 1,007.5 | 12/7/2019 |
| 152 | 502339455 | 68 | 15.5 | 1,054.0 | 12/7/2019 |
| 153 | 502339533 | 99 | 15.5 | 1,534.5 | 12/7/2019 |
| 154 | 502339451 | 99 | 15.5 | 1,534.5 | 12/7/2019 |
| 155 | 502339442 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 156 | 502339446 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 44,004.5 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 5 |
| **DEPLOYMENT LOCATION:** | East Side, Floor and East Slope | **MONITOR:** | Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 157 | 502339452 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 158 | 502339448 | 94 | 15.5 | 1,457.0 | 12/7/2019 |
| 159 | 502339448 | 14 | 15.5 | 217.0 | 12/7/2019 |
| 160 | 502339449 | 108 | 15.5 | 1,674.0 | 12/7/2019 |
| 161 | 502339449 | 23 | 15.5 | 356.5 | 12/7/2019 |
| 162 | 502339469 | 92 | 15.5 | 1,426.0 | 12/7/2019 |
| 163 | 502339469 | 42 | 15.5 | 651.0 | 12/7/2019 |
| 164 | 502339464 | 52 | 15.5 | 806.0 | 12/7/2019 |
| 165 | 502339464 | 97 | 15.5 | 1,503.5 | 12/7/2019 |
| 166 | 502339468 | 15 | 15.5 | 232.5 | 12/7/2019 |
| 167 | 502339468 | 131 | 15.5 | 2,030.5 | 12/7/2019 |
| 168 | 502339464 | 8 | 15.5 | 124.0 | 12/7/2019 |
| 169 | 502339462 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 170 | 502339458 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 171 | 502339467 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 172 | 502339450 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 173 | 502339454 | 34 | 15.5 | 527.0 | 12/7/2019 |
| 174 | 502339454 | 116 | 15.5 | 1,798.0 | 12/7/2019 |
| 175 | 502339456 | 63 | 15.5 | 976.5 | 12/7/2019 |
| 176 | 502339456 | 88 | 15.5 | 1,364.0 | 12/7/2019 |
| 177 | 502339459 | 88 | 15.5 | 1,364.0 | 12/7/2019 |
| 178 | 502339459 | 57 | 15.5 | 883.5 | 12/7/2019 |
| 179 | 502339461 | 116 | 15.5 | 1,798.0 | 12/7/2019 |
| 180 | 502339461 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 181 | 502339465 | 28 | 15.5 | 434.0 | 12/7/2019 |
| 182 | 502339457 | 150 | 15.5 | 2,325.0 | 12/7/2019 |
| 183 | 502339460 | 151 | 15.5 | 2,340.5 | 12/7/2019 |
| 184 | 502339477 | 151 | 15.5 | 2,340.5 | 12/7/2019 |
| 185 | 502339463 | 151 | 15.5 | 2,340.5 | 12/8/2019 |
| 186 | 502339473 | 150 | 15.5 | 2,325.0 | 12/8/2019 |
| 187 | 502339458 | 116 | 15.5 | 1,798.0 | 12/8/2019 |
| 188 | 502339476 | 149 | 15.5 | 2,309.5 | 12/8/2019 |
| 189 | 502339474 | 150 | 15.5 | 2,325.0 | 12/8/2019 |
| 190 | 502339537 | 151 | 15.5 | 2,340.5 | 12/8/2019 |
| 191 | 502339535 | 23 | 15.5 | 356.5 | 12/8/2019 |
| 192 | 502339335 | 129 | 15.5 | 1,999.5 | 12/8/2019 |
| 193 | 502339536 | 151 | 15.5 | 2,340.5 | 12/8/2019 |
| 194 | 502339538 | 150 | 15.5 | 2,325.0 | 12/8/2019 |
| 195 | 502339554 | 137 | 15.5 | 2,123.5 | 12/8/2019 |
| 196 | 502339554 | 13 | 15.5 | 201.5 | 12/8/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 63,364.0 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 6 |
| **DEPLOYMENT LOCATION:** | East Side, Floor and East Slope | **MONITOR:** | Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 197 | 502339549 | 150 | 15.5 | 2,325.0 | 12/8/2019 |
| 198 | 502339544 | 150 | 15.5 | 2,325.0 | 12/8/2019 |
| 199 | 502339561 | 149 | 15.5 | 2,309.5 | 12/8/2019 |
| 200 | 502339542 | 149 | 15.5 | 2,309.5 | 12/8/2019 |
| 201 | 502339546 | 26 | 15.5 | 403.0 | 12/13/2019 |
| 202 | 502339562 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 203 | 502339556 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 204 | 502339610 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 205 | 502339612 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 206 | 502339547 | 149 | 15.5 | 2,309.5 | 12/13/2019 |
| 207 | 502339413 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 208 | 502339541 | 149 | 15.5 | 2,309.5 | 12/13/2019 |
| 209 | 502339412 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 210 | 502339408 | 151 | 15.5 | 2,340.5 | 12/13/2019 |
| 211 | 502339539 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 212 | 502339409 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 213 | 502339420 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 214 | 502339417 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 215 | 502339422 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 216 | 502339415 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 217 | 502339617 | 151 | 15.5 | 2,340.5 | 12/13/2019 |
| 218 | 502339618 | 151 | 15.5 | 2,340.5 | 12/13/2019 |
| 219 | 502339407 | 152 | 15.5 | 2,356.0 | 12/13/2019 |
| 220 | 502339416 | 151 | 15.5 | 2,340.5 | 12/13/2019 |
| 221 | 502339419 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 222 | 502339620 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 223 | 502339621 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 224 | 502339579 | 90 | 15.5 | 1,395.0 | 12/13/2019 |
| 225 | 502339519 | 51 | 15.5 | 790.5 | 12/13/2019 |
| 226 | 502339523 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 227 | 502339421 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 228 | 502336408 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 229 | 502339531 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 230 | 502339526 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 231 | 502339522 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 232 | 502339518 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 233 | 502339525 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 234 | 502339532 | 150 | 15.5 | 2,325.0 | 12/13/2019 |
| 235 | 502339524 | 132.0 | 15.5 | 2,046.0 | 12/14/2019 |
| 236 | 502339524 | 19.0 | 15.5 | 294.5 | 12/14/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 86,335.0 | |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GCL DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfilll | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 7 |
| **DEPLOYMENT LOCATION:** | East Side, Floor & East Slope | **MONITOR:** | Don Gray, Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 237 | 502339519 | 16 | 15.5 | 248.0 | 12/14/19 |
| 238 | 502339519 | 84 | 15.5 | 1,302.0 | 12/14/19 |
| 239 | 502339575 | 150 | 15.5 | 2,325.0 | 12/14/19 |
| 240 | 502339573 | 149 | 15.5 | 2,309.5 | 12/14/19 |
| 241 | 502339564 | 98 | 15.5 | 1,519.0 | 12/14/19 |
| 242 | 502339564 | 50 | 15.5 | 775.0 | 12/16/19 |
| 243 | 502339578 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 244 | 502339427 | 110 | 15.5 | 1,705.0 | 12/16/19 |
| 245 | 502339578 | 39 | 15.5 | 604.5 | 12/16/19 |
| 246 | 502339434 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 247 | 502339568 | 120 | 15.5 | 1,860.0 | 12/16/19 |
| 248 | 502339427 | 27 | 15.5 | 418.5 | 12/16/19 |
| 249 | 502339568 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 250 | 502339526 | 131 | 15.5 | 2,030.5 | 12/16/19 |
| 251 | 502339440 | 17 | 15.5 | 263.5 | 12/16/19 |
| 252 | 502339430 | 149 | 15.5 | 2,309.5 | 12/16/19 |
| 253 | 502339580 | 141 | 15.5 | 2,185.5 | 12/16/19 |
| 254 | 502339581 | 9 | 15.5 | 139.5 | 12/16/19 |
| 255 | 502339432 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 256 | 502339437 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 257 | 502339567 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 258 | 502339429 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 259 | 502339563 | 150 | 15.5 | 2,325.0 | 12/16/19 |
| 260 | 502339563 | 136 | 15.5 | 2,108.0 | 12/16/19 |
| 261 | 502339563 | 6 | 15.5 | 93.0 | 12/16/19 |
| 262 | 502339563 | 9 | 15.5 | 139.5 | 12/16/19 |
| 263 | 502339563 | 27 | 6.0 | 162.0 | 12/16/19 |
| **REPAIRS** | | | | | |
| R1 | 502339546 | 19 | 15.5 | 294.5 | 12/12/19 |
| R2 | 502339546 | 25 | 15.5 | 387.5 | 12/12/19 |
| R3 | 502339546 | 35 | 15.5 | 542.5 | 12/12/19 |
| R4 | 502339546 | 45 | 15.5 | 697.5 | 12/12/19 |
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| | | | **TOTAL LINER PLACED ($FT^2$):** | 43,019.5 | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.7. Secondary FML Deployment Log

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**DEPLOYMENT LOCATION:** Secondary FML, East & West Sides, North Slope & East Slope, Textured
**MONITOR:** Don Gray

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| NS1 | 101496553 | 115 | 22.5 | 2,587.5 | 12/3/2019 |
| NS2 | 101496553 | 115 | 22.5 | 2,587.5 | 12/3/2019 |
| NS3 | 101496553 | 116 | 22.5 | 2,610.0 | 12/3/2019 |
| NS4 | 101496553 | 115 | 22.5 | 2,587.5 | 12/3/2019 |
| NS5 | 101496553 | 51 | 22.5 | 1,147.5 | 12/3/2019 |
| NS5A | 101496581 | 65 | 22.5 | 1,462.5 | 12/3/2019 |
| NS6 | 101496581 | 119 | 22.5 | 2,677.5 | 12/3/2019 |
| NS7 | 101496581 | 123 | 22.5 | 2,767.5 | 12/3/2019 |
| NS8 | 101496581 | 126 | 22.5 | 2,835.0 | 12/3/2019 |
| NS9 | 101496581 | 69 | 22.5 | 1,552.5 | 12/3/2019 |
| NS9A | 101496555 | 54 | 22.5 | 1,215.0 | 12/3/2019 |
| NS10 | 101496555 | 123 | 22.5 | 2,767.5 | 12/3/2019 |
| NS11 | 101496555 | 109 | 22.5 | 2,452.5 | 12/6/2019 |
| NS12 | 101496555 | 56 | 12.0 | 672.0 | 12/6/2019 |
| NS12A | 101496555 | 53 | 12.0 | 636.0 | 12/6/2019 |
| NS13 | 101496555 | 126 | 22.5 | 2,835.0 | 12/6/2019 |
| NS14 | 101496583 | 126 | 22.5 | 2,835.0 | 12/6/2019 |
| NS15 | 101496583 | 127 | 22.5 | 2,857.5 | 12/6/2019 |
| NS16 | 101496583 | 129 | 22.5 | 2,902.5 | 12/6/2019 |
| NS17 | 101496583 | 129 | 22.5 | 2,902.5 | 12/6/2019 |
| NS18 | 101496568 | 130 | 22.5 | 2,925.0 | 12/6/2019 |
| NS19 | 101496568 | 130 | 22.5 | 2,925.0 | 12/7/2019 |
| NS20 | 101496568 | 130 | 22.5 | 2,925.0 | 12/7/2019 |
| NS21 | 101496568 | 124 | 22.5 | 2,790.0 | 12/7/2019 |
| NS22 | 101496571 | 100 | 22.5 | 2,250.0 | 12/7/2019 |
| NS23 | 101496571 | 80 | 22.5 | 1,800.0 | 12/7/2019 |
| NS24 | 101496571 | 56 | 22.5 | 1,260.0 | 12/7/2019 |
| NS25 | 101496571 | 14 | 22.5 | 315.0 | 12/7/2019 |
| | | | | | |
| ES1 | 101496571 | 12 | 7.0 | 84.0 | 12/7/2019 |
| ES2 | 101496571 | 12 | 22.5 | 270.0 | 12/7/2019 |
| ES3 | 101496571 | 32 | 22.5 | 720.0 | 12/7/2019 |
| ES4 | 101496554 | 55 | 22.5 | 1,237.5 | 12/7/2019 |
| ES5 | 101496554 | 73 | 22.5 | 1,642.5 | 12/7/2019 |
| ES6 | 101496554 | 97 | 22.5 | 2,182.5 | 12/7/2019 |
| ES7 | 101495664 | 99 | 22.5 | 2,227.5 | 12/7/2019 |
| ES7A | 101496575 | 20 | 22.5 | 450.0 | 12/7/2019 |
| ES8 | 101496575 | 105 | 22.5 | 2,362.5 | 12/7/2019 |
| ES9 | 101496575 | 106 | 22.5 | 2,385.0 | 12/7/2019 |
| ES10 | 101496575 | 107 | 22.5 | 2,407.5 | 12/7/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 78,049.5 | |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**DEPLOYMENT LOCATION:** Secondary FML, East Side, East Slope, Textured
**MONITOR:** Don Gray

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| ES11 | 101496575 | 111 | 22.5 | 2,497.5 | 12/7/2019 |
| ES12 | 101496575 | 63 | 22.5 | 1,417.5 | 12/7/2019 |
| ES13 | 101496558 | 47 | 22.5 | 1,057.5 | 12/7/2019 |
| ES14 | 101496558 | 110 | 22.5 | 2,475.0 | 12/7/2019 |
| ES15 | 101496558 | 109 | 22.5 | 2,452.5 | 12/8/2019 |
| ES16 | 101496558 | 110 | 22.5 | 2,475.0 | 12/8/2019 |
| ES17 | 101496559 | 111 | 22.5 | 2,497.5 | 12/8/2019 |
| ES18 | 101496559 | 122 | 22.5 | 2,745.0 | 12/8/2019 |
| ES19 | 101496559 | 122 | 22.5 | 2,745.0 | 12/8/2019 |
| ES20 | 101496559 | 128 | 22.5 | 2,880.0 | 12/13/2019 |
| ES21 | 101496559 | 100 | 22.5 | 2,250.0 | 12/13/2019 |
| ES22 | 101496554 | 25 | 22.5 | 562.5 | 12/13/2019 |
| ES23 | 101496554 | 129 | 22.5 | 2,902.5 | 12/13/2019 |
| ES24 | 101496579 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES25 | 101496579 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES26 | 101496579 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES27 | 101496579 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES28 | 101496574 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES29 | 101496574 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES30 | 101496574 | 133 | 22.5 | 2,992.5 | 12/13/2019 |
| ES31 | 101496574 | 124 | 22.5 | 2,790.0 | 12/13/2019 |
| ES32 | 101496574 | 12 | 22.5 | 270.0 | 12/13/2019 |
| ES33 | 101496574 | 139 | 22.5 | 3,127.5 | 12/16/2019 |
| ES34 | 101496574 | 139 | 22.5 | 3,127.5 | 12/16/2019 |
| ES35 | 101496574 | 140 | 22.5 | 3,150.0 | 12/16/2019 |
| ES36 | 101496574 | 88 | 22.5 | 1,980.0 | 12/16/2019 |
| ES37 | 101496582 | 52 | 22.5 | 1,170.0 | 12/16/2019 |
| ES38 | 101496582 | 139 | 22.5 | 3,127.5 | 12/16/2019 |
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| **TOTAL LINER PLACED ($FT^2$):** | | | | 68,647.5 | |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**DEPLOYMENT LOCATION:** Secondary FML, West, Floor, Smooth
**MONITOR:** Don Gray

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| F1 | 6-15418 | 220 | 22.5 | 4,950.0 | 12/5/2019 |
| F2 | 6-15418 | 220 | 22.5 | 4,950.0 | 12/5/2019 |
| F3A | 6-15418 | 86 | 22.5 | 1,935.0 | 12/5/2019 |
| F3 | 6-15400 | 161 | 22.5 | 3,622.5 | 12/5/2019 |
| F4 | 6-15400 | 248 | 22.5 | 5,580.0 | 12/5/2019 |
| F5 | 6-15400 | 119 | 22.5 | 2,677.5 | 12/5/2019 |
| F5A | 6-15431 | 130 | 22.5 | 2,925.0 | 12/5/2019 |
| F6 | 6-15431 | 247 | 22.5 | 5,557.5 | 12/5/2019 |
| F7 | 6-15431 | 33 | 22.5 | 742.5 | 12/5/2019 |
| F8 | 6-15431 | 33 | 22.5 | 742.5 | 12/5/2019 |
| F9 | 6-15431 | 76 | 22.5 | 1,710.0 | 12/5/2019 |
| F10 | 6-15402 | 171 | 22.5 | 3,847.5 | 12/5/2019 |
| F11 | 6-15402 | 248 | 22.5 | 5,580.0 | 12/5/2019 |
| F12 | 6-15402 | 102 | 22.5 | 2,295.0 | 12/5/2019 |
| F13 | 6-15402 | 147 | 22.5 | 3,307.5 | 12/5/2019 |
| F14 | 6-15422 | 243 | 22.5 | 5,467.5 | 12/5/2019 |
| F15 | 6-15422 | 117 | 22.5 | 2,632.5 | 12/5/2019 |
| F16 | 6-15404 | 128 | 22.5 | 2,880.0 | 12/6/2019 |
| F17 | 6-15404 | 246 | 22.5 | 5,535.0 | 12/6/2019 |
| F18 | 6-15404 | 141 | 22.5 | 3,172.5 | 12/6/2019 |
| F19 | 6-15405 | 102 | 22.5 | 2,295.0 | 12/6/2019 |
| F20 | 6-15405 | 245 | 22.5 | 5,512.5 | 12/6/2019 |
| F21 | 6-15405 | 171 | 22.5 | 3,847.5 | 12/6/2019 |
| F22 | 6-15410 | 75 | 22.5 | 1,687.5 | 12/6/2019 |
| F23 | 6-15410 | 246 | 22.5 | 5,535.0 | 12/6/2019 |
| F24 | 6-15410 | 206 | 22.5 | 4,635.0 | 12/6/2019 |
| F25 | 6-15417 | 42 | 22.5 | 945.0 | 12/6/2019 |
| F26 | 6-15417 | 190 | 22.5 | 4,275.0 | 12/6/2019 |
| F27 | 6-15917 | 239 | 22.5 | 5,377.5 | 12/6/2019 |
| F28 | 6-15413 | 10 | 22.5 | 225.0 | 12/6/2019 |
| F29 | 6-15413 | 249 | 22.5 | 5,602.5 | 12/6/2019 |
| F30 | 6-15413 | 249 | 22.5 | 5,602.5 | 12/6/2019 |
| F31 | 6-15415 | 249 | 22.5 | 5,602.5 | 12/6/2019 |
| F32 | 6-15415 | 246 | 22.5 | 5,535.0 | 12/6/2019 |
| F33 | 6-15449 | 247 | 22.5 | 5,557.5 | 12/6/2019 |
| F34 | 6-15449 | 247 | 22.5 | 5,557.5 | 12/6/2019 |
| F35 | 6-15449 | 34 | 22.5 | 765.0 | 12/6/2019 |
| F36 | 6-15437 | 213 | 22.5 | 4,792.5 | 12/6/2019 |
| F37 | 6-15437 | 243 | 22.5 | 5,467.5 | 12/6/2019 |
| F38 | 6-15437 | 247 | 22.5 | 5,557.5 | 12/6/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 154,485.0 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**DEPLOYMENT LOCATION:** Secondary FML, East & West Side, Floor, Smooth
**MONITOR:** Don Gray, Braden Belliveau

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| F39 | 6-15437 | 73 | 22.5 | 1,642.5 | 12/6/2019 |
| F40 | 6-15437 | 67 | 22.5 | 1,507.5 | 12/6/2019 |
| F41 | 6-15415 | 32 | 22.5 | 720.0 | 12/6/2019 |
| F42 | 6-15415 | 202 | 22.5 | 4,545.0 | 12/6/2019 |
| F43 | 6-15412 | 210 | 22.5 | 4,725.0 | 12/7/2019 |
| F44 | 6-15412 | 49 | 22.5 | 1,102.5 | 12/7/2019 |
| F45 | 6-15429 | 162 | 22.5 | 3,645.0 | 12/7/2019 |
| F46 | 6-15429 | 55 | 22.5 | 1,237.5 | 12/7/2019 |
| F47 | 6-15429 | 152 | 22.5 | 3,420.0 | 12/7/2019 |
| F48 | 6-15426 | 55 | 22.5 | 1,237.5 | 12/7/2019 |
| F49 | 6-15426 | 207 | 22.5 | 4,657.5 | 12/7/2019 |
| F50 | 6-15426 | 208 | 22.5 | 4,680.0 | 12/7/2019 |
| F51 | 6-15426 | 55 | 22.5 | 1,237.5 | 12/8/2019 |
| F52 | 6-15451 | 144 | 22.5 | 3,240.0 | 12/8/2019 |
| F53 | 6-15451 | 199 | 22.5 | 4,477.5 | 12/8/2019 |
| F54 | 6-15451 | 167 | 22.5 | 3,757.5 | 12/8/2019 |
| F55 | 6-15408 | 27 | 22.5 | 607.5 | 12/8/2019 |
| F56 | 6-15408 | 190 | 22.5 | 4,275.0 | 12/8/2019 |
| F57 | 6-15408 | 187 | 22.5 | 4,207.5 | 12/8/2019 |
| F58 | 6-15432 | 184 | 22.5 | 4,140.0 | 12/13/19 |
| F59 | 6-15432 | 184 | 22.5 | 4,140.0 | 12/13/19 |
| F60 | 6-15432 | 141 | 22.5 | 3,172.5 | 12/13/19 |
| F61 | 6-15406 | 42 | 22.5 | 945.0 | 12/13/19 |
| F62 | 6-15406 | 180 | 22.5 | 4,050.0 | 12/13/19 |
| F63 | 6-15406 | 180 | 22.5 | 4,050.0 | 12/13/19 |
| F64 | 6-15441 | 180 | 22.5 | 4,050.0 | 12/13/19 |
| F65 | 6-15441 | 178 | 22.5 | 4,005.0 | 12/13/19 |
| F66 | 6-15441 | 154 | 22.5 | 3,465.0 | 12/13/19 |
| F67 | 6-15440 | 23 | 22.5 | 517.5 | 12/13/19 |
| F68 | 6-15440 | 175 | 22.5 | 3,937.5 | 12/13/19 |
| F69 | 6-15440 | 175 | 22.5 | 3,937.5 | 12/13/19 |
| F70 | 6-15440 | 145 | 22.5 | 3,262.5 | 12/13/19 |
| F71 | 6-15403 | 30 | 22.5 | 675.0 | 12/16/2019 |
| F72 | 6-15403 | 173 | 22.5 | 3,892.5 | 12/16/2019 |
| F73 | 6-15403 | 172 | 22.5 | 3,870.0 | 12/16/2019 |
| F74 | 6-15403 | 144 | 22.5 | 3,240.0 | 12/16/2019 |
| F75 | 6-15399 | 28 | 22.5 | 630.0 | 12/16/2019 |
| F76 | 6-15399 | 171 | 22.5 | 3,847.5 | 12/16/2019 |
| F77 | 6-15399 | 62 | 22.5 | 1,395.0 | 12/16/2019 |
| F78 | 6-15399 | 62 | 22.5 | 1,395.0 | 12/16/2019 |
| F79 | 6-15399 | 49 | 22.5 | 1,102.5 | 12/16/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 118,642.5 | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.8. Secondary and Primary FML Pre-Weld Qualification Test Logs

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML TRIAL SEAMING TEST LOG

**PROJECT NAME:** OWL Landfill
**OWNER:** Oilfield Well Logistics
**PROJECT LOCATION:** Lea County, New Mexico
**PROJECT NUMBER:** 1056019
**CONTRACTOR:** Mustang Extreme
**SHEET NUMBER:** 1

**PROJECT SPECIFICATIONS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | TIME | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | FIELD TEST RESULTS | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | PEEL #1 | PEEL #2 | PEEL #3 | SHEAR | |
| 12/3/2019 | 0900 | DG | AM | 6 | 860 | 4 | | | 121/106 | 121/119 | 131/126 | 160/144 | |
| 12/3/2019 | 0902 | DG | BX | 324 | 860 | 6.5 | | | 118/118 | 99/114 | 103/103 | 154/157 | |
| 12/3/2019 | 1100 | DG | PX | 11 | 860 | 4.5 | | | 97/122 | 118/109 | 127/126 | 134/149 | |
| 12/5/2019 | 0941 | DG | PX | 11 | 860 | 4.0 | | | 104/112 | 108/133 | 123/111 | 161/163 | |
| 12/5/2019 | 0940 | DG | BX | 324 | 860 | 6.0 | | | 110/126 | 115/111 | 122/114 | 173/164 | |
| 12/5/2019 | 0940 | DG | AM | 6 | 550 | 3.5 | | | 116/124 | 130/132 | 133/129 | 174/159 | |
| 12/5/2019 | 1001 | DG | DK | 261 | | | 550 | 550 | 74 | 95 | 66 | 126/122 | |
| 12/5/2019 | 1017 | DG | DK | 261 | | | 550 | 550 | 122 | 74 | 135 | 126/122 | |
| 12/5/2019 | 1021 | DG | DK | 261 | | | 550 | 550 | 102 | 102 | 111 | 156/137 | |
| 12/5/2019 | 1300 | DG | PX | 11 | 550 | 4 | | | 115/113 | 120/123 | 88/125 | 132/148 | |
| 12/5/2019 | 1305 | DG | AM | 6 | 860 | 3.5 | | | 97/119 | 95/94 | 126/122 | 131/136 | |
| 12/5/2019 | 1315 | DG | BX | 324 | 860 | 6.0 | | | 130/116 | 131/100 | 116/117 | 145/135 | |
| 12/6/2019 | 0650 | DG | AM | 6 | 860 | 3.5 | | | 135/144 | 120/117 | 120/140 | 163/148 | |
| 12/6/2019 | 0700 | DG | PX | 11 | 860 | 4 | | | 122/150 | 105/120 | 121/154 | 162/166 | |
| 12/6/2019 | 0702 | DG | BX | 324 | 860 | 6 | | | 112/124 | 122/119 | 129/124 | 192/184 | |
| 12/6/2019 | 0658 | DG | DK | 261 | 860 | 5.5 | | | 105 | 101 | 103 | 187/155 | |
| 12/6/2019 | 0658 | DG | DK | 261 | | | 550 | 550 | 90 | 104 | 112 | 174/159 | |
| 12/6/2019 | 0658 | DG | DK | 261 | | | 550 | 550 | 98 | 117 | 121 | 212/168 | |
| 12/6/2019 | 1320 | DG | BX | 324 | 860 | 6 | | | 110/95 | 130/104 | 97/117 | 149/141 | |
| 12/6/2019 | 1310 | DG | PX | 11 | 860 | 4.5 | | | 103/110 | 132/105 | 129/120 | 151/153 | |
| 12/6/2019 | 1305 | DG | AM | 6 | 860 | 3.5 | | | 117/122 | 142/134 | 116/116 | 152/149 | |
| 12/6/2019 | 0700 | DG | PX | 11 | 860 | 4.0 | | | 133/130 | 112/114 | 94/121 | 160/146 | |
| 12/6/2019 | 0700 | DG | PX | 11 | 860 | 4.0 | | | 111/126 | 123/135 | 112/127 | 153/158 | |
| 12/7/2019 | 0705 | DG | BX | 6 | 860 | 4.5 | | | 126/127 | 131/124 | 133/105 | 157/155 | |
| 12/7/2019 | 0705 | DG | BX | 324 | 555 | 4.5 | | | 104/133 | 119/121 | 124/113 | 152/183 | |
| 12/7/2019 | 0658 | DG | DK | 261 | | | 550 | 550 | 94 | 77 | 118 | 179/155 | |
| 12/7/2019 | 1305 | DG | PX | 11 | 860 | 4.0 | | | 105/132 | 111/116 | 110/124 | 134/154 | |
| 12/7/2019 | 1305 | DG | PX | 11 | 860 | 4.0 | | | 122/126 | 118/123 | 124/118 | 166/155 | |
| 12/7/2019 | 1305 | DG | BX | 324 | 860 | 4.5 | | | 107/117 | 116/111 | 143/124 | 148/154 | |
| 12/7/2019 | 1307 | DG | BX | 324 | 860 | 4.5 | | | 98/112 | 122/123 | 117/120 | 149/153 | |

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# PRE WELD TESTING

**PROJECT NAME:** OWL Landfill
**OWNER:** Oilfield Well Logistics
**PROJECT LOCATION:** Lea County, New Mexico
**PROJECT NUMBER:** 1056019
**CONTRACTOR:** Mustang Extreme
**SHEET NUMBER:** 2

**PROJECT SPECIFICATIONS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | TIME | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | FIELD TEST RESULTS | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | PEEL #1 | PEEL #2 | PEEL #3 | SHEAR | |
| 12/7/2019 | 1450 | DG | SP | 6 | 860 | 3.0 | | | 116/137 | 131/137 | 130/129 | 153/172 | |
| 12/8/2019 | 0700 | DG | PX | 11 | 860 | 4.0 | | | 135/129 | 141/143 | 128/130 | 157/171 | |
| 12/8/2019 | 0700 | DG | PX | 11 | 860 | 4.0 | | | 108/149 | 146/138 | 108/125 | 134/168 | |
| 12/8/2019 | 0650 | DG | BX | 324 | 860 | 4.5 | | | 135/128 | 126/141 | 106/135 | 198/171 | |
| 12/8/2019 | 0650 | DG | BX | 324 | 860 | 4.5 | | | 133/148 | 120/142 | 111/131 | 172/178 | |
| 12/8/2019 | 0650 | DG | SP | 6 | 860 | 3.0 | | | 128/123 | 117/150 | 135/119 | 171/168 | |
| 12/8/2019 | 0650 | DG | SP | 6 | 860 | 3.0 | | | 113/135 | 115/151 | 121/135 | 171/168 | |
| 12/10/2019 | 1450 | DG | DK | 261 | | | 550 | 550 | 130 | 103 | 96 | 175/169 | |
| 12/10/2019 | 1450 | DG | DK | 261 | | | 550 | 550 | 123 | 120 | 121 | 170/171 | |
| 12/12/2019 | 1307 | DG | LI | 7 | | | 550 | 550 | 139 | 134 | 120 | 168/164 | |
| 12/12/2019 | 1400 | DG | DK | 261 | | | 550 | 500 | 131 | 108 | 140 | 147/154 | |
| 12/13/2019 | 1315 | DG | BX | 479 | 860 | 4 | | | 129/112 | 138/118 | 122/119 | 147/154 | |
| 12/13/2019 | 1300 | DG | PX | 11 | 860 | 3.6 | | | 110/144 | 135/126 | 124/135 | 154/161 | |
| 12/13/2019 | 1305 | DG | PX | 11 | 860 | 3 | | | 125/135 | 123/121 | 130/122 | 160/170 | |
| 12/13/2019 | 1310 | DG | SP | 2 | 860 | 5.5 | | | 141/142 | 143/138 | 128/131 | 165/168 | |
| 12/13/2019 | 1323 | DG | DK | 261 | | | 550 | 550 | 121 | 128 | 130 | 155/164 | |
| 12/13/2019 | 1323 | DG | DK | 261 | | | 550 | 550 | 120 | 125 | 112 | 170/162 | |
| 12/14/2019 | 0700 | DG | BX | 479 | 860 | 4 | | | 149/143 | 142/132 | 144/143 | 177/174 | |
| 12/14/2019 | 0700 | DG | PX | 11 | 860 | 3.6 | | | 138/124 | 155/149 | 148/147 | 178/159 | |
| 12/14/2019 | 0803 | DG | DK | 261 | | | 550 | 550 | 121 | 132 | 143 | 178/159 | |
| 12/14/2019 | 0745 | DG | LI | 7 | | | 550 | 550 | 112 | 118 | 113 | 185/185 | |
| 12/14/2019 | 0925 | DG | SP | 2 | 860 | 3 | | | 142/137 | 113/146 | 141/125 | 158/172 | |
| 12/14/2019 | 0940 | DG | KK | 5 | 850 | 2 | | | 124/117 | 127/140 | 116/134 | 156/144 | |
| 12/16/2019 | 0705 | DG | BX | 263 | 860 | 4 | | | 142/158 | 153/139 | 155/151 | 169/177 | |
| 12/16/2019 | 1300 | DG | PX | 11 | 860 | 4 | | | 121/13 | 128/124 | 120/117 | 159/171 | |
| 12/16/2019 | 1305 | DG | BX | 263 | 860 | 4 | | | 140/144 | 132/141 | 140/138 | 165/178 | |
| 12/16/2019 | 1310 | DG | DK | 261 | 550 | 5.5 | 550 | 500 | 115 | 139 | 128 | 165/167 | |
| 12/16/2019 | 1415 | DG | LI | 401 | 500 | 5 | 550 | 500 | 124 | 120 | 121 | 145/159 | |
| 12/16/2019 | 0700 | DG | LI | 401 | 500 | 5 | 550 | 500 | 144 | 132 | 130 | 194/175 | |
| 12/17/2019 | 0730 | DG | KK | 24 | 500 | 5 | 550 | 500 | 117 | 127 | 146 | 168/160 | |

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# PRE WELD TESTING

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | TIME | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | FIELD TEST RESULTS | | | | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | PEEL #1 | PEEL #2 | PEEL #3 | SHEAR | |
| 12/17/2019 | 1305 | DG | LI | 401 | 500 | 5 | 550 | 500 | 124 | 140 | 145 | 170/165 | |
| 12/17/2019 | 1310 | DG | KK | 24 | 500 | 5 | 550 | 500 | 133 | 128 | 135 | 167/162 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | |

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# PRE WELD TESTING

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**PROJECT SPECIFICATIONS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | TIME | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | FIELD TEST RESULTS | | | | COMMNENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | PEEL #1 | PEEL #2 | PEEL #3 | SHEAR | |
| 12/7/2019 | 1305 | DG | PX | 11 | 860 | 4 | | | 105/132 | 111/116 | 110/124 | 134/154 | |
| 12/7/2019 | 1307 | DG | BX | 324 | 860 | 4.5 | | | 98/112 | 122/123 | 117/120 | 149/153 | |
| 12/10/2019 | 0819 | DG | PX | 11 | 860 | 3.6 | | | 112/124 | 149/126 | 122/127 | 160/164 | |
| 12/10/2019 | 0820 | DG | BX | 324 | 860 | 4 | | | 137/125 | 86/118 | 143/133 | 184/156 | |
| 12/10/2019 | 0930 | DG | DX | 6 | 860 | 3.5 | | | 138/132 | 140/132 | 137/141 | 178/159 | |
| 12/10/2019 | 1305 | DG | PX | 11 | 860 | 3.6 | | | 140/100 | 123/124 | 121/130 | 152/158 | |
| 12/10/2019 | 1305 | DG | BX | 324 | 860 | 4 | | | 130/105 | 142/123 | 127/124 | 162/154 | |
| 12/10/2019 | 1310 | DG | DX | 6 | 860 | 3.5 | | | 125/123 | 134/140 | 132/125 | 157/160 | |
| 12/11/2019 | 0717 | DG | PX | 11 | 860 | 3.6 | | | 119/152 | 129/172 | 126/130 | 164/159 | |
| 12/11/2019 | 0715 | DG | BX | 324 | 860 | 4 | | | 131/144 | 153/141 | 136/141 | 163/149 | |
| 12/11/2019 | 0720 | DG | DX | 6 | 860 | 3 | | | 133/152 | 155/128 | 138/158 | 180/171 | |
| 12/11/2019 | 0721 | DG | PX | 11 | 860 | 3.6 | | | 103/119 | 123/132 | 137/153 | 165/146 | |
| 12/11/2019 | 0725 | DG | BX | 324 | 860 | 4 | | | 125/124 | 116/127 | 140/126 | 164/181 | |
| 12/12/2019 | 0835 | DG | DX | 6 | 860 | 3 | | | 121/120 | 140/147 | 126/137 | 180/169 | |
| 12/12/2019 | 0840 | DG | PX | 11 | 860 | 3 | | | 123/126 | 144/142 | 135/130 | 168/165 | |
| 12/12/2019 | 0840 | DG | BX | 324 | 860 | 4.0 | | | 129/126 | 127/134 | 130/132 | 183/168 | |
| 12/12/2019 | 0900 | DG | DX | 6 | 860 | 2 | | | 127/111 | 133/132 | 144/108 | 183/167 | |
| 12/12/2019 | 1315 | DG | SP | 2 | 860 | 3 | | | 108/130 | 107/101 | 115/108 | 169/145 | |
| 12/12/2019 | 1319 | DG | PX | 11 | 860 | 4 | | | 130/156 | 124/132 | 133/110 | 149/151 | |
| 12/12/2019 | 1315 | DG | BX | 479 | 860 | 4 | | | 118/144 | 109/123 | 125/129 | 151/154 | |
| 12/13/2019 | 0700 | DG | BX | 479 | 860 | 4 | | | 125/156 | 123/153 | 140/143 | 191/171 | |
| 12/13/2019 | 0705 | DG | PX | 11 | 860 | 3.6 | | | 139/144 | 120/149 | 128/144 | 162/177 | |
| 12/13/2019 | 0712 | DG | DK | 261 | | | 550 | 550 | 130 | 120 | 124 | 183/172 | |
| 12/13/2019 | 0712 | DG | DK | 261 | | | 550 | 550 | 134 | 143 | 134 | 179/176 | |
| 12/13/2019 | 0712 | DG | DK | 261 | | | 550 | 550 | 123 | 130 | 132 | 165/170 | |
| 12/13/2019 | 0900 | DG | BX | 262 | | | 540 | 450 | 143 | 139 | 130 | 162/167 | |
| 12/14/2019 | 0720 | DG | DK | 261 | | | 550 | 550 | 110 | 129 | 122 | 158/161 | |
| 12/16/2019 | 0800 | DG | DK | 261 | | | 550 | 550 | 112 | 117 | 120 | 157/160 | |
| 12/19/2019 | 0705 | DG | BX | 479 | 860 | 4.0 | | | 153/154 | 143/133 | 144/150 | 186/183 | |
| 12/19/2019 | 0700 | DG | AM | 6 | 860 | 3.0 | | | 154/167 | 150/147 | 158/157 | 191/171 | |

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# PRE WELD TESTING

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 5

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | TIME | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | FIELD TEST RESULTS | | | | COMMNENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | PEEL #1 | PEEL #2 | PEEL #3 | SHEAR | |
| 12/19/2019 | 0720 | DG | PX | 324 | 860 | 4.5 | | | 123/125 | 134/124 | 139/117 | 205/174 | |
| 12/19/2019 | 0722 | DG | DX | 2 | 860 | 3.0 | | | 140/128 | 128/151 | 131/132 | 174/171 | |
| 12/19/2019 | 0722 | DG | DK | 261 | | | 550 | 550 | 126 | 147 | 115 | 171/175 | |
| 12/19/2019 | 0722 | DG | DK | 261 | | | 550 | 550 | 142 | 122 | 124 | 185/180 | |
| 12/19/2019 | 0722 | DG | DK | 261 | | | 550 | 550 | 107 | 101 | 108 | 179/177 | |
| 12/19/2019 | 1300 | DG | BX | 479 | 860 | 4 | | | 120/126 | 120/114 | 120/115 | 159/161 | |
| 12/19/2019 | 1302 | DG | PX | 324 | 860 | 4.5 | | | 132/117 | 132/129 | 119/118 | 163/160 | |
| 12/19/2019 | 1300 | DG | DX | 2 | 860 | 3 | | | 124/123 | 116/141 | 124/126 | 168/159 | |
| 12/19/2019 | 1320 | DG | AM | 6 | 860 | 3 | | | 151/129 | 136/125 | 123/130 | 168/170 | |
| 12/20/2019 | 0700 | DG | AM | 6 | 860 | 2 | | | 130/123 | 139/132 | 160/146 | 161/175 | |
| 12/20/2019 | 0716 | DG | PX | 324 | 860 | 4 | | | 132/147 | 123/146 | 136/143 | 202/205 | |
| 12/20/2019 | 0712 | DG | BX | 479 | 860 | 3.2 | | | 153/164 | 131/127 | 137/102 | 196/175 | |
| 12/20/2019 | 0715 | DG | DX | 2 | 860 | 3 | | | 164/144 | 115/137 | 147/141 | 177/174 | |
| 12/20/2019 | 0717 | DG | BX | 263 | | | 550 | 550 | 151 | 164 | 150 | 165/154 | |
| 12/20/2019 | 1120 | DG | KS | 401 | | | 500 | 450 | 105 | 104 | 114 | 160/162 | |
| 12/20/2019 | 1300 | DG | DX | 2 | 860 | 3 | | | 127/127 | 126/136 | 133/120 | 159/163 | |
| 12/20/2019 | 1315 | DG | BX | 263 | 860 | 3 | | | 133/146 | 141/132 | 122/130 | 146/163 | |
| 12/20/2019 | 1305 | DG | PX | 401 | 860 | 4.0 | | | 130/122 | 125/119 | 156/127 | 167/195 | |
| 12/20/2019 | 1320 | DG | KS | 401 | | | 500 | 450 | 113 | 104 | 110 | 144/147 | |
| 12/20/2019 | 1310 | DG | AM | 479 | 860 | 2.3 | | | 145/138 | 118/104 | 135/137 | 167/158 | |
| 12/20/2019 | 1318 | DG | DK | 261 | | | 550 | 550 | 114 | 113 | 104 | 157/160 | |
| 12/20/2019 | 1320 | DG | DK | 261 | | | 550 | 550 | 118 | 126 | 111 | 154/158 | |
| 12/20/2019 | 1322 | DG | DK | 261 | | | 550 | 550 | 126 | 131 | 118 | 156/142 | |
| 12/21/2019 | 0700 | DG | AM | 6 | 800 | 2.3 | | | 166/143 | 151/129 | 149/141 | 174/186 | |
| 12/21/2019 | 0700 | DG | BX | 479 | 860 | 3 | | | 139/154 | 165/155 | 165/149 | 168/176 | |
| 12/21/2019 | 0710 | DG | PX | 324 | 860 | 4.6 | | | 166/145 | 144/170 | 144/158 | 173/170 | |
| 12/21/2019 | 0710 | DG | KS | 401 | | | 500 | 450 | 122 | 116 | 117 | 182/196 | |
| 12/21/2019 | 0712 | DG | KS | 401 | | | 500 | 450 | 126 | 123 | 128 | 180/195 | |
| 12/21/2019 | 0710 | DG | DK | 261 | | | 550 | 550 | 131 | 142 | 129 | 149/148 | |
| 12/21/2019 | 0712 | DG | DK | 261 | | | 550 | 550 | 112 | 147 | 140 | 187/172 | |

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# PRE WELD TESTING

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 6

**PROJECT SPECIFICATIONS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | TIME | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | FIELD TEST RESULTS | | | | COMMNENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | PEEL #1 | PEEL #2 | PEEL #3 | SHEAR | |
| 12/21/2019 | 0714 | DG | DK | 261 | | | 500 | 550 | 125 | 126 | 142 | 189/187 | |
| 12/21/2019 | 1320 | DG | KS | 401 | | | 500 | 450 | 128 | 149 | 110 | 149/148 | |
| 12/21/2019 | 1322 | DG | KS | 401 | | | 500 | 450 | 111 | 120 | 109 | 150/144 | |
| 12/21/2019 | 1335 | DG | BX | 263 | | | 550 | 550 | 119 | 125 | 105 | 139/130 | |
| 12/21/2019 | 1337 | DG | BX | 263 | | | 550 | 550 | 101 | 100 | 106 | 146/153 | |
| 12/22/2019 | 0701 | DG | DK | 261 | | | 550 | 550 | 111 | 135 | 109 | 175/171 | |
| 12/22/2019 | 0701 | DG | DK | 261 | | | 550 | 550 | 118 | 107 | 111 | 170/174 | |
| 12/22/2019 | 0705 | DG | BX | 263 | | | 550 | 550 | 108 | 112 | 125 | 169/162 | |
| 12/22/2019 | 0705 | DG | BX | 263 | | | 550 | 550 | 127 | 95 | 130 | 165/170 | |
| 1/2/2020 | 0805 | DG | BX | 263 | | | 530 | 500 | 118 | 122 | 120 | 116/119 | |
| 1/2/2020 | 0810 | DG | AM | 261 | | | 530 | 500 | 117 | 113 | 111 | 115/118 | |
| 1/2/2020 | 0815 | DG | ER | 261 | | | 530 | 500 | 93 | 108 | 119 | 118/117 | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.9. Secondary FML Seaming Log

GORDON ENVIRONMENTAL PSC

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**SEAMING LOCATION:** Secondary, East Side, Floor & North Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/3/2019 | NS1-NS2 | 115 | 0940 | AM | 6 | 860 | 4.0 | | DG |
| 2 | 12/3/2019 | NS2-NS3 | 116 | 1002 | AM | 6 | 860 | 4.0 | SDT-1 | DG |
| 3 | 12/3/2019 | NS3-NS4 | 116 | 1005 | BX | 324 | 860 | 6.5 | | DG |
| 4 | 12/3/2019 | NS4-NS5A | 118 | 1035 | BX | 324 | 860 | 6.5 | | DG |
| 5 | 12/3/2019 | NS5-NS5A | 22.3 | 1020 | BX | 324 | 860 | 6.5 | | DG |
| 6 | 12/3/2019 | NS5A-NS6 | 118 | 1034 | AM | 6 | 860 | 4.0 | | DG |
| 7 | 12/3/2019 | NS6-NS7 | 126 | 1050 | BX | 324 | 860 | 6.5 | SDT-2 | DG |
| 8 | 12/3/2019 | NS7-NS8 | 127 | 1050 | AM | 6 | 860 | 4.0 | | DG |
| 9 | 12/3/2019 | NS8-NS9A | 129 | 1220 | AM | 6 | 860 | 4.0 | | DG |
| 10 | 12/3/2019 | NS9-NS9A | 22.3 | 1209 | AM | 6 | 860 | 4.0 | | DG |
| 11 | 12/3/2019 | NS9A-NS10 | 130 | 1255 | PX | 11 | 860 | 4.5 | SDT-3 | DG |
| 12 | 12/3/2019 | NS1/NS10-F1 | 225 | 1310 | AM | 6 | 860 | 4.0 | | DG |
| 13 | 12/3/2019 | F1-F2 | 220 | 1307 | PX | 11 | 860 | 4.5 | | DG |
| 14 | 12/5/2019 | NS1-NS11 | 22.3 | 1130 | AM | 6 | 860 | 3.5 | | BSB |
| 15 | 12/5/2019 | NS11-NS12A/NS12 | 130 | 1101 | PX | 11 | 860 | 4.0 | | BSB |
| 16 | 12/5/2019 | NS12-NS12A | 22.3 | 1134 | PX | 11 | 860 | 4.0 | | BSB |
| 17 | 12/5/2019 | NS11/12A-F8 | 35 | 1250 | AM | 6 | 860 | 3.5 | | BSB |
| 18 | 12/5/2019 | F8-F7 | 33 | 1151 | PX | 11 | 860 | 4.0 | | BSB |
| 19 | 12/5/2019 | F2/F7-F3/F3A | 248 | 1150 | AM | 6 | 860 | 3.5 | SDT-4 | BSB |
| 20 | 12/5/2019 | F5-F5A | 22.3 | 1053 | AM | 6 | 860 | 3.5 | | BSB |
| 21 | 12/5/2019 | F3-F3A | 22.3 | 1005 | BX | 324 | 860 | 6.0 | | BSB |
| 22 | 12/5/2019 | F3A/F3-F4 | 248 | 1020 | BX | 324 | 860 | 6.0 | SDT-5 | BSB |
| 23 | 12/5/2019 | F4-F5/F5A | 230 | 1042 | PX | 11 | 860 | 4.0 | | BSB |
| 24 | 12/5/2019 | F5A/F5-F6 | 230 | 1105 | BX | 324 | 860 | 6.0 | SDT-6 | BSB |
| 25 | 12/5/2019 | F6-F9/F10 | 230 | 1325 | BX | 324 | 860 | 6.0 | | BSB |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**SEAMING LOCATION:** Secondary, East Side, Floor

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 26 | 12/5/2019 | F11-F10/F9 | 248 | 1310 | PX | 11 | 860 | 4.0 | SDT-7 | BSB |
| 27 | 12/5/2019 | F11-F12/F13 | 248 | 1407 | PX | 11 | 860 | 4.0 | | BSB |
| 28 | 12/5/2019 | F12-F13 | 22.3 | 1415 | BX | 324 | 860 | 6.0 | | BSB |
| 29 | 12/5/2019 | F12/F13-F14 | 243 | 1425 | AM | 6 | 860 | 3.5 | SDT-8 | BSB |
| 30 | 12/6/2019 | F14-F15/F16 | 243 | 0720 | AM | 6 | 860 | 3.0 | | BSB |
| 31 | 12/6/2019 | F15-F16 | 22.3 | 0730 | BX | 324 | 860 | 5.5 | | BSB |
| 32 | 12/6/2019 | F15/F16-F17 | 246 | 0740 | PX | 11 | 860 | 4.0 | SDT-9 | BSB |
| 33 | 12/6/2019 | F17-F18/F19 | 246 | 0745 | BX | 324 | 860 | 5.5 | SDT-10 | BSB |
| 34 | 12/6/2019 | F18-F19 | 22.3 | 0805 | AM | 6 | 860 | 3.0 | | BSB |
| 35 | 12/6/2019 | F18/F19-F20 | 245 | 0810 | AM | 6 | 860 | 3.0 | SDT-11 | BSB |
| 36 | 12/6/2019 | F20-F21/F22 | 245 | 0825 | PX | 11 | 860 | 4.0 | | BSB |
| 37 | 12/6/2019 | F21-F22 | 22.3 | 0835 | BX | 324 | 860 | 5.5 | | BSB |
| 38 | 12/6/2019 | F21/F22-F23 | 246 | 0840 | BX | 324 | 860 | 5.5 | | BSB |
| 39 | 12/6/2019 | F23-F24/F25 | 246 | 0900 | AM | 6 | 860 | 3.0 | SDT-12 | BSB |
| 40 | 12/6/2019 | F24-F25 | 22.3 | 0906 | PX | 11 | 860 | 4.0 | | BSB |
| 41 | 12/6/2019 | F24/F25-F26 | 248 | 0920 | PX | 11 | 860 | 4.0 | | BSB |
| 42 | 12/6/2019 | F26-F27/F28 | 239 | 0935 | BX | 324 | 860 | 5.5 | | BSB |
| 43 | 12/6/2019 | F27-F28 | 22.3 | 1010 | BX | 324 | 860 | 5.5 | | BSB |
| 44 | 12/6/2019 | F27/F28-F29 | 249 | 1012 | PX | 11 | 860 | 4.0 | SDT-13 | BSB |
| 45 | 12/6/2019 | F29-F30 | 249 | 1030 | BX | 324 | 860 | 5.5 | SDT-14 | BSB |
| 46 | 12/6/2019 | F30-F31 | 249 | 1104 | PX | 11 | 860 | 4.0 | | BSB |
| 47 | 12/6/2019 | F31-F32 | 246 | 1110 | BX | 324 | 860 | 5.5 | SDT-15 | BSB |
| 48 | 12/6/2019 | F32-F33 | 247 | 1336 | AM | 6 | 860 | 3.0 | SDT-16 | BSB |
| 49 | 12/6/2019 | F33-F34 | 247 | 1325 | BX | 324 | 860 | 5.5 | | BSB |
| 50 | 12/6/2019 | F34-F35/F36 | 247 | 1337 | PX | 11 | 860 | 4.5 | SDT-17 | BSB |

GORDON ENVIRONMENTAL PSC

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**SEAMING LOCATION:** Secondary, West Side, Floor & North Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 12/6/2019 | F35-F36 | 22.3 | 1352 | PX | 11 | 860 | 4.5 | | BSB |
| 52 | 12/6/2019 | F35/F36-F37 | 243 | 1413 | AM | 6 | 860 | 3.0 | SDT-18 | BSB |
| 53 | 12/6/2019 | F37-F38/F39/F40/F41 | 44 | 1415 | BX | 324 | 860 | 5.0 | | BSB |
| 54 | 12/6/2019 | F41-F40 | 22.3 | 1440 | BX | 324 | 860 | 5.0 | | BSB |
| 55 | 12/6/2019 | F40-F39 | 22.3 | 1435 | BX | 324 | 860 | 5.0 | | BSB |
| 56 | 12/6/2019 | F39-F38 | 22.3 | 1425 | BX | 324 | 860 | 5.0 | | BSB |
| 57 | 12/6/2019 | NS13-NS14 | 126 | 1457 | PX | 11 | 860 | 4.0 | | BSB |
| 58 | 12/6/2019 | NS14-NS15 | 127 | 1503 | AM | 6 | 860 | 3.0 | SDT-19 | BSB |
| 59 | 12/6/2019 | NS15-NS16 | 129 | 1517 | BX | 324 | 860 | 5.5 | | BSB |
| 60 | 12/6/2019 | NS16-NS17 | 129 | 1522 | PX | 11 | 860 | 4.5 | SDT-20 | BSB |
| 61 | 12/6/2019 | NS17-NS18 | 130 | 1528 | AM | 6 | 860 | 3.0 | | BSB |
| 62 | 12/6/2019 | NS18-NS19 | 130 | 1540 | BX | 324 | 860 | 5.5 | SDT-21 | BSB |
| 63 | 12/7/2019 | NS19-NS20 | 130 | 0836 | PX | 11 | 860 | 4.0 | | BSB |
| 64 | 12/7/2019 | NS20-NS21 | 130 | 0840 | BX | 324 | 860 | 4.5 | | BSB |
| 65 | 12/7/2019 | NS21-NS22 | 125 | 0856 | PX | 11 | 860 | 4.0 | | BSB |
| 66 | 12/7/2019 | NS22-NS23 | 105 | 0910 | BX | 324 | 860 | 5.0 | | BSB |
| 67 | 12/7/2019 | NS23-NS24 | 87 | 0914 | PX | 11 | 860 | 4.0 | | BSB |
| 68 | 12/7/2019 | NS24/NS25-ES1/ES2/ES3 | 45 | 0950 | BX | 324 | 860 | 4.5 | | BSB |
| 69 | 12/7/2019 | NS21/NS22/NS23-ES4/ES5/ES6 | 67.5 | 1030 | BX | 324 | 860 | 4.0 | | BSB |
| 70 | 12/7/2019 | NS24-NS25/ES1 | 12 | 0923 | BX | 324 | 860 | 4.0 | | BSB |
| 71 | 12/7/2019 | ES1-ES2 | 12 | 0940 | BX | 324 | 860 | 4.5 | | BSB |
| 72 | 12/7/2019 | ES2-ES3 | 32 | 0927 | PX | 11 | 860 | 4.0 | | BSB |
| 73 | 12/7/2019 | ES3-ES4 | 53 | 0958 | PX | 11 | 860 | 4.0 | | BSB |
| 74 | 12/7/2019 | ES4-ES5 | 73 | 1013 | PX | 11 | 860 | 4.0 | SDT-22 | BSB |
| 75 | 12/7/2019 | ES5-ES6 | 101 | 1024 | PX | 11 | 860 | 4.0 | | BSB |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**SEAMING LOCATION:** Secondary, East Side, Floor & East Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 76 | 12/7/2019 | ES6-ES7A | 119 | 1115 | PX | 11 | 860 | 4.0 | | BSB |
| 77 | 12/7/2019 | ES7-ES7A | 22.3 | 1137 | PX | 11 | 860 | 4.0 | | BSB |
| 78 | 12/7/2019 | ES7A/ES7-ES8 | 105 | 1130 | BX | 324 | 860 | 4.5 | SDT-23 | BSB |
| 79 | 12/7/2019 | ES8-ES9 | 112 | 1143 | PX | 11 | 860 | 4.0 | | BSB |
| 80 | 12/7/2019 | ES9-ES10 | 112 | 1320 | PX | 11 | 860 | 4.0 | | BSB |
| 81 | 12/7/2019 | ES10-ES11 | 112 | 1320 | BX | 324 | 860 | 4.5 | | BSB |
| 82 | 12/7/2019 | ES11-ES12/ES13 | 112 | 1520 | PX | 11 | 860 | 4.0 | SDT-24 | BSB |
| 83 | 12/7/2019 | ES12-ES13 | 22.3 | 1518 | PX | 11 | 860 | 4.0 | | BSB |
| 84 | 12/7/2019 | ES12/ES13-ES14 | 110 | 1535 | PX | 11 | 860 | 4.0 | | BSB |
| 85 | 12/7/2019 | ES7A/NS21-F42 | 22.3 | 1349 | PX | 11 | 860 | 4.0 | | BSB |
| 86 | 12/7/2019 | F42-F43 | 210 | 1355 | BX | 324 | 860 | 4.5 | SDT-25 | BSB |
| 87 | 12/7/2019 | F43/F44-F45 | 210 | 1430 | BX | 324 | 860 | 4.5 | | BSB |
| 88 | 12/7/2019 | F46-F45/F44 | 162 | 1440 | BX | 324 | 860 | 4.5 | SDT-26 | BSB |
| 89 | 12/7/2019 | F45-F46 | 55 | 1435 | PX | 11 | 860 | 4.0 | | BSB |
| 90 | 12/7/2019 | F46-F47/F48 | 207 | 1500 | AM | 6 | 860 | 3.0 | SDT-27 | BSB |
| 91 | 12/7/2019 | F47-F48 | 22.3 | 1445 | AM | 6 | 860 | 3.0 | | BSB |
| 92 | 12/7/2019 | F47/F48-F49 | 207 | 1530 | AM | 6 | 860 | 3.0 | | BSB |
| 93 | 12/7/2019 | F49-F50 | 207 | 1525 | BX | 324 | 860 | 4.5 | | BSB |
| 94 | 12/7/2019 | ES14/ES13/ES12-F50/F49 | 44 | 1551 | PX | 11 | 860 | 4.0 | | BSB |
| 95 | 12/7/2019 | ES12/ES11/ES10/ES9/ES8-F47/F46/F45/F43 | 89 | 1516 | BX | 324 | 860 | 4.5 | | BSB |
| 96 | 12/8/2019 | ES14-ES15 | 110 | 0721 | PX | 11 | 860 | 4.0 | | BSB |
| 97 | 12/8/2019 | ES15-ES16 | 110 | 0730 | BX | 324 | 860 | 4.5 | | BSB |
| 98 | 12/8/2019 | ES16-ES17 | 110 | 0831 | PX | 11 | 860 | 4.0 | | BSB |
| 99 | 12/8/2019 | ES17-ES18 | 110 | 0840 | PX | 11 | 860 | 4.0 | | BSB |
| 100 | 12/8/2019 | ES18-ES19 | 110 | 0848 | BX | 324 | 860 | 4.5 | | BSB |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 5

**SEAMING LOCATION:** Secondary, East Side, Floor & East Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| **101** | 12/8/2019 | F51/F52-F50 | 208 | 0741 | PX | 11 | 860 | 4.0 | SDT-28 | BSB |
| **102** | 12/8/2019 | F51-F52 | 22.3 | 0751 | PX | 11 | 860 | 4.0 | | BSB |
| **103** | 12/8/2019 | F51/F52-F53 | 199 | 0805 | BX | 324 | 860 | 4.5 | | BSB |
| **104** | 12/8/2019 | ES15/ES16-F51/F53 | 44 | 0822 | PX | 11 | 860 | 4.0 | | BSB |
| **105** | 12/8/2019 | ES17-F54 | 22.3 | 0907 | PX | 11 | 860 | 4.0 | | BSB |
| **106** | 12/8/2019 | F53-F54/F55 | 199 | 0906 | BX | 324 | 860 | 4.5 | | BSB |
| **107** | 12/8/2019 | F54-F55 | 22.5 | 0934 | PX | 11 | 860 | 4.0 | SDT-29 | BSB |
| **108** | 12/8/2019 | F54/F55-F56 | 190 | 0912 | PX | 11 | 860 | 4.0 | | BSB |
| **109** | 12/8/2019 | F56-F57 | 190 | 0945 | BX | 324 | 860 | 4.5 | SDT-30 | BSB |
| **110** | 12/8/2019 | ES18/ES19-F56/F57 | 44 | 0949 | PX | 11 | 860 | 4.0 | | BSB |
| **111** | 12/13/2019 | ES30-ES31/ES32 | 133 | 1119 | PX | 11 | 860 | 3.6 | | BSB |
| **112** | 12/13/2019 | F64-F65 | 180 | 1445 | BX | 479 | 860 | 4.0 | SDT-33 | DG |
| **113** | 12/13/2019 | F65-F66/F67 | 178 | 1450 | SP | 2 | 860 | 3.0 | | DG |
| **114** | 12/13/2019 | F66-F67 | 22.3 | 1149 | PX | 11 | 860 | 4.0 | | DG |
| **115** | 12/13/2019 | F66/F67-F68 | 175 | 1457 | PX | 11 | 860 | 4.0 | | DG |
| **116** | 12/13/2019 | F68-F69 | 175 | 1510 | BX | 479 | 860 | 4.0 | SDT-34 | DG |
| **117** | 12/13/2019 | F69-F70/F71 | 175 | 1516 | SP | 2 | 860 | 2.0 | SDT-38 | DG |
| **118** | 12/13/2019 | F69/F68/F66/F65-ES30/ES29/ES28/ES27 | 90 | 1524 | PX | 11 | 860 | 3.6 | | DG |
| **119** | 12/13/2019 | F64/F60-ES26/ES20 | 90 | 1413 | PX | 11 | 860 | 3.6 | | DG |
| **120** | 12/13/2019 | F70-F71 | 22.3 | 1010 | SP | 2 | 860 | 3.0 | | DG |
| **121** | 12/13/2019 | F69-F70 (LAST 30') | 30 | 1014 | SP | 2 | 860 | 3.0 | | DG |
| **122** | 12/13/2019 | F69/F63A | 30 | 1025 | SP | 2 | 860 | 3.0 | | DG |
| **123** | 12/13/2019 | F68-F69 (30') | 30 | 0950 | SP | 2 | 860 | 3.0 | | DG |
| **124** | 12/13/2019 | F68-F67 | 30 | 1000 | KK | 5 | 860 | 2.0 | | DG |
| **125** | 12/13/2019 | F66-F67 | 22.3 | 0955 | KK | 5 | 860 | 2.0 | | DG |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 6

**SEAMING LOCATION:** Secondary, East Side, Floor & East Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 126 | 12/13/2019 | F65-F67 | 30 | 0957 | KK | 5 | 860 | 2.0 | | DG |
| 127 | 12/13/2019 | F65-F64 | 30 | 1002 | KK | 5 | 860 | 2.0 | | DG |
| 128 | 12/13/2019 | F64-F63A | 30 | 1010 | KK | 5 | 860 | 2.0 | | DG |
| 129 | 12/13/2019 | F63-63A | 22.3 | 0959 | PX | 11 | 860 | 3.6 | | DG |
| 130 | 12/13/2019 | F63A-F62 | 30 | 1018 | KK | 5 | 860 | 2.0 | SDT-32 | DG |
| 131 | 12/13/2019 | F62-F61/F60 | 30 | 0953 | PX | 11 | 860 | 3.6 | SDT-31 | DG |
| 132 | 12/13/2019 | F61-F59 | 40 | 0946 | PX | 11 | 860 | 3.6 | | DG |
| 133 | 12/13/2019 | F63-TIE (CENTER) | 22.3 | 1011 | PX | 11 | 860 | 3.6 | | DG |
| 134 | 12/13/2019 | F58- TIE | 22.3 | 0955 | BX | 479 | 860 | 4.0 | | DG |
| 135 | 12/13/2019 | F58-F59 | 30 | 0938 | PX | 938 | 860 | 3.6 | | DG |
| 136 | 12/16/2019 | ES31/ES32-ES33 | 139 | 0952 | BX | 479 | 860 | 3.6 | SDT-39 | BSB |
| 137 | 12/16/2019 | ES33-ES34 | 139 | 1000 | PX | 324 | 860 | 4.0 | | BSB |
| 138 | 12/16/2019 | ES34-ES35 | 139 | 1013 | BX | 479 | 860 | 3.6 | | BSB |
| 139 | 12/16/2019 | ES36-ES37 | 22.3 | 1026 | PX | 324 | 860 | 4.0 | | BSB |
| 140 | 12/16/2019 | ES35-ES36/ES37 | 140 | 1031 | PX | 324 | 860 | 4.0 | SDT-40 | BSB |
| 141 | 12/16/2019 | ES36/ES37-ES38 | 139 | 1040 | BX | 479 | 860 | 3.6 | | BSB |
| 142 | 12/16/2019 | F70/F71-F72 | 173 | 1059 | PX | 324 | 860 | 4.0 | | BSB |
| 143 | 12/16/2019 | F72-F73 | 173 | 1100 | BX | 479 | 860 | 4.0 | SDT-41 | BSB |
| 144 | 12/16/2019 | F73-F74/F75 | 172 | 1127 | BX | 479 | 860 | 4.0 | SDT-42 | BSB |
| 145 | 12/16/2019 | F74-F75 | 22.3 | 1122 | BX | 479 | 860 | 4.0 | | BSB |
| 146 | 12/16/2019 | F74/F75-F76 | 171 | 1310 | PX | 324 | 860 | 4.5 | SDT-43 | BSB |
| 147 | 12/16/2019 | F76-F77/F78/F79 | 171 | 1332 | BX | 479 | 860 | 4.0 | SDT-44 | BSB |
| 148 | 12/16/2019 | F77-F78 | 22.3 | 1320 | BX | 479 | 860 | 4.0 | | BSB |
| 149 | 12/16/2019 | F78-F79 | 22.3 | 1330 | BX | 479 | 860 | 4.0 | | BSB |
| 150 | 12/16/2019 | F72/F75-ES33/ES35 | 67 | 1132 | PX | 324 | 860 | 4.0 | | BSB |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 7

**SEAMING LOCATION:** Secondary, East Side, Floor & East Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 151 | 12/16/2019 | F76/F77-ES37/ES38 | 42 | 1354 | BX | 479 | 860 | 3.6 | | DG |
| 152 | 12/16/2019 | (F71-F79)-LT LINER | 110 | 1349 | PX | 324 | 860 | 4.0 | | DG |
| 153 | 12/17/2019 | ES20-ES21/ES22 | 128 | 0955 | BX | 479 | 860 | 3.6 | | DG |
| 154 | 12/17/2019 | ES21-ES22 | 22.3 | 0941 | BX | 479 | 860 | 3.6 | | DG |
| 155 | 12/17/2019 | ES22/ES21-ES23 | 129 | 0950 | PX | 11 | 860 | 4.0 | | DG |
| 156 | 12/17/2019 | ES23-ES24 | 129 | 1010 | BX | 24 | 860 | 3.6 | SDT-35 | DG |
| 157 | 12/17/2019 | ES24-ES25 | 133 | 1019 | PX | 11 | 860 | 4.0 | | DG |
| 158 | 12/17/2019 | ES25-ES26 | 133 | 1042 | BX | 479 | 860 | 3.6 | | DG |
| 159 | 12/17/2019 | ES26-ES27 | 133 | 1100 | PX | 11 | 860 | 4.0 | SDT-36 | DG |
| 160 | 12/17/2019 | ES27-ES28 | 133 | 1113 | BX | 479 | 860 | 3.6 | | DG |
| 161 | 12/17/2019 | ES28-ES29 | 133 | 1318 | PX | 11 | 860 | 4.0 | | DG |
| 162 | 12/17/2019 | ES29-ES30 | 133 | 1325 | BX | 479 | 860 | 3.6 | SDT-37 | DG |
| | | | | | | | | | | |
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# APPENDIX C

## Cell 1A Liner Installation Documentation

C.10. Secondary FML Seam Pressure Test Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**PRESSURE TEST LOCATION:** North Slope/Floor, West Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 1 | 12/3/2019 | NS1-NS2 | DX | 1018 | 1023 | 35 | 35 | DG | Pass |
| 2 | 12/3/2019 | NS2-NS3 | DX | 1040 | 1045 | 35 | 35 | DG | Pass |
| 3 | 12/3/2019 | NS3-NS4 | DX | 1030 | 1035 | 35 | 35 | DG | Pass |
| 4 | 12/3/2019 | NS4-NS5 | DX | 1155 | 1200 | 35 | 35 | DG | Pass |
| 5 | 12/3/2019 | NS5-NS6 | DX | 1203 | 1208 | 35 | 35 | DG | Pass |
| 6 | 12/3/2019 | NS7-NS8 | DX | 0902 | 0907 | 35 | 35 | DG | Pass |
| 7 | 12/3/2019 | NS8-NS9 | DX | 1256 | 1255 | 35 | 35 | DG | Pass |
| 8 | 12/3/2019 | NS8-NS9A | DX | 1244 | 1249 | 35 | 35 | DG | Pass |
| 9 | 12/3/2019 | NS9-NS9A | DX | 1250 | 1255 | 35 | 35 | DG | Pass |
| 10 | 12/3/2019 | NS10-NS9 | DX | 1305 | 1310 | 35 | 35 | DG | Pass |
| 11 | 12/3/2019 | NS10-NS9A | DX | 1258 | 1303 | 35 | 35 | DG | Pass |
| 12 | 12/3/2019 | NS5-NS5A | DX | 1055 | 1100 | 35 | 35 | DG | Pass |
| 13 | 12/3/2019 | NS5-NS6 | DX | 1215 | 1220 | 35 | 35 | DG | Pass |
| 14 | 12/3/2019 | NS4-NS5 | DX | 1055 | 1100 | 35 | 35 | DG | Pass |
| 15 | 12/5/2019 | NS6-NS7 | DX | 0902 | 0907 | 35 | 35 | DG | Pass |
| 16 | 12/5/2019 | NS1-NS11 | DX | 1333 | 1338 | 35 | 35 | DG | Pass |
| 17 | 12/5/2019 | NS11-NS12/12A | DX | 1358 | 1403 | 35 | 35 | DG | Pass |
| 18 | 12/5/2019 | NS1-F1 | DX | 0930 | 0935 | 35 | 35 | DG | Pass |
| 19 | 12/5/2019 | NS2/S3-F1 | DX | 0922 | 0927 | 35 | 35 | DG | Pass |
| 20 | 12/5/2019 | NS4-F1 | DX | 0914 | 0919 | 35 | 35 | DG | Pass |
| 21 | 12/5/2019 | NS5/S6-F1 | DX | 0908 | 0913 | 35 | 35 | DG | Pass |
| 22 | 12/5/2019 | NS7-F1 | DX | 0902 | 0907 | 35 | 35 | DG | Pass |
| 23 | 12/5/2019 | NS8-F1 | DX | 0855 | 0900 | 35 | 35 | DG | Pass |
| 24 | 12/5/2019 | NS9/NS10-F1 | DX | 1320 | 1325 | 35 | 35 | DG | Pass |
| 25 | 12/5/2019 | F1-F2 | DX | 0940 | 0945 | 35 | 35 | DG | Pass |
| 26 | 12/5/2019 | F2-F3A | DX | 1020 | 1025 | 35 | 35 | DG | Pass |
| 27 | 12/5/2019 | F3-F3A | DX | 1020 | 1025 | 35 | 35 | DG | Pass |
| 28 | 12/5/2019 | F2-F3 | DX | 1048 | 1053 | 35 | 35 | DG | Pass |
| 29 | 12/5/2019 | F8-NS11 | DX | 1333 | 1338 | 35 | 35 | DG | Pass |
| 30 | 12/5/2019 | F7-F8 | DX | 1326 | 1331 | 35 | 35 | DG | Pass |
| 31 | 12/5/2019 | F1-F8 | DX | 1326 | 1331 | 35 | 35 | DG | Pass |
| 32 | 12/5/2019 | F2-F7 | DX | 1320 | 1325 | 35 | 35 | DG | Pass |
| 33 | 12/5/2019 | F7-F3 | DX | 1320 | 1325 | 35 | 35 | DG | Pass |
| 34 | 12/5/2019 | F3-F4 | DX | 1055 | 1100 | 35 | 35 | DG | Pass |
| 35 | 12/5/2019 | F4-F5A | DX | 1128 | 1133 | 35 | 35 | DG | Pass |
| 36 | 12/5/2019 | F5-F5A | DX | 1128 | 1133 | 35 | 35 | DG | Pass |
| 37 | 12/5/2019 | F4-F5 | DX | 1136 | 1141 | 35 | 35 | DG | Pass |
| 38 | 12/5/2019 | F5-F6 | DX | 1144 | 1149 | 35 | 35 | DG | Pass |
| 39 | 12/5/2019 | F5A-F6 | DX | 1144 | 1149 | 35 | 35 | DG | Pass |
| 40 | 12/5/2019 | F5-F6 | DX | 1152 | 1157 | 35 | 35 | DG | Pass |
| 41 | 12/5/2019 | F6-F10 | DX | 1432 | 1457 | 35 | 35 | DG | Pass |
| 42 | 12/5/2019 | F6-F9 | DX | 0715 | 0720 | 35 | 35 | DG | Pass |
| 43 | 12/5/2019 | F9-F10 | DX | 1432 | 1437 | 35 | 35 | DG | Pass |
| 44 | 12/5/2019 | F9-F11 | DX | 1443 | 1448 | 35 | 35 | DG | Pass |
| 45 | 12/5/2019 | F10-F11 | DX | 1443 | 1448 | 35 | 35 | DG | Pass |
| 46 | 12/6/2019 | F11-F13 | DX | 0650 | 0701 | 35 | 35 | DG | Pass |
| 47 | 12/6/2019 | F11-F12 | DX | 0648 | 0653 | 35 | 35 | DG | Pass |
| 48 | 12/6/2019 | F12-F13 | DX | 0648 | 0653 | 35 | 35 | DG | Pass |
| 49 | 12/6/2019 | F12/13-F14 | DX | 0705 | 0710 | 35 | 35 | DG | Pass |
| 50 | 12/6/2019 | F14-F15 | DX | 0742 | 0747 | 35 | 35 | DG | Pass |

GORDON PSC ENVIRONMENTAL

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**PRESSURE TEST LOCATION:** North Slope/Floor, West Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 51 | 12/6/2019 | F15-F16 | DX | 0742 | 0747 | 35 | 35 | DG | Pass |
| 52 | 12/6/2019 | F14-F16 | DX | 0802 | 0807 | 35 | 35 | DG | Pass |
| 53 | 12/6/2019 | F15-F17 | DX | 0804 | 0812 | 35 | 35 | DG | Pass |
| 54 | 12/6/2019 | F16-F17 | DX | 0954 | 0959 | 35 | 35 | DG | Pass |
| 55 | 12/6/2019 | F17-F18 | DX | 1003 | 1008 | 35 | 35 | DG | Pass |
| 56 | 12/6/2019 | F18-F19 | DX | 1002 | 1007 | 35 | 35 | DG | Pass |
| 57 | 12/6/2019 | F17-F19 | DX | 1000 | 1005 | 35 | 35 | DG | Pass |
| 58 | 12/6/2019 | F18-F20 | DX | 1005 | 1010 | 35 | 35 | DG | Pass |
| 59 | 12/6/2019 | F19-F20 | DX | 1004 | 1009 | 35 | 35 | DG | Pass |
| 60 | 12/6/2019 | F20-F21 | DX | 1007 | 1012 | 35 | 35 | DG | Pass |
| 61 | 12/6/2019 | F20-F22 | DX | 1008 | 1013 | 35 | 35 | DG | Pass |
| 62 | 12/6/2019 | F21-F22 | DX | 1013 | 1018 | 35 | 35 | DG | Pass |
| 63 | 12/6/2019 | F21-F23 | DX | 1015 | 1020 | 35 | 35 | DG | Pass |
| 64 | 12/6/2019 | F22-F23 | DX | 1014 | 1019 | 35 | 35 | DG | Pass |
| 65 | 12/6/2019 | F23-F24 | DX | 1022 | 1027 | 35 | 35 | DG | Pass |
| 66 | 12/6/2019 | F23-F25 | DX | 1022 | 1028 | 35 | 35 | DG | Pass |
| 67 | 12/6/2019 | F24-F25 | DX | 1024 | 1029 | 35 | 35 | DG | Pass |
| 68 | 12/6/2019 | F24-F26 | DX | 1039 | 1044 | 35 | 35 | DG | Pass |
| 69 | 12/6/2019 | F25-F26 | DX | 1038 | 1045 | 35 | 35 | DG | Pass |
| 70 | 12/6/2019 | F26-F27 | DX | 1051 | 1056 | 35 | 35 | DG | Pass |
| 71 | 12/6/2019 | F28-F28 | DX | 1050 | 1055 | 35 | 35 | DG | Pass |
| 72 | 12/6/2019 | F27-F28 | DX | 1052 | 1057 | 35 | 35 | DG | Pass |
| 73 | 12/6/2019 | F27-F29 | DX | 1105 | 1110 | 35 | 35 | DG | Pass |
| 74 | 12/6/2019 | F28-F29 | DX | 1106 | 1111 | 35 | 35 | DG | Pass |
| 75 | 12/6/2019 | F29-F30 | DX | 1119 | 1124 | 35 | 35 | DG | Pass |
| 76 | 12/6/2019 | F30-F31 | DX | 1418 | 1423 | 35 | 35 | DG | Pass |
| 77 | 12/6/2019 | F30-F31 | DX | 1415 | 1420 | 35 | 35 | DG | Pass |
| 78 | 12/6/2019 | F31-F32 | DX | 1425 | 1430 | 35 | 35 | DG | Pass |
| 79 | 12/6/2019 | F32-F33 | DX | 1430 | 1435 | 35 | 35 | DG | Pass |
| 80 | 12/6/2019 | F33-F34 | DX | 1441 | 1446 | 35 | 35 | DG | Pass |
| 81 | 12/6/2019 | F35-F36 | DX | 1448 | 1453 | 35 | 35 | DG | Pass |
| 82 | 12/6/2019 | F34-F35 | DX | 1448 | 1453 | 35 | 35 | DG | Pass |
| 83 | 12/6/2019 | F34-F36 | DX | 1502 | 1507 | 35 | 35 | DG | Pass |
| 84 | 12/6/2019 | F36-F37 | DX | 1510 | 1515 | 35 | 35 | DG | Pass |
| 85 | 12/6/2019 | F37-F41 | DX | 1518 | 1523 | 35 | 35 | DG | Pass |
| 86 | 12/6/2019 | F37-F35 | DX | 1455 | 1500 | 35 | 35 | DG | Pass |
| 87 | 12/6/2019 | F41-F37 | DX | 1525 | 1530 | 35 | 35 | DG | Pass |
| 88 | 12/6/2019 | F41-F40 | DX | 1525 | 1530 | 35 | 35 | DG | Pass |
| 89 | 12/6/2019 | F37-F40 | DX | 1532 | 1537 | 35 | 35 | DG | Pass |
| 90 | 12/6/2019 | F40-F39 | DX | 1532 | 1537 | 35 | 35 | DG | Pass |
| 91 | 12/6/2019 | F37-F39 | DX | 1540 | 1545 | 35 | 35 | DG | Pass |
| 92 | 12/6/2019 | F39-F38 | DX | 1548 | 1545 | 35 | 35 | DG | Pass |
| 93 | 12/6/2019 | F37-F38 | DX | 1548 | 1553 | 35 | 35 | DG | Pass |
| 94 | 12/6/2019 | NS13-NS14 | DX | 0700 | 0705 | 35 | 35 | DG | Pass |
| 95 | 12/6/2019 | NS14-NS15 | DX | 0700 | 0705 | 35 | 35 | DG | Pass |
| 96 | 12/6/2019 | NS15-NS16 | DX | 0708 | 0713 | 35 | 35 | DG | Pass |
| 97 | 12/6/2019 | NS16-NS17 | DX | 0708 | 0713 | 35 | 35 | DG | Pass |
| 98 | 12/6/2019 | NS17-NS18 | DX | 0725 | 0730 | 35 | 35 | DG | Pass |
| 99 | 12/6/2019 | NS18-N19 | DX | 0725 | 0730 | 35 | 35 | DG | Pass |
| 100 | 12/6/2019 | N19-NS20 | DX | 1005 | 1010 | 35 | 35 | DG | Pass |

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**PRESSURE TEST LOCATION:** North/East Slope, Floor East Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 101 | 12/6/2019 | NS21-NS22 | DX | 1125 | 1130 | 35 | 35 | DG | Pass |
| 102 | 12/6/2019 | NS22-NS23 | DX | 1110 | 1115 | 35 | 35 | DG | Pass |
| 103 | 12/6/2019 | NS23-NS24 | DX | 1054 | 1059 | 35 | 35 | DG | Pass |
| 104 | 12/6/2019 | NS24-NS25 | DX | 1040 | 1045 | 35 | 35 | DG | Pass |
| 105 | 12/6/2019 | NS25-ES1/ES2 | DX | 1035 | 1040 | 35 | 35 | DG | Pass |
| 106 | 12/6/2019 | ES2-ES3 | DX | 1048 | 1053 | 35 | 35 | DG | Pass |
| 107 | 12/6/2019 | NS24-ES3 | DX | 1048 | 1053 | 35 | 35 | DG | Pass |
| 108 | 12/6/2019 | ES3-ES4 | DX | 1054 | 1059 | 35 | 35 | DG | Pass |
| 109 | 12/6/2019 | NS23-ES4 | DX | 1110 | 1115 | 35 | 35 | DG | Pass |
| 110 | 12/6/2019 | ES4-ES5 | DX | 1110 | 1155 | 35 | 35 | DG | Pass |
| 111 | 12/6/2019 | ES5-NS22 | DX | 1125 | 1130 | 35 | 35 | DG | Pass |
| 112 | 12/6/2019 | ES5-ES6 | DX | 1125 | 1130 | 35 | 35 | DG | Pass |
| 113 | 12/6/2019 | NS21-ES6 | DX | 1132 | 1137 | 35 | 35 | DG | Pass |
| 114 | 12/6/2019 | ES7-ES7A | DX | 1140 | 1145 | 35 | 35 | DG | Pass |
| 115 | 12/6/2019 | ES6-ES7A | DX | 1140 | 1145 | 35 | 35 | DG | Pass |
| 116 | 12/7/2019 | ES7/ES7A-ES8 | DX | 1510 | 1515 | 35 | 35 | BBS | Pass |
| 117 | 12/7/2019 | NS20/NS19-F42 | DX | 1530 | 1535 | 35 | 35 | BBS | Pass |
| 118 | 12/7/2019 | NS17/NS18-F42 | DX | 1537 | 1542 | 35 | 35 | BBS | Pass |
| 119 | 12/7/2019 | NS15/NS16-F42 | DX | 1551 | 1556 | 35 | 35 | BBS | Pass |
| 120 | 12/7/2019 | NS13/NS14-F42 | DX | 1558 | 1603 | 35 | 35 | BBS | Pass |
| 121 | 12/7/2019 | ES7A-F42 | DX | 1520 | 1525 | 35 | 35 | BBS | Pass |
| 122 | 12/10/2019 | ES8-F43 | DX | 0803 | 0808 | 35 | 35 | BBS | Pass |
| 123 | 12/10/2019 | ES8-ES9 | DX | 0803 | 0808 | 35 | 35 | BBS | Pass |
| 124 | 12/10/2019 | ES9-ES10 | DX | 0805 | 0810 | 35 | 35 | BBS | Pass |
| 125 | 12/10/2019 | ES9-F45 | DX | 0805 | 0810 | 35 | 35 | BBS | Pass |
| 126 | 12/10/2019 | ES10-ES11 | DX | 0835 | 0840 | 35 | 35 | BBS | Pass |
| 127 | 12/10/2019 | ES11-ES13 | DX | 0844 | 0849 | 35 | 35 | BBS | Pass |
| 128 | 12/10/2019 | ES12-ES13 | DX | 1500 | 1505 | 35 | 35 | BBS | Pass |
| 129 | 12/10/2019 | ES13-F49 | DX | 0853 | 0858 | 35 | 35 | BBS | Pass |
| 130 | 12/10/2019 | ES11-F47 | DX | 0844 | 0849 | 35 | 35 | BBS | Pass |
| 131 | 12/10/2019 | ES13-ES14 | DX | 0853 | 0858 | 35 | 35 | BBS | Pass |
| 132 | 12/10/2019 | ES12-ES14 | DX | 1508 | 1513 | 35 | 35 | BBS | Pass |
| 133 | 12/10/2019 | ES12-ES11 | DX | 1500 | 1505 | 35 | 35 | BBS | Pass |
| 134 | 12/10/2019 | ES14-ES15 | DX | 0901 | 0906 | 35 | 35 | BBS | Pass |
| 135 | 12/10/2019 | ES15-ES16 | DX | 1100 | 1105 | 35 | 35 | BBS | Pass |
| 136 | 12/10/2019 | ES15-F51 | DX | 1100 | 1105 | 35 | 35 | BBS | Pass |
| 137 | 12/10/2019 | ES16-ES17 | DX | 1125 | 1130 | 35 | 35 | BBS | Pass |
| 138 | 12/10/2019 | ES17-ES18 | DX | 1132 | 1137 | 35 | 35 | BBS | Pass |
| 139 | 12/10/2019 | ES17-F54 | DX | 1132 | 1137 | 35 | 35 | BBS | Pass |
| 140 | 12/10/2019 | F42-F43 | DX | 0740 | 0745 | 35 | 35 | BBS | Pass |
| 141 | 12/10/2019 | F43-F45 | DX | 0748 | 0753 | 35 | 35 | BBS | Pass |
| 142 | 12/10/2019 | F45-F44 | DX | 0748 | 0753 | 35 | 35 | BBS | Pass |
| 143 | 12/10/2019 | F45-F46 | AT | 0813 | 0818 | 35 | 35 | BBS | Pass |
| 144 | 12/10/2019 | F44-F46 | AT | 0813 | 0818 | 35 | 35 | BBS | Pass |
| 145 | 12/10/2019 | F45-F44 | AT | 0748 | 0753 | 35 | 35 | BBS | Pass |
| 146 | 12/10/2019 | F43-F45 | AT | 0748 | 0753 | 35 | 35 | BBS | Pass |
| 147 | 12/10/2019 | F46-F48 | AT | 0820 | 0825 | 35 | 35 | BBS | Pass |
| 148 | 12/10/2019 | F47-F48 | AT | 0820 | 0825 | 35 | 35 | BBS | Pass |
| 149 | 12/10/2019 | F47-F49 | AT | 0828 | 0833 | 35 | 35 | BBS | Pass |
| 150 | 12/10/2019 | F48-F49 | AT | 0828 | 0833 | 35 | 35 | BBS | Pass |

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**PRESSURE TEST LOCATION:** East Slope, Floor East Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 151 | 12/10/2019 | ES18-ES19 | DX | 1448 | 1432.00 | 35 | 35 | BSB | Pass |
| 152 | 12/13/2019 | F57-ES8 | DX | 1520 | 1525 | 35 | 35 | BSB | Pass |
| 153 | 12/13/2019 | F59-ES22 | DX | 1535 | 1540 | 35 | 35 | BSB | Pass |
| 154 | 12/13/2019 | ES20-ES21/ES22 | DX | 1303 | 1308 | 35 | 35 | BSB | Pass |
| 155 | 12/13/2019 | ES21-ES22 | DX | 1303 | 1308 | 35 | 35 | BSB | Pass |
| 156 | 12/13/2019 | ES8-SF9 | DX | 1335 | 1340 | 35 | 35 | BSB | Pass |
| 157 | 12/13/2019 | ES19-ES20 | DX | 1140 | 1145 | 35 | 35 | BSB | Pass |
| 158 | 12/13/2019 | ES21/ES22-ES23 | DX | 1309 | 1314 | 35 | 35 | BSB | Pass |
| 159 | 12/13/2019 | ES23-ES24 | PX | 1315 | 1320 | 35 | 35 | BSB | Pass |
| 160 | 12/13/2019 | ES24-ES25 | PX | 1328 | 1333 | 35 | 35 | BSB | Pass |
| 161 | 12/13/2019 | ES25-ES26 | PX | 1328 | 1333 | 35 | 35 | BSB | Pass |
| 162 | 12/13/2019 | ES26-ES27 | PX | 1335 | 1340 | 35 | 35 | BSB | Pass |
| 163 | 12/13/2019 | ES27-ES28 | PX | 1335 | 1340 | 35 | 35 | BSB | Pass |
| 164 | 12/13/2019 | ES28-ES29 | PX | 1420 | 1425 | 35 | 35 | BSB | Pass |
| 165 | 12/13/2019 | ES29-ES30 | PX | 1420 | 1425 | 35 | 35 | BSB | Pass |
| 166 | 12/13/2019 | ES30-ES31 | PX | 1430 | 1435 | 35 | 35 | BSB | Pass |
| 167 | 12/13/2019 | ES30-ES32 | PX | 1404 | 1409 | 35 | 35 | BSB | Pass |
| 168 | 12/13/2019 | ES31-ES32 | PX | 1430 | 1435 | 35 | 35 | BSB | Pass |
| 169 | 12/13/2019 | F58-ES20 | DX | 1520 | 1525 | 35 | 35 | BSB | Pass |
| 170 | 12/16/2019 | F60-F62 | KS | 1541 | 1546 | 35 | 35 | BSB | Pass |
| 171 | 12/16/2019 | F60-ES23 | KS | 1541 | 1546 | 35 | 35 | BSB | Pass |
| 172 | 12/16/2019 | F59-F60 | KS | 1545 | 1550 | 35 | 35 | BSB | Pass |
| 173 | 12/16/2019 | F60-F61 | KS | 1545 | 1500 | 35 | 35 | BSB | Pass |
| 174 | 12/16/2019 | F62-ES24 | KS | 1538 | 1543 | 35 | 35 | BSB | Pass |
| 175 | 12/16/2019 | F62-F63 | KS | 1538 | 1543 | 35 | 35 | BSB | Pass |
| 176 | 12/16/2019 | F63-F64 | KS | 1532 | 1537 | 35 | 35 | BSB | Pass |
| 177 | 12/16/2019 | F63-ES25 | KS | 1532 | 1537 | 35 | 35 | BSB | Pass |
| 178 | 12/16/2019 | F64-F65 | KS | 1529 | 1534 | 35 | 35 | BSB | Pass |
| 179 | 12/16/2019 | F64-ES26 | KS | 1529 | 1534 | 35 | 35 | BSB | Pass |
| 180 | 12/16/2019 | F65-ES27 | KS | 1428 | 1433 | 35 | 35 | BSB | Pass |
| 181 | 12/16/2019 | F65-F66 | KS | 1528 | 1533 | 35 | 35 | BSB | Pass |
| 182 | 12/16/2019 | F66-ES28 | KS | 1517 | 1522 | 35 | 35 | BSB | Pass |
| 183 | 12/16/2019 | F66-F68 | KS | 1517 | 1522 | 35 | 35 | BSB | Pass |
| 184 | 12/16/2019 | F68-ES29 | KS | 1512 | 1517 | 35 | 35 | BSB | Pass |
| 185 | 12/16/2019 | F68-F69 | KS | 1512 | 1517 | 35 | 35 | BSB | Pass |
| 186 | 12/16/2019 | F69-ES30 | KS | 1505 | 1520 | 35 | 35 | BSB | Pass |
| 187 | 12/16/2019 | F69-F70 | KS | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 188 | 12/16/2019 | ES31/ES32-ES33 | KS | 1457 | 1502 | 35 | 35 | BSB | Pass |
| 189 | 12/16/2019 | ES32-F70 | KS | 1455 | 1500 | 35 | 35 | BSB | Pass |
| 190 | 12/16/2019 | F70-F72 | KS | 1455 | 1500 | 35 | 35 | BSB | Pass |
| 191 | 12/16/2019 | ES33-F72 | KS | 1448 | 1453 | 35 | 35 | BSB | Pass |
| 192 | 12/16/2019 | ES33-ES34 | KS | 1429 | 1434 | 35 | 35 | BSB | Pass |
| 193 | 12/16/2019 | F72-F73 | KS | 1416 | 1421 | 35 | 35 | BSB | Pass |
| 194 | 12/16/2019 | F73-ES34 | KS | 1416 | 1421 | 35 | 35 | BSB | Pass |
| 195 | 12/16/2019 | ES34-ES35 | KS | 1435 | 1440 | 35 | 35 | BSB | Pass |
| 196 | 12/16/2019 | F73-F75 | KS | 1422 | 1427 | 35 | 35 | BSB | Pass |
| 197 | 12/16/2019 | F75-ES35 | KS | 1422 | 1427 | 35 | 35 | BSB | Pass |
| 198 | 12/16/2019 | ES35-ES37 | KS | 1436 | 1441.00 | 35 | 35 | BSB | Pass |
| 199 | 12/16/2019 | ES37-F76 | KS | 1436 | 1441 | 35 | 35 | BSB | Pass |
| 200 | 12/16/2019 | ES35-ES36 | KS | 1448 | 1453 | 35 | 35 | BSB | Pass |

GORDON ENVIRONMENTAL PSC

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 5

**PRESSURE TEST LOCATION:** East Slope, Floor East Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 201 | 12/16/2019 | ES36-ES37 | KS | 1446 | 1451 | 35 | 35 | BSB | Pass |
| 202 | 12/16/2019 | ES36-ES38 | KS | 1446 | 1451 | 35 | 35 | BSB | Pass |
| 203 | 12/16/2019 | ES37-ES38 | KS | 1440 | 1445 | 35 | 35 | BSB | Pass |
| 204 | 12/16/2019 | ES38-F77 | KS | 1440 | 1445 | 35 | 35 | BSB | Pass |
| 205 | 12/16/2019 | F76-F77/F788 | KS | 1405 | 1410 | 35 | 35 | BSB | Pass |
| 206 | 12/16/2019 | F77-F78 | KS | 1350 | 1355 | 35 | 35 | BSB | Pass |
| 207 | 12/16/2019 | F78-F79 | KS | 1550 | 1555 | 35 | 35 | BSB | Pass |
| 208 | 12/16/2019 | F76-F79 | KS | 1550 | 1555 | 35 | 35 | BSB | Pass |
| 209 | 12/16/2019 | F76-LT | KS | 1551 | 1556 | 35 | 35 | BSB | Pass |
| 210 | 12/16/2019 | F74-LT | KS | 1352 | 1357 | 35 | 35 | BSB | Pass |
| 211 | 12/16/2019 | F74-F75 | KS | 1411 | 1416 | 35 | 35 | BSB | Pass |
| 212 | 12/16/2019 | F74-F73 | KS | 1425 | 1429 | 35 | 35 | BSB | Pass |
| 213 | 12/16/2019 | F74-F75 | KS | 1410 | 1415 | 35 | 35 | BSB | Pass |
| 214 | 12/16/2019 | F75-F76 | KS | 1410 | 1415 | 35 | 35 | BSB | Pass |
| 215 | 12/16/2019 | F73-LT | KS | 1553 | 1558 | 35 | 35 | BSB | Pass |
| 216 | 12/16/2019 | F72-LT | KS | 1554 | 1559 | 35 | 35 | BSB | Pass |
| 217 | 12/16/2019 | F63A-F64 | DX | 1551 | 1556 | 35 | 35 | BSB | Pass |
| 218 | 12/16/2019 | F63-F63A | DX | 1540 | 1545 | 35 | 35 | BSB | Pass |
| 219 | 12/16/2019 | F63-F62 | DX | 1540 | 1545 | 35 | 35 | BSB | Pass |
| 220 | 12/16/2019 | F63A-F62 | DX | 1546 | 1551 | 35 | 35 | BSB | Pass |
| 221 | 12/16/2019 | F63A-LT | DX | 1546 | 1551 | 35 | 35 | BSB | Pass |
| 222 | 12/16/2019 | F62-LT | DX | 1526 | 1531 | 35 | 35 | BSB | Pass |
| 223 | 12/16/2019 | F61-F62 | DX | 1526 | 1531 | 35 | 35 | BSB | Pass |
| 224 | 12/16/2019 | F61-LT | DX | 1526 | 1531 | 35 | 35 | BSB | Pass |
| 225 | 12/16/2019 | F61-F62 | DX | 1534 | 1539 | 35 | 35 | BSB | Pass |
| 226 | 12/16/2019 | F61-F60 | DX | 1534 | 1539 | 35 | 35 | BSB | Pass |
| 227 | 12/16/2019 | F29-F61 | DX | 1520 | 1525 | 35 | 35 | BSB | Pass |
| 228 | 12/16/2019 | F59-LT | DX | 1510 | 1515 | 35 | 35 | BSB | Pass |
| 229 | 12/16/2019 | F59-F58 | DX | 1510 | 1515 | 35 | 35 | BSB | Pass |
| 230 | 12/16/2019 | F58-LT | DX | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 231 | 12/16/2019 | F57-F58 | DX | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 232 | 12/16/2019 | F57-LT | DX | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 233 | 12/16/2019 | F56-F57 | DX | 1445 | 1450 | 35 | 35 | BSB | Pass |
| 234 | 12/16/2019 | F56-LT | DX | 1445 | 1450 | 35 | 35 | BSB | Pass |
| 235 | 12/17/2019 | F71-LT | KS | 0712 | 0717 | 35 | 35 | BSB | Pass |
| 236 | 12/17/2019 | F70-F71 | KS | 0710 | 0715 | 35 | 35 | BSB | Pass |
| 237 | 12/17/2019 | F71-F72 | KS | 0710 | 0715 | 35 | 35 | BSB | Pass |
| 238 | 12/17/2019 | F70/F71-F69 | KS | 0720 | 0725 | 35 | 35 | BSB | Pass |
| 239 | 12/17/2019 | F69-LT | KS | 0720 | 0725 | 35 | 35 | BSB | Pass |
| 240 | 12/17/2019 | F69-F68 | KS | 0720 | 0725 | 35 | 35 | BSB | Pass |
| 241 | 12/17/2019 | F68-LT | KS | 0720 | 0725 | 35 | 35 | BSB | Pass |
| 242 | 12/17/2019 | F66-F67 | KS | 0725 | 0730 | 35 | 35 | BSB | Pass |
| 243 | 12/17/2019 | F65-F67 | KS | 0725 | 0730 | 35 | 35 | BSB | Pass |
| 244 | 12/17/2019 | F67-LT | KS | 0722 | 0727 | 35 | 35 | BSB | Pass |
| 245 | 12/17/2019 | F65-LT | KS | 0726 | 0731 | 35 | 35 | BSB | Pass |
| 246 | 12/17/2019 | F64-F65 | KS | 0733 | 0738 | 35 | 35 | BSB | Pass |
| 247 | 12/17/2019 | F64-LT | KS | 0733 | 0738 | 35 | 35 | BSB | Pass |
| 248 | 12/10/2019 | F48-F49 | DX | 0828 | 833 | 35 | 35 | BSB | Pass |
| 249 | 12/12/2019 | F48-F46 | DX | 0740 | 745 | 35 | 35 | BSB | Pass |
| 250 | 12/14/2019 | F48-LT | DX | 1010 | 1015 | 35 | 35 | BSB | Pass |

GORDON PSC ENVIRONMENTAL

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 6

**PRESSURE TEST LOCATION:** Floor East Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 251 | 12/14/2019 | F46-LT | DX | 0945 | 950 | 35 | 35 | BSB | Pass |
| 252 | 12/14/2019 | F44-LT | DX | 0940 | 945 | 35 | 35 | BSB | Pass |
| 253 | 12/14/2019 | F43-LT | DX | 1320 | 1325 | 35 | 35 | BSB | Pass |
| 254 | 12/16/2019 | F55-F56 | DX | 1435 | 1440 | 35 | 35 | BSB | Pass |
| 255 | 12/16/2019 | F55-LT | DX | 1435 | 1440 | 35 | 35 | BSB | Pass |
| 256 | 12/16/2019 | F54-F55 | DX | 1450 | 1455 | 35 | 35 | BSB | Pass |
| 257 | 12/16/2019 | F53-F54 | DX | 1410 | 1415 | 35 | 35 | BSB | Pass |
| 258 | 12/16/2019 | F53-LT | DX | 1410 | 1415 | 35 | 35 | BSB | Pass |
| 259 | 12/16/2019 | F52-LT | DX | 1355 | 1400 | 35 | 35 | BSB | Pass |
| 260 | 12/16/2019 | F52-F53 | DX | 1355 | 1400 | 35 | 35 | BSB | Pass |
| 261 | 12/16/2019 | F51-LT | DX | 1535 | 1540 | 35 | 35 | BSB | Pass |
| 262 | 12/16/2019 | F49-LT | DX | 1335 | 1340 | 35 | 35 | BSB | Pass |
| 263 | 12/16/2019 | F42-LT | DX | 1320 | 1325 | 35 | 35 | BSB | Pass |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.11. FML Seam Field Destructive Test Records

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# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | SDT-1 70' S OF N AT NS2-NS3 | | | | | | | | P | 129 | 119 | 130 | | |
| 12/3/2019 | | BSB | AM | 6 | 860 | 4.0 | | | P | 115 | 90 | 115 | | |
| | | | | | | | | | S | 186 | 176 | | | |
| | SDT-2 110' S OF N AT NS6-NS7 | | | | | | | | P | 89 | 103 | 136 | | |
| 12/3/2019 | | BSB | BX | 324 | 860 | 6.5 | | | P | 110 | 125 | 136 | | |
| | | | | | | | | | S | 181 | 171 | | | |
| | SDT-3 80' S OF N AT NS9A-NS10 | | | | | | | | P | 114 | 140 | 131 | | |
| 12/3/2019 | | BSB | PX | 11 | 860 | 4.5 | | | P | 110 | 101 | 140 | | |
| | | | | | | | | | S | 169 | 178 | | | |
| | SDT-4 19' W OF LT F2-F3A | | | | | | | | P | 109 | 109 | 112 | | |
| 12/3/2019 | | BSB | AM | 6 | 860 | 3.5 | | | P | 126 | 98 | 100 | | |
| | | | | | | | | | S | 141 | 140 | | | |
| | SDT-5 82' W OF LT F3-F4 | | | | | | | | P | 122 | 101 | 122 | | |
| 12/5/2019 | | BSB | BX | 324 | 860 | 6.0 | | | P | 109 | 100 | 116 | | |
| | | | | | | | | | S | 134 | 154 | | | |
| | SDT-6 130' W OF LT F5A-F6 | | | | | | | | P | 17 | 112 | 125 | | |
| 12/5/2019 | | BSB | PX | 11 | 860 | 4.0 | | | P | 95 | 120 | 118 | | |
| | | | | | | | | | S | 144 | 148 | | | |
| | SDT-7 67' E OF W AT F9-F11 | | | | | | | | P | 122 | 112 | 140 | | |
| 12/5/2019 | | BSB | PX | 11 | 860 | 4.0 | | | P | 106 | 120 | 110 | | |
| | | | | | | | | | S | 136 | 167 | | | |
| | SDT-8 142' E OF W AT F13-F14 | | | | | | | | P | 110 | 124 | 114 | | |
| 12/5/2019 | | BSB | AM | 6 | 860 | 3.5 | | | P | 112 | 116 | 110 | | |
| | | | | | | | | | S | 136 | 166 | | | |
| | SDT-9 82' E OF W AT F16-F17 | | | | | | | | P | 140 | 105 | 120 | | |
| 12/6/2019 | | BSB | PX | 11 | 860 | 4.0 | | | P | 112 | 107 | 137 | | |
| | | | | | | | | | S | 118 | 160 | | | |
| | SDT-10 97' E OF W AT F17-F18 | | | | | | | | P | 114 | 111 | 112 | | |
| 12/6/2019 | | BSB | BX | 324 | 860 | 5.5 | | | P | 105 | 113 | 107 | | |
| | | | | | | | | | S | 141 | 162 | | | |

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# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | SDT-11 | | | | | | | | P | 124 | 424 | 128 | | |
| 12/6/2019 | 121' E OF W AT | BSB | AM | 6 | 860 | 3.0 | | | P | 130 | 115 | 127 | | |
| | F18-F19 | | | | | | | | S | 136 | 138 | | | |
| | SDT-12 | | | | | | | | P | 110 | 128 | 127 | | |
| 12/6/2019 | 22' E OF W AT | BSB | AM | 6 | 860 | 3.0 | | | P | 109 | 109 | 134 | | |
| | F23-F24 | | | | | | | | S | 175 | 159 | | | |
| | SDT-13 | | | | | | | | P | 133 | 128 | 126 | | |
| 12/6/2019 | 24' E OF W AT | BSB | PX | 11 | 860 | 4.0 | | | P | 142 | 121 | 110 | | |
| | F27-F29 | | | | | | | | S | 157 | 181 | | | |
| | SDT-14 | | | | | | | | P | 111 | 118 | 122 | | |
| 12/6/2019 | 98' E OF W AT | BSB | BX | 324 | 860 | 5.5 | | | P | 107 | 112 | 117 | | |
| | F29-F30 | | | | | | | | S | 179 | 153 | | | |
| | SDT-15 | | | | | | | | P | 113 | 129 | 121 | | |
| 12/6/2019 | 142' E OF W AT | BSB | BX | 324 | 860 | 5.5 | | | P | 117 | 118 | 114 | | |
| | F31-F32 | | | | | | | | S | 171 | 147 | | | |
| | SDT-16 | | | | | | | | P | 108 | 125 | 118 | | |
| 12/6/2019 | 180' E OF W AT | BSB | AM | 6 | 860 | 3.0 | | | P | 108 | 135 | 120 | | |
| | F32-F33 | | | | | | | | S | 179 | 157 | | | |
| | SDT-17 | | | | | | | | P | 116 | 123 | 113 | | |
| 12/6/2019 | 145' E OF W AT | BSB | PX | 11 | 860 | 4.5 | | | P | 127 | 135 | 135 | | |
| | F34--F36 | | | | | | | | S | 169 | 158 | | | |
| | SDT-18 | | | | | | | | P | 113 | 119 | 116 | | |
| 12/6/2019 | 55' E OF W AT | BSB | AM | 6 | 860 | 3.0 | | | P | 134 | 115 | 132 | | |
| | F36-F37 | | | | | | | | S | 150 | 172 | | | |
| | SDT-19A | | | | | | | | P | 134 | 151 | 143 | | |
| 12/7/2019 | 130' S OF N AT | BSB | AM | 6 | 860 | 3.0 | | | P | 150 | 142 | 152 | | |
| | NS14-NS15 | | | | | | | | S | 183 | 174 | | | |
| | SDT-20 | | | | | | | | P | 106 | 140 | 121 | | |
| 12/7/2019 | 60' S OF N AT | BSB | PX | 11 | 860 | 4.5 | | | P | 121 | 123 | 124 | | |
| | NS16--NS17 | | | | | | | | S | 153 | 150 | | | |

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# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | SDT-21 | | | | | | | | P | 163 | 145 | 137 | | |
| 12/7/2019 | 97' S OF N AT | BSB | BX | 324 | 860 | 5.5 | | | P | 176 | 150 | 160 | | |
| | NS18-NS19 | | | | | | | | S | 168 | 175 | | | |
| | SDT-22 | | | | | | | | P | 112 | 132 | 128 | | |
| 12/7/2019 | 70' W OF E AT | BSB | PX | 11 | 860 | 4.0 | | | P | 118 | 144 | 146 | | |
| | ES4-ES5 | | | | | | | | S | 154 | 185 | | | |
| | SDT-23 | | | | | | | | P | 137 | 131 | 138 | | |
| 12/7/2019 | 41' W OF E AT | BSB | BX | 324 | 860 | 5.5 | | | P | 127 | 149 | 131 | | |
| | ES7-ES8 | | | | | | | | S | 154 | 164 | | | |
| | SDT-24 | | | | | | | | P | 145 | 138 | 132 | | |
| 12/7/2019 | 60' W OF E AT | BSB | PX | 11 | 860 | 4.0 | | | P | 120 | 123 | 162 | | |
| | ES11-ES13 | | | | | | | | S | 155 | 169 | | | |
| | SDT-25 | | | | | | | | P | 123 | 121 | 118 | | |
| 12/7/2019 | 134' E OF LT | BSB | BX | 324 | 860 | 4.5 | | | P | 115 | 126 | 113 | | |
| | F42-F43 | | | | | | | | S | 139 | 150 | | | |
| | SDT-26 | | | | | | | | P | 140 | 131 | 130 | | |
| 12/7/2019 | 104' E OF LT | BSB | PX | 11 | 860 | 4.0 | | | P | 128 | 117 | 125 | | |
| | F46-F47 | | | | | | | | S | 202 | 170 | | | |
| | SDT-27 | | | | | | | | P | 134 | 122 | 127 | | |
| 12/7/2019 | 69' E OF LT | BSB | SP | 6 | 860 | 3.0 | | | P | 125 | 124 | 123 | | |
| | F46-F47 | | | | | | | | S | 144 | 142 | | | |
| | SDT-28 | | | | | | | | P | 121 | 118 | 115 | | |
| 12/8/2019 | 146' E OF LT | BSB | PX | 11 | 860 | 4.0 | | | P | 131 | 127 | 113 | | |
| | F50-F52 | | | | | | | | S | 183 | 177 | | | |
| | SDT-29 | | | | | | | | P | 135 | 144 | 111 | | |
| 12/8/2019 | 131' E OF LT | BSB | BX | 324 | 860 | 4.5 | | | P | 138 | 120 | 132 | | |
| | F54-F55 | | | | | | | | S | 179 | 162 | | | |
| | SDT-30 | | | | | | | | P | 133 | 125 | 128 | | |
| 12/8/2019 | 143' E OF LT | BSB | BX | 324 | 860 | 4.5 | | | P | 117 | 137 | 159 | | |
| | F56-F57 | | | | | | | | S | 178 | 174 | | | |

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505.867.6990

# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | SDT-31 | | | | | | | | P | 119 | 118 | 111 | | |
| 12/13/2019 | 45' E OF LT | DG | SP | 2 | 860 | 3.0 | | | P | 121 | 150 | 128 | | |
| | F59-F60 | | | | | | | | S | 174 | 177 | | | |
| | SDT-32 | | | | | | | | P | 134 | 132 | 141 | | |
| 12/13/2019 | 80' E OF LT | DG | PX | 11 | 860 | 4.0 | | | P | 122 | 148 | 126 | | |
| | F62-F63 | | | | | | | | S | 169 | 172 | | | |
| | SDT-33 | | | | | | | | P | 121 | 140 | 154 | | |
| 12/13/2019 | 45' W OF | DG | BX | 479 | 860 | 4.0 | | | P | 132 | 157 | 151 | | |
| | F64/65-E27 INT F64-F65 | | | | | | | | S | 192 | 169 | | | |
| | SDT-34 | | | | | | | | P | 145 | 136 | 153 | | |
| 12/13/2019 | 21' W OF | DG | BX | 479 | 860 | 4.0 | | | P | 151 | 160 | 143 | | |
| | F68/69-ES30 INT F68-F69 | | | | | | | | S | 194 | 180 | | | |
| | SDT-35 | | | | | | | | P | 151 | 130 | 144 | | |
| 12/14/2019 | 25' W OF AT | DG | BX | 479 | 860 | 3.6 | | | P | 142 | 147 | 149 | | |
| | ES23-ES24 | | | | | | | | S | 165 | 171 | | | |
| | SDT-36 | | | | | | | | P | 146 | 126 | 124 | | |
| 12/14/2019 | 25' W OF AT | DG | PX | 11 | 860 | 3.6 | | | P | 133 | 139 | 129 | | |
| | ES26-ES27 | | | | | | | | S | 185 | 164 | | | |
| | SDT-37 | | | | | | | | P | 121 | 121 | 143 | | |
| 12/14/2019 | 20' W OF AT | DG | BX | 479 | 860 | 3.6 | | | P | 121 | 118 | 135 | | |
| | ES29-ES30 | | | | | | | | S | 165 | 157 | | | |
| | SDT-38 | | | | | | | | P | 124 | 117 | 125 | | |
| 12/16/2019 | 90' E OF LT | BSB | SP | 2 | 860 | 3.0 | | | P | 145 | 130 | 138 | | |
| | F69-F70 | | | | | | | | S | 157 | 160 | | | |
| | SDT-39 | | | | | | | | P | 111 | 108 | 120 | | |
| 12/16/2019 | 34' W OF E AT | BSB | BX | 479 | 860 | 3.6 | | | P | 144 | 128 | 145 | | |
| | ES32-ES33 | | | | | | | | S | 147 | 158 | | | |
| | SDT-40 | | | | | | | | P | 135 | 137 | 148 | | |
| 12/16/2019 | 78' W OF E AT | BSB | PX | 324 | 860 | 4.0 | | | P | 154 | 156 | 147 | | |
| | ES35-ES36 | | | | | | | | S | 177 | 171 | | | |

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# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 5

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | SDT-41 | | | | | | | | P | 127 | 129 | 122 | | |
| 12/16/2019 | 70' E OF LT | BSB | BX | 479 | 860 | 3.6 | | | P | 129 | 128 | 129 | | |
| | F72-F73 | | | | | | | | S | 156 | 150 | | | |
| | SDT-42 | | | | | | | | P | 99 | 128 | 122 | | |
| 12/16/2019 | 139' E OF LT | BSB | BX | 479 | 860 | 3.0 | | | P | 119 | 125 | 129 | | |
| | F73-F74 | | | | | | | | S | 156 | 150 | | | |
| | SDT-43 | | | | | | | | P | 102 | 116 | 128 | | |
| 12/16/2019 | 93' E OF LT | BSB | PX | 324 | 860 | 4.0 | | | P | 113 | 122 | 132 | | |
| | F74-F76 | | | | | | | | S | 164 | 166 | | | |
| | SDT-44 | | | | | | | | P | 113 | 118 | 122 | | |
| 12/16/2019 | 113' E OF LT | BSB | BX | 479 | 860 | 4.0 | | | P | 127 | 128 | 128 | | |
| | F76-F77 | | | | | | | | S | 148 | 156 | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
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| | | | | | | | | | S | | | | | |

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# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | PDT-1 | | | | | | | | P | 121 | 121 | 115 | | |
| 12/10/2019 | 16' W OF LT | BSB | PX | 11 | 860 | 3.0 | | | P | 118 | 120 | 121 | | |
| | P3-P4 | | | | | | | | S | 155 | 149 | | | |
| | PDT-2 | | | | | | | | P | 120 | 135 | 151 | | |
| 12/10/2019 | 24' W OF LT | BSB | BX | 324 | 860 | 4.0 | | | P | 130 | 124 | 125 | | |
| | P4-P5 | | | | | | | | S | 180 | 161 | | | |
| | PDT-3 | | | | | | | | P | 133 | 156 | 133 | | |
| 12/10/2019 | 40' W OF LT | BSB | DX | 6 | 860 | 3.5 | | | P | 147 | 147 | 150 | | |
| | P7-P8 | | | | | | | | S | 150 | 143 | | | |
| | PDT-4 | | | | | | | | P | 123 | 137 | 121 | | |
| 12/11/2019 | 55' W OF LT | BSB | DX | 6 | 860 | 3.5 | | | P | 130 | 127 | 122 | | |
| | P11-P13 | | | | | | | | S | 194 | 177 | | | |
| | PDT-5 | | | | | | | | P | 116 | 131 | 132 | | |
| 12/12/2019 | 100' E OF W EDGE | DR | BX | 324 | 860 | 4.5 | | | P | 123 | 135 | 131 | | |
| | P14-P15 | | | | | | | | S | 173 | 151 | | | |
| | PDT-6 | | | | | | | | P | 117 | 137 | 119 | | |
| 12/12/2019 | 75' E OF W EDGE | DR | DX | 6 | 860 | 3.5 | | | P | 116 | 132 | 120 | | |
| | P16-P18 | | | | | | | | S | 160 | 176 | | | |
| | PDT-7 | | | | | | | | P | 131 | 137 | 119 | | |
| 12/12/2019 | 35' W OF E EDGE | DR | PX | 11 | 860 | 3.6 | | | P | 139 | 132 | 120 | | |
| | P19-P21 | | | | | | | | S | 160 | 176 | | | |
| | PDT-8 | | | | | | | | P | 112 | 117 | 95 | | |
| 12/12/2019 | 121' E OF W EDGE | DR | BX | 324 | 860 | 4.0 | | | P | 123 | 124 | 121 | | |
| | P21-P22 | | | | | | | | S | 143 | 161 | | | |
| | PDT-9 | | | | | | | | P | 123 | 126 | 137 | | |
| 12/12/2019 | 45' E OF W EDGE | DR | PX | 11 | 860 | 3.6 | | | P | 116 | 135 | 126 | | |
| | P24-P25 | | | | | | | | S | 140 | 170 | | | |
| | PDT-10 | | | | | | | | P | 124 | 122 | 124 | | |
| 12/12/2019 | 90' E OF W EDGE | DR | PX | 11 | 860 | 3.6 | | | P | 112 | 115 | 110 | | |
| | P26-P27 | | | | | | | | S | 171 | 161 | | | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | PDT-11 125' E OF W EDGE P28-P30 | | | | | | | | P | 138 | 137 | 134 | | |
| 12/12/2019 | | DR | PX | 11 | 860 | 3.6 | | | P | 128 | 123 | 127 | | |
| | | | | | | | | | S | 160 | 164 | | | |
| | PDT-12 155' E OF W EDGE P31-P32 | | | | | | | | P | 143 | 137 | 130 | | |
| 12/12/2019 | | DR | BX | 479 | 860 | 4.0 | | | P | 125 | 116 | 124 | | |
| | | | | | | | | | S | 161 | 167 | | | |
| | PDT-13 190' E OF W EDGE P34-P35 | | | | | | | | P | 134 | 114 | 112 | | |
| 12/13/2019 | | DG | PX | 11 | 860 | 4.0 | | | P | 118 | 120 | 121 | | |
| | | | | | | | | | S | 157 | 161 | | | |
| | PDT-14 220' E OF W EDGE P37-P38 | | | | | | | | P | 126 | 121 | 114 | | |
| 12/13/2019 | | DG | BX | 479 | 860 | 4.0 | | | P | 131 | 132 | 121 | | |
| | | | | | | | | | S | 165 | 160 | | | |
| | PDT-15 12' W OF NS7/8-P3 | | | | | | | | P | 112 | 106 | 126 | | |
| 12/13/2019 | | DG | SP | 2 | 860 | 3.0 | | | P | 114 | 137 | 133 | | |
| | | | | | | | | | S | 164 | 149 | | | |
| | PDT-16 25' S OF N AT NS9-NS10 | | | | | | | | P | 121 | 126 | 123 | | |
| 12/13/2019 | | DG | SP | 2 | 860 | 3.0 | | | P | 128 | 133 | 130 | | |
| | | | | | | | | | S | 167 | 165 | | | |
| | PDT-17 100' S OF N AT NS5-NS7 | | | | | | | | P | 132 | 119 | 138 | | |
| 12/13/2019 | | DG | SP | 2 | 860 | 3.0 | | | P | 137 | 141 | 148 | | |
| | | | | | | | | | S | 174 | 170 | | | |
| | PDT-18 100' S OF N AT NS2-NS3 | | | | | | | | P | 127 | 132 | 126 | | |
| 12/13/2019 | | DG | DX | 6 | 860 | 2.0 | | | P | 143 | 117 | 128 | | |
| | | | | | | | | | S | 164 | 149 | | | |
| | PDT-19 100' E OF LT P41-P43 | | | | | | | | P | 120 | 128 | 118 | | |
| 12/19/2019 | | DR | PX | 324 | 860 | 4.5 | | | P | 118 | 110 | 113 | | |
| | | | | | | | | | S | 157 | 152 | | | |
| | PDT-20 39' E OF LT P42/P43-P44 | | | | | | | | P | 113 | 121 | 115 | | |
| 12/19/2019 | | DR | BX | 479 | 860 | 4.0 | | | P | 117 | 113 | 120 | | |
| | | | | | | | | | S | 150 | 153 | | | |

GORDON ENVIRONMENTAL PSC

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Rio Rancho, New Mexico 87124
505.867.6990

# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics **CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico **SHEET NUMBER:** 3

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **FUSION** | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| **EXTRUSION** | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | PDT-21 | | | | | | | | P | 123 | 125 | 121 | | |
| 12/19/2019 | 64' E OF LT | DR | DX | 2 | 860 | 2.9 | | | P | 132 | 118 | 117 | | |
| | P45-P47 | | | | | | | | S | 156 | 154 | | | |
| | PDT-22 | | | | | | | | P | 124 | 127 | 121 | | |
| 12/19/2019 | 83' E OF LT | DR | BX | 479 | 860 | 4.0 | | | P | 130 | 113 | 117 | | |
| | P48/P50-P49 | | | | | | | | S | 156 | 154 | | | |
| | PDT-23 | | | | | | | | P | 103 | 128 | 118 | | |
| 12/19/2019 | 112' E OF LT | DR | PX | 324 | 860 | 4.5 | | | P | 116 | 126 | 122 | | |
| | P51-P53/P52 | | | | | | | | S | 137 | 150 | | | |
| | PDT-24 | | | | | | | | P | 131 | 117 | 143 | | |
| 12/19/2019 | 147' E OF LT | DR | BX | 479 | 860 | 4.0 | | | P | 118 | 120 | 132 | | |
| | P56-P55/P54 | | | | | | | | S | 140 | 162 | | | |
| | PDT-25 | | | | | | | | P | 109 | 116 | 129 | | |
| 12/19/2019 | 158' W OF AT | DR | BX | 479 | 860 | 4.0 | | | P | 118 | 118 | 120 | | |
| | P59-P60 | | | | | | | | S | 152 | 147 | | | |
| | PDT-26 | | | | | | | | P | 107 | 124 | 114 | | |
| 12/19/2019 | 84' E OF LT | DR | DX | 2 | 860 | 2.99 | | | P | 118 | 106 | 98 | | |
| | P61-P62 | | | | | | | | S | 135 | 155 | | | |
| | PDT-27 | | | | | | | | P | 99 | 120 | 115 | | |
| 12/19/2019 | 27' E OF LT | DR | BX | 479 | 860 | 4.0 | | | P | 120 | 132 | 128 | | |
| | P63-P64 | | | | | | | | S | 140 | 147 | | | |
| | PDT-28 | | | | | | | | P | 116 | 115 | 116 | | |
| 12/19/2019 | 25' E OF LT | DR | DX | 2 | 860 | 2.9 | | | P | 114 | 107 | 111 | | |
| | P67-P68/P69 | | | | | | | | S | 157 | 142 | | | |
| | PDT-29 P70- | | | | | | | | P | 107 | 153 | 117 | | |
| 12/19/2019 | P71 | DR | PX | 11 | 860 | 4.5 | | | P | 116 | 109 | 110 | | |
| | | | | | | | | | S | 150 | 161 | | | |
| | PDT-30 | | | | | | | | P | 113 | 128 | 118 | | |
| 12/19/2019 | P73-P74 | DR | BX | 324 | 860 | 4.0 | | | P | 120 | 113 | 115 | | |
| | | | | | | | | | S | 162 | 159 | | | |

GORDON ENVIRONMENTAL PSC

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Rio Rancho, New Mexico 87124
505.867.6990

# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | PDT-31 | | | | | | | | P | 109 | 137 | 158 | | |
| 12/20/2019 | 76' S OF AT | DR | PX | 324 | 860 | 4.0 | | | P | 118 | 140 | 125 | | |
| | NS15-NS16 | | | | | | | | S | 182 | 156 | | | |
| | PDT-32 | | | | | | | | P | 121 | 138 | 112 | | |
| 12/20/2019 | 47' S OF AT | DR | BX | 479 | 860 | 3.2 | | | P | 144 | 141 | 122 | | |
| | NS18/9-NS20 | | | | | | | | S | 172 | 155 | | | |
| | PDT-33 | | | | | | | | P | 121 | 145 | 120 | | |
| 12/20/2019 | 80' S OF AT | DR | BX | 479 | 860 | 3.2 | | | P | 135 | 118 | 126 | | |
| | NS22-NS23 | | | | | | | | S | 131 | 178 | | | |
| | PDT-34 | | | | | | | | P | 135 | 128 | 122 | | |
| 12/20/2019 | 25' S OF AT | DR | PX | 324 | 860 | 4.0 | | | P | 146 | 141 | 141 | | |
| | NS28-NS29 | | | | | | | | S | 181 | 152 | | | |
| | PDT-35 | | | | | | | | P | 118 | 119 | 117 | | |
| 12/20/2019 | 74' W OF AT | DR | PX | 324 | 860 | 4.0 | | | P | 125 | 132 | 107 | | |
| | ES35/ES36-ES37 | | | | | | | | S | 166 | 162 | | | |
| | PDT-36 | | | | | | | | P | 116 | 122 | 134 | | |
| 12/21/2019 | 65' W OF E AT | BSB | DX | 2 | 860 | 2.99 | | | P | 134 | 121 | 132 | | |
| | ES39-ES40 | | | | | | | | S | 170 | 168 | | | |
| | PDT-37 | | | | | | | | P | 126 | 108 | 103 | | |
| 12/21/2019 | 40' W OF E AT | BSB | PX | 324 | 860 | 4.0 | | | P | 108 | 108 | 130 | | |
| | ES44-ES45 | | | | | | | | S | 141 | 163 | | | |
| | PDT-38 | | | | | | | | P | 121 | 100 | NA | * FIELD TEST FAIL-PEEL>50%, R | |
| 12/21/2019 | 16' W OF E AT | BSB | BX | 479 | 860 | 3.0 | | | P | 103 | 116 | NA | | |
| | E49-E50 | | | | | | | | S | NA | NA | | | |
| | PDT-39 | | | | | | | | P | 128 | 121 | 132 | | |
| 12/21/2019 | 80' W OF E AT E51-E52 | DG | PX | 324 | 860 | 4.0 | | | P | 114 | 114 | 104 | | |
| | | | | | | | | | S | 134 | 135 | | | |
| | PDT-40 | | | | | | | | P | 120 | 116 | 143 | | |
| 12/21/2019 | 92' W OF AT ES54- | DG | PX | 324 | 860 | 4.0 | | | P | 121 | 110 | 122 | | |
| | ES55/ES56 | | | | | | | | S | 139 | 139 | | | |

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505.867.6990

# FML DESTRUCTIVE FIELD TEST RECORD

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics **CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico **SHEET NUMBER:** 5

**PROJECT SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FUSION | TEXTURED: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| | SMOOTH: | PEEL | 90 | lbs/in | SHEAR | 120 | lbs/in |
| EXTRUSION | TEXTURED: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |
| | SMOOTH: | PEEL | 78 | lbs/in | SHEAR | | lbs/in |

| DATE | DT # | QC INITIALS | WELDER'S INITIALS | MACHINE NUMBER | WEDGE WELDS | | EXTRUSION WELDS | | PULL | FIELD TEST RESULTS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Temperature | Speed | Barrel Temp | Pre-Heat Temp | | Test #1 | Test #2 | Test #3 | Test #4 | Test #5 |
| | PDT-41 | | | | | | | | P | 100 | 118 | 109 | | |
| 12/21/2019 | 35' W OF AT | DG | BX | 479 | 860 | 3.0 | | | P | 107 | 106 | 111 | | |
| | ES57-ES58 | | | | | | | | S | 139 | 160 | | | |
| | PDT-42 | | | | | | | | P | 113 | 129 | 121 | | |
| 12/21/2019 | 10' S OF P66/67-E62 INT | DG | AM | 6 | 860 | 2.3 | | | P | 141 | 118 | 121 | | |
| | E62-P67 | | | | | | | | S | 134 | 139 | | | |
| | PDT-43 | | | | | | | | P | 100 | 100 | 131 | | |
| 12/21/2019 | 10' W OF E AT | DG | PX | 324 | 860 | 4.0 | | | P | 118 | 133 | 127 | | |
| | ES64-ES66 | | | | | | | | S | 153 | 153 | | | |
| | PDT-44 | | | | | | | | P | 116 | 102 | 123 | | |
| 12/21/2019 | 125' W OF AT | DG | BX | 479 | 860 | 3.0 | | | P | 126 | 125 | 125 | | |
| | ES68-ES69 | | | | | | | | S | 143 | 139 | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | P | | | | | |
| | | | | | | | | | S | | | | | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.12. Geonet Deployment Log

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GEONET DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**DEPLOYMENT LOCATION:** GeoNet West Floor
**MONITOR:** Braden Belliveau

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 1 | 131517192 | 290 | 14.75 | 4,278 | 12/8/2019 |
| 1A | 131527379 | 231 | 14.75 | 3,407 | 12/8/19 |
| 2 | 131520034 | 290 | 14.75 | 4,278 | 12/8/2019 |
| 2A | 131529188 | 231 | 14.75 | 3,407 | 12/8/19 |
| 3 | 131520074 | 231 | 14.75 | 3,407 | 12/8/2019 |
| 4 | 131527160 | 230 | 14.75 | 3,393 | 12/8/2019 |
| 5 | 131529792 | 231 | 14.75 | 3,407 | 12/8/2019 |
| 6 | 131531771 | 228 | 14.75 | 3,363 | 12/8/2019 |
| 7 | 131527713 | 228 | 14.75 | 3,363 | 12/8/2019 |
| 8 | 131530164 | 231 | 14.75 | 3,407 | 12/8/2019 |
| 9 | 131527713 | 56 | 14.75 | 826 | 12/8/2019 |
| 10 | 131530164 | 50 | 14.75 | 738 | 12/8/2019 |
| 11 | 131531771 | 56 | 14.75 | 819 | 12/8/2019 |
| 12 | 131527160 | 64 | 14.75 | 944 | 12/8/2019 |
| 13 | 131516303 | 229 | 14.75 | 3,378 | 12/8/2019 |
| 14 | 131520083 | 229 | 14.75 | 3,378 | 12/8/2019 |
| 15 | 131527808 | 229 | 14.75 | 3,378 | 12/8/2019 |
| 16 | 131520084 | 230 | 14.75 | 3,393 | 12/8/2019 |
| 17 | 131528707 | 231 | 14.75 | 3,407 | 12/8/2019 |
| 18 | 131534345 | 230 | 14.75 | 3,393 | 12/8/2019 |
| 19 | 131534307 | 230 | 14.75 | 3,393 | 12/8/2019 |
| 20 | 131516409 | 231 | 14.75 | 3,407 | 12/8/2019 |
| 21 | 131520074 | 51 | 14.75 | 752 | 12/9/2019 |
| 22 | 131529230 | 180 | 14.75 | 2,655 | 12/9/2019 |
| 23 | 131516303 | 66 | 14.75 | 974 | 12/9/2019 |
| 24 | 131529230 | 20 | 14.75 | 295 | 12/9/2019 |
| 25 | 131527808 | 52 | 14.75 | 767 | 12/9/2019 |
| 26 | 131529230 | 93 | 14.75 | 1,372 | 12/9/2019 |
| 27 | 131520083 | 36 | 14.75 | 531 | 12/9/2019 |
| 28 | 131520084 | 92 | 14.75 | 1,357 | 12/9/2019 |
| 29 | 131529792 | 63 | 14.75 | 929 | 12/9/2019 |
| 30 | 131520083 | 33 | 14.75 | 487 | 12/9/2019 |
| 31 | 131533350 | 229 | 14.75 | 3,378 | 12/9/2019 |
| 32 | 131520046 | 228 | 14.75 | 3,363 | 12/9/2019 |
| 33 | 131516113 | 229 | 14.75 | 3,378 | 12/9/2019 |
| 34 | 131533349 | 230 | 14.75 | 3,393 | 12/9/2019 |
| 35 | 131516300 | 230 | 14.75 | 3,393 | 12/9/2019 |
| 36 | 131537937 | 231 | 14.75 | 3,407 | 12/9/2019 |
| 37 | 131530042 | 232 | 14.75 | 3,422 | 12/10/2019 |
| 38 | 131527524 | 231 | 14.75 | 3,407 | 12/10/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 103,420 | |

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Rio Rancho, New Mexico 87124
505.867.6990

# GEONET DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**DEPLOYMENT LOCATION:** GeoNet West & East Floor
**MONITOR:** Diego Ramirez

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 39 | 131528707 | 50 | 14.75 | 738 | 12/10/2019 |
| 40 | 131534345 | 65 | 14.75 | 959 | 12/10/2019 |
| 41 | 131528707 | 13 | 14.75 | 192 | 12/10/2019 |
| 42 | 131534307 | 54 | 14.75 | 797 | 12/10/2019 |
| 43 | 131516409 | 52 | 14.75 | 767 | 12/10/2019 |
| 44 | 131530073 | 132 | 14.75 | 1,947 | 12/10/2019 |
| 45 | 131520046 | 58 | 14.75 | 856 | 12/10/2019 |
| 46 | 131533349 | 52 | 14.75 | 767 | 12/10/2019 |
| 47 | 131530042 | 50 | 14.75 | 738 | 12/10/2019 |
| 48 | 131530073 | 150 | 14.75 | 2,213 | 12/10/2019 |
| 49 | 131516302 | 29 | 14.75 | 428 | 12/10/2019 |
| 50 | 131516302 | 228 | 14.75 | 3,363 | 12/10/2019 |
| 51 | 131516302 | 28 | 14.75 | 413 | 12/10/2019 |
| 52 | 131533270 | 203 | 14.75 | 2,994 | 12/10/2019 |
| 53 | 131517159 | 197 | 14.75 | 2,906 | 12/10/2019 |
| 54 | 131517159 | 34 | 14.75 | 502 | 12/10/2019 |
| 55 | 131533350 | 78 | 14.75 | 1,151 | 12/10/2019 |
| 56 | 131537937 | 55 | 14.75 | 811 | 12/10/2019 |
| 57 | 131516168 | 134 | 14.75 | 1,977 | 12/10/2019 |
| 58 | 131517159 | 97 | 14.75 | 1,431 | 12/10/2019 |
| 59 | 131530032 | 231 | 14.75 | 3,407 | 12/10/2019 |
| 60 | 131530032 | 50 | 14.75 | 738 | 12/10/2019 |
| 61 | 131517191 | 180 | 14.75 | 2,655 | 12/10/2019 |
| 62 | 131517191 | 100 | 14.75 | 1,475 | 12/10/2019 |
| 63 | 131517268 | 130 | 14.75 | 1,918 | 12/10/2019 |
| 64 | 131517268 | 160 | 14.75 | 2,360 | 12/10/2019 |
| 65 | 131534039 | 67 | 14.75 | 988 | 12/10/2019 |
| 66 | 131534039 | 216 | 14.75 | 3,186 | 12/10/2019 |
| 67 | 131520075 | 12 | 14.75 | 177 | 12/10/2019 |
| 68 | 131520075 | 232 | 14.75 | 3,422 | 12/10/2019 |
| 69 | 131520075 | 40 | 14.75 | 590 | 12/10/2019 |
| 70 | 131520045 | 191 | 14.75 | 2,817 | 12/10/2019 |
| 71 | 131520045 | 25 | 14.75 | 369 | 12/10/2019 |
| 72 | 131520075 | 22 | 14.75 | 325 | 12/10/2019 |
| 73 | 131533220 | 210 | 14.75 | 3,098 | 12/18/2019 |
| 73A | 131534237 | 191 | 10 | 1,910 | 12/18/19 |
| 74 | 131533220 | 70 | 14.75 | 1,033 | 12/18/2019 |
| 75 | 131529742 | 137 | 14.75 | 2,021 | 12/18/2019 |
| 76 | 131529742 | 90 | 14.75 | 1,328 | 12/18/2019 |
| 77 | 131529742 | 125 | 14.75 | 1,844 | 12/18/2019 |
| **TOTAL LINER PLACED ($FT^2$):** | | | | 61,603 | |

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# GEONET DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**DEPLOYMENT LOCATION:** GeoNet East Floor
**MONITOR:** Diego Ramirez

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 78 | 131529733 | 192 | 14.75 | 2,832 | 12/18/2019 |
| 79 | 131516112 | 15 | 14.75 | 221 | 12/18/2019 |
| 80 | 131516112 | 209 | 14.75 | 3,083 | 12/18/2019 |
| 81 | 131516112 | 57 | 14.75 | 841 | 12/18/2019 |
| 82 | 131528709 | 150 | 14.75 | 2,213 | 12/18/2019 |
| 83 | 131528709 | 107 | 14.75 | 1,578 | 12/18/2019 |
| 84 | 131533270 | 70 | 14.75 | 1,033 | 12/18/2019 |
| 85 | 131516168 | 18 | 14.75 | 266 | 12/18/2019 |
| 86 | 131533270 | 15 | 14.75 | 221 | 12/18/2019 |
| 87 | 131517266 | 209 | 14.75 | 3,083 | 12/18/2019 |
| 88 | 131534040 | 209 | 14.75 | 3,083 | 12/18/2019 |
| 89 | 131516168 | 146 | 14.75 | 2,154 | 12/18/2019 |
| 90 | 131516300 | 56 | 14.75 | 826 | 12/18/2019 |
| 91 | 131534433 | 31 | 14.75 | 457 | 12/18/2019 |
| 92 | 131534433 | 110 | 14.75 | 1,623 | 12/18/2019 |
| 93 | 131534433 | 110 | 14.75 | 1,623 | 12/18/2019 |
| 94 | 131527676 | 206 | 14.75 | 3,039 | 12/18/2019 |
| 95 | 131533269 | 203 | 14.75 | 2,994 | 12/18/2019 |
| 96 | 131529768 | 202 | 14.75 | 2,980 | 12/18/2019 |
| 97 | 131529768 | 82 | 14.75 | 1,210 | 12/18/2019 |
| 98 | 131531798 | 124 | 14.75 | 1,829 | 12/18/2019 |
| 99 | 131531798 | 160 | 14.75 | 2,360 | 12/18/2019 |
| 100 | 131527379 | 35 | 14.75 | 516 | 12/18/2019 |
| 101 | 131527379 | 30 | 14.75 | 443 | 12/18/2019 |
| 102 | 131528521 | 164 | 14.75 | 2,419 | 12/18/2019 |
| 103 | 131528521 | 40 | 14.75 | 590 | 12/18/2019 |
| 104 | 131531749 | 21 | 14.75 | 310 | 12/18/2019 |
| 105 | 131531749 | 118 | 14.75 | 1,741 | 12/18/2019 |
| 106 | 131528894 | 187 | 14.75 | 2,758 | 12/18/2019 |
| 107 | 131528894 | 30 | 14.75 | 443 | 12/18/2019 |
| 108 | 131516169 | 154 | 14.75 | 2,272 | 12/18/2019 |
| 109 | 131528894 | 64 | 14.75 | 944 | 12/18/2019 |
| 110 | 131527523 | 124 | 14.75 | 1,829 | 12/18/2019 |
| 111 | 131527523 | 183 | 14.75 | 2,699 | 12/18/2019 |
| 112 | 131529016 | 184 | 14.75 | 2,714 | 12/18/2019 |
| 113 | 131529016 | 65 | 14.75 | 959 | 12/18/2019 |
| 114 | 131529016 | 32 | 14.75 | 472 | 12/18/2019 |
| 115 | 131529734 | 88 | 14.75 | 1,298 | 12/18/2019 |
| 116 | 131529734 | 178 | 14.75 | 2,626 | 12/18/2019 |
| 117 | 131529735 | 184 | 14.75 | 2,714 | 12/18/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 67,290 | |

GORDON ENVIRONMENTAL PSC

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# GEONET DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**DEPLOYMENT LOCATION:** GeoNet East Floor
**MONITOR:** Diego Ramirez

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| 118 | 131530029 | 185 | 14.75 | 2,729 | 12/18/2019 |
| 119 | 131530074 | 134 | 14.75 | 1,977 | 12/18/2019 |
| 120 | 131516113 | 57 | 14.75 | 841 | 12/18/2019 |
| 121 | 131530031 | 121 | 14.75 | 1,785 | 12/18/2019 |
| 122 | 131530031 | 18 | 14.75 | 266 | 12/18/2019 |
| 123 | 131529188 | 50 | 14.75 | 738 | 12/18/2019 |
| 124 | 131530031 | 86 | 14.75 | 1,269 | 12/18/2019 |
| 125 | 131531748 | 97 | 14.75 | 1,431 | 12/18/2019 |
| 126 | 131531748 | 30 | 14.75 | 443 | 12/18/2019 |
| 127 | 131531748 | 146 | 14.75 | 2,154 | 12/18/2019 |
| 128 | 131527524 | 48 | 14.75 | 708 | 12/18/2019 |
| 129 | 131530074 | 124 | 14.75 | 1,829 | 12/18/2019 |
| 130 | 131527897 | 183 | 14.75 | 2,699 | 12/18/2019 |
| 131 | 131528706 | 183 | 14.75 | 2,699 | 12/18/2019 |
| 132 | 131528706 | 97 | 14.75 | 1,431 | 12/18/2019 |
| 133 | 131533269 | 50 | 14.75 | 738 | 12/18/2019 |
| 134 | 131530074 | 35 | 14.75 | 516 | 12/18/2019 |
| 135 | 131528708 | 184 | 14.75 | 2,714 | 12/18/2019 |
| 136 | 131527676 | 65 | 14.75 | 959 | 12/18/2019 |
| 137 | 131529229 | 120 | 14.75 | 1,770 | 12/18/2019 |
| 138 | 131533269 | 40 | 14.75 | 590 | 12/18/2019 |
| 139 | 131527362 | 142 | 14.75 | 2,095 | 12/18/2019 |
| 140 | 131534040 | 21 | 14.75 | 310 | 12/18/2019 |
| 141 | 131531749 | 161 | 14.75 | 2,375 | 12/18/2019 |
| 142 | 131534040 | 61 | 14.75 | 900 | 12/18/2019 |
| 143 | 131527362 | 120 | 14.75 | 1,770 | 12/18/2019 |
| 144 | 131529229 | 181 | 14.75 | 2,670 | 12/18/2019 |
| 145 | 131534433 | 40 | 9 | 360 | 12/19/19 |
| 146 | 131534433 | 40 | 6 | 240 | 12/19/19 |
| 147 | 131529229 | 35 | 14.75 | 516 | 12/19/19 |
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| **TOTAL LINER PLACED ($FT^2$):** | | | | 41,517 | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.13. Primary FML Deployment Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**DEPLOYMENT LOCATION:** Primary, West Side, Floor, Smooth
**MONITOR:** Braden Belliveau, Diego Ramirez

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| P1 | 06-1055430 | 520 | 22.5 | 11,700.0 | 12/7/2019 |
| P2 | 06-1055412 | 65 | 22.5 | 1,462.5 | 12/7/2019 |
| P3 | 06-1055450 | 231 | 22.5 | 5,220.0 | 12/10/2019 |
| P4 | 06-1055450 | 231 | 22.5 | 5,220.0 | 12/10/2019 |
| P5 | 06-1055450 | 60 | 22.5 | 1,395.0 | 12/10/2019 |
| P6 | 06-1055423 | 169 | 22.5 | 3,802.5 | 12/10/2019 |
| P7 | 06-1055423 | 231 | 22.5 | 5,175.0 | 12/10/2019 |
| P8 | 06-1055423 | 105 | 22.5 | 2,407.5 | 12/10/2019 |
| P9 | 06-1055458 | 123 | 22.5 | 2,767.5 | 12/10/2019 |
| P10 | 06-1055458 | 230 | 22.5 | 5,175.0 | 12/10/2019 |
| P11 | 06-1055458 | 169 | 22.5 | 3,791.3 | 12/10/2019 |
| P12 | 06-1055459 | 62 | 22.5 | 1,383.8 | 12/10/2019 |
| P13 | 06-1055459 | 229 | 22.5 | 5,152.5 | 12/10/2019 |
| P14 | 06-1055459 | 230 | 22.5 | 5,175.0 | 12/10/2019 |
| P15 | 06-1055446 | 230 | 22.5 | 5,175.0 | 12/10/2019 |
| P16 | 06-1055446 | 231 | 22.5 | 5,197.5 | 12/10/2019 |
| P17 | 06-1055420 | 57 | 22.5 | 1,282.5 | 12/10/2019 |
| P18 | 06-1055420 | 173 | 22.5 | 3,892.5 | 12/10/2019 |
| P19 | 06-1055420 | 230 | 22.5 | 5,175.0 | 12/10/2019 |
| P20 | 06-1055420 | 114 | 22.5 | 2,565.0 | 12/12/2019 |
| P21 | 06-1055462 | 117 | 22.5 | 2,632.5 | 12/12/2019 |
| P22 | 06-1055420 | 230 | 22.5 | 5,175.0 | 12/12/2019 |
| P23 | 06-1055462 | 174 | 22.5 | 3,915.0 | 12/12/2019 |
| P24 | 06-1055460 | 58 | 22.5 | 1,305.0 | 12/12/2019 |
| P25 | 06-1055460 | 230 | 22.5 | 5,175.0 | 12/12/2019 |
| P26 | 06-1055460 | 230 | 22.5 | 5,175.0 | 12/12/2019 |
| P27 | 06-1055460 | 231 | 22.5 | 5,197.5 | 12/12/2019 |
| P28 | 06-1055425 | 230 | 22.5 | 5,175.0 | 12/12/2019 |
| P29 | 06-1055425 | 58 | 22.5 | 1,305.0 | 12/12/2019 |
| P30 | 06-1055464 | 172 | 22.5 | 3,870.0 | 12/12/2019 |
| P31 | 06-1055464 | 229 | 22.5 | 5,152.5 | 12/12/2019 |
| P32 | 06-1055464 | 113 | 22.5 | 2,542.5 | 12/12/2019 |
| P33 | 06-1055464 | 117 | 22.5 | 2,632.5 | 12/12/2019 |
| P34 | 06-1055456 | 230 | 22.5 | 5,175.0 | 12/12/2019 |
| P35 | 06-1055456 | 175 | 22.5 | 3,937.5 | 12/12/2019 |
| P36 | 06-1055447 | 55 | 22.5 | 1,237.5 | 12/12/2019 |
| P37 | 06-1055447 | 230 | 22.5 | 5,175.0 | 12/12/2019 |
| P38 | 06-1055447 | 230 | 22.5 | 5,175.0 | 12/13/2019 |
| P39 | 06-1055406 | 86 | 12.0 | 1,032.0 | 12/13/2019 |
| P40 | 06-1055427 | 196 | 22.5 | 4,410.0 | 12/19/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 158,509.5 | |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
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505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**DEPLOYMENT LOCATION:** Primary, West Side, Floor, Smooth
**MONITOR:** Diego Ramirez

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| P41 | 06-1055427 | 198 | 22.5 | 4,455.0 | 12/19/2019 |
| P42 | 06-1055427 | 112 | 22.5 | 2,520.0 | 12/19/2019 |
| P43 | 06-1055457 | 87 | 22.5 | 1,957.5 | 12/19/2019 |
| P44 | 06-1055457 | 195 | 22.5 | 4,387.5 | 12/19/2019 |
| P45 | 06-1055457 | 194 | 22.5 | 4,365.0 | 12/19/2019 |
| P46 | 06-1055457 | 37 | 22.5 | 832.5 | 12/19/2019 |
| P47 | 06-1055401 | 156 | 22.5 | 3,510.0 | 12/19/2019 |
| P48 | 06-1055401 | 190 | 22.5 | 4,275.0 | 12/19/2019 |
| P49 | 06-1055401 | 160 | 22.5 | 3,600.0 | 12/19/2019 |
| P50 | 06-1055435 | 30 | 22.5 | 675.0 | 12/19/2019 |
| P51 | 06-1055435 | 189 | 22.5 | 4,252.5 | 12/19/2019 |
| P52 | 06-1055435 | 12 | 22.5 | 270.0 | 12/19/2019 |
| P53 | 06-1055435 | 176 | 22.5 | 3,960.0 | 12/19/2019 |
| P54 | 06-1055435 | 84 | 22.5 | 1,890.0 | 12/19/2019 |
| P55 | 06-1055428 | 104 | 22.5 | 2,340.0 | 12/19/2019 |
| P56 | 06-1055428 | 186 | 22.5 | 4,185.0 | 12/19/2019 |
| P57 | 06-1055428 | 184 | 22.5 | 4,140.0 | 12/19/2019 |
| P58 | 06-1055428 | 31 | 22.5 | 697.5 | 12/19/2019 |
| P59 | 06-1055448 | 150 | 22.5 | 3,375.0 | 12/19/2019 |
| P60 | 06-1055448 | 180 | 22.5 | 4,050.0 | 12/19/2019 |
| P61 | 06-1055448 | 180 | 22.5 | 4,050.0 | 12/19/2019 |
| P62 | 06-1055444 | 179 | 22.5 | 4,027.5 | 12/19/2019 |
| P63 | 06-1055444 | 178 | 22.5 | 4,005.0 | 12/19/2019 |
| P64 | 06-1055444 | 162 | 22.5 | 3,645.0 | 12/19/2019 |
| P65 | 06-1055448 | 11 | 22.5 | 247.5 | 12/19/2019 |
| P66 | 06-1055414 | 176 | 22.5 | 3,960.0 | 12/19/2019 |
| P67 | 06-1055414 | 176 | 22.5 | 3,960.0 | 12/19/2019 |
| P68 | 06-1055414 | 154 | 22.5 | 3,465.0 | 12/19/2019 |
| P69 | 06-1055424 | 22 | 22.5 | 495.0 | 12/19/2019 |
| P70 | 06-1055424 | 174 | 22.5 | 3,915.0 | 12/19/2019 |
| P71 | 06-1055424 | 173 | 22.5 | 3,892.5 | 12/19/2019 |
| P72 | 06-1055424 | 122 | 22.5 | 2,745.0 | 12/19/2019 |
| P73 | 06-1055438 | 50 | 22.5 | 1,125.0 | 12/19/2019 |
| P74 | 06-1055438 | 170 | 22.5 | 3,825.0 | 12/19/2019 |
| P75 | 06-1055438 | 168 | 22.5 | 3,780.0 | 12/19/2019 |
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| | | | **TOTAL LINER PLACED ($FT^2$):** | 106,875.0 | |

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**CLIENT:** Oilfield Well Logistics
**PROJECT LOCATION:** Lea County, New Mexico
**PROJECT NUMBER:** 56019
**CONTRACTOR:** Mustang Extreme
**SHEET NUMBER:** 3

**DEPLOYMENT LOCATION:** Primary, West Side & East Side, North & East Slopes, Textured
**MONITOR:** Don Gray

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| NS1 | 101496565 | 135 | 22.5 | 3,037.5 | 12/7/2019 |
| NS2 | 101496556 | 128 | 22.5 | 2,880.0 | 12/12/2019 |
| NS3 | 101496556 | 128 | 22.5 | 2,880.0 | 12/12/2019 |
| NS4 | 101496556 | 126 | 22.5 | 2,835.0 | 12/12/2019 |
| NS5 | 101496557 | 15 | 22.5 | 337.5 | 12/12/2019 |
| NS6 | 101496556 | 113 | 22.5 | 2,542.5 | 12/12/2019 |
| NS7 | 101496557 | 124 | 22.5 | 2,790.0 | 12/12/2019 |
| NS8 | 101496557 | 128 | 22.5 | 2,880.0 | 12/12/2019 |
| NS9 | 101496557 | 123 | 22.5 | 2,767.5 | 12/12/2019 |
| NS10 | 101496557 | 124 | 22.5 | 2,790.0 | 12/12/2019 |
| NS11 | 101496565 | 121 | 22.5 | 2,722.5 | 12/12/2019 |
| NS12 | 101496565 | 118 | 22.5 | 2,655.0 | 12/12/2019 |
| NS13 | 101496565 | 60 | 11.0 | 660.0 | 12/12/2019 |
| NS14 | 101496565 | 58 | 11.0 | 638.0 | 12/12/2019 |
| NS15 | 101496580 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS16 | 101496580 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS17 | 101496580 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS18 | 101496580 | 112 | 22.5 | 2,520.0 | 12/20/2019 |
| NS19 | 101496586 | 23 | 22.5 | 517.5 | 12/20/2019 |
| NS20 | 101496586 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS21 | 101496586 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS22 | 101496586 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS23 | 101496586 | 75 | 22.5 | 1,687.5 | 12/20/2019 |
| NS24 | 101496564 | 60 | 22.5 | 1,350.0 | 12/20/2019 |
| NS25 | 101496564 | 135 | 22.5 | 3,037.5 | 12/20/2019 |
| NS26 | 101496564 | 123 | 22.5 | 2,767.5 | 12/20/2019 |
| NS27 | 101496564 | 97 | 22.5 | 2,182.5 | 12/20/2019 |
| NS28 | 101496564 | 72 | 22.5 | 1,620.0 | 12/20/2019 |
| NS29 | 101496582 | 49 | 22.5 | 1,102.5 | 12/20/2019 |
| NS30 | 101496582 | 23 | 9.0 | 207.0 | 12/20/2019 |
| ES31 | 101496582 | 23 | 9.0 | 207.0 | 12/20/2019 |
| ES32 | 101496582 | 43 | 22.5 | 967.5 | 12/20/2019 |
| ES33 | 101496582 | 64 | 22.5 | 1,440.0 | 12/20/2019 |
| ES34 | 101496582 | 84 | 22.5 | 1,890.0 | 12/20/2019 |
| ES35 | 101496582 | 64 | 22.5 | 1,440.0 | 12/20/2019 |
| ES36 | 101496564 | 25 | 22.5 | 562.5 | 12/20/2019 |
| ES37 | 101496570 | 113 | 22.5 | 2,542.5 | 12/20/2019 |
| ES38 | 101496570 | 115 | 22.5 | 2,587.5 | 12/20/2019 |
| ES39 | 101496570 | 115 | 22.5 | 2,587.5 | 12/20/2019 |
| ES40 | 101496570 | 115 | 22.5 | 2,587.5 | 12/20/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 84,444.5 | |

GORDON PSC ENVIRONMENTAL

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML DEPLOYMENT LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 56019
**CLIENT:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**DEPLOYMENT LOCATION:** Primary, East Side, East Slope, Textured
**MONITOR:** Don Gray

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| ES41 | 101496570 | 58 | 22.5 | 1,305.0 | 12/20/2019 |
| ES42 | 101496572 | 58 | 22.5 | 1,305.0 | 12/20/2019 |
| ES43 | 101496572 | 117 | 22.5 | 2,632.5 | 12/20/2019 |
| ES44 | 101496572 | 118 | 22.5 | 2,655.0 | 12/20/2019 |
| ES45 | 101496572 | 120 | 22.5 | 2,700.0 | 12/20/2019 |
| ES46 | 101496572 | 106 | 22.5 | 2,385.0 | 12/20/2019 |
| ES47 | 101496584 | 15 | 22.5 | 337.5 | 12/20/2019 |
| ES48 | 101496584 | 122 | 22.5 | 2,745.0 | 12/20/2019 |
| ES49 | 101496584 | 123 | 22.5 | 2,767.5 | 12/20/2019 |
| ES50 | 101496584 | 124 | 22.5 | 2,790.0 | 12/20/2019 |
| ES51 | 101496584 | 125 | 22.5 | 2,812.5 | 12/20/2019 |
| ES52 | 101496573 | 128 | 22.5 | 2,880.0 | 12/20/2019 |
| ES53 | 101496573 | 130 | 22.5 | 2,925.0 | 12/20/2019 |
| ES54 | 101496573 | 132 | 22.5 | 2,970.0 | 12/21/2019 |
| ES55 | 101496573 | 121 | 22.5 | 2,722.5 | 12/21/2019 |
| ES56 | 101496585 | 13 | 22.5 | 292.5 | 12/21/2019 |
| ES57 | 101496585 | 134 | 22.5 | 3,015.0 | 12/21/2019 |
| ES58 | 101496585 | 134 | 22.5 | 3,015.0 | 12/21/2019 |
| ES59 | 101496585 | 133 | 22.5 | 2,992.5 | 12/21/2019 |
| ES60 | 101496585 | 85 | 22.5 | 1,912.5 | 12/21/2019 |
| ES61 | 101496578 | 54 | 22.5 | 1,215.0 | 12/21/2019 |
| ES62 | 101496578 | 138 | 22.5 | 3,105.0 | 12/21/2019 |
| ES63 | 101496578 | 139 | 22.5 | 3,127.5 | 12/21/2019 |
| ES64 | 101496578 | 136 | 22.5 | 3,060.0 | 12/21/2019 |
| ES65 | 101496578 | 43 | 22.5 | 967.5 | 12/21/2019 |
| ES66 | 101496577 | 96 | 22.5 | 2,160.0 | 12/21/2019 |
| ES67 | 101496577 | 133 | 22.5 | 2,992.5 | 12/21/2019 |
| ES68 | 101496577 | 133 | 22.5 | 2,992.5 | 12/21/2019 |
| ES69 | 101496577 | 133 | 22.5 | 2,992.5 | 12/21/2019 |
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| **TOTAL LINER PLACED ($FT^2$):** | | | | 69,772.5 | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.14. Primary FML Seaming Log

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**SEAMING LOCATION:** Primary FML, West Floor

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/7/2019 | NS1-P1 | 22.3 | 14:05 | PX | 11 | 860 | 4.0 | | DG |
| 2 | 12/7/2019 | P1-P2 | 22.3 | 14:11 | BX | 324 | 860 | 4.5 | | DG |
| 3 | 12/10/2019 | P1-P3 | 22.3 | 08:12 | PX | 11 | 860 | 3.6 | | |
| 4 | 12/10/2019 | P3-P4 | 230 | 0836 | PX | 11 | 860 | 3.0 | PDT-1 | BSB |
| 5 | 12/10/2019 | P4-P5/P6 | 230 | 0915 | BX | 324 | 860 | 4.0 | PDT-2 | BSB |
| 6 | 12/10/2019 | P5-P6 | 22.3 | 0907 | BX | 324 | 860 | 4.0 | | BSB |
| 7 | 12/10/2019 | P5/P6-P7 | 230 | 0929 | PX | 11 | 860 | 3.6 | | BSB |
| 8 | 12/10/2019 | P7-P8/P9 | 230 | 0945 | DX | 6 | 860 | 3.5 | PDT-3 | BSB |
| 9 | 12/10/2019 | P8-P9 | 22.3 | 0943 | DX | 6 | 860 | 3.5 | | BSB |
| 10 | 12/10/2019 | P8/P9-P10 | 230 | 0955 | BX | 324 | 860 | 4.5 | | BSB |
| 11 | 12/10/2019 | P12/P11-P10 | 230 | 1010 | PX | 11 | 860 | 3.6 | | BSB |
| 12 | 12/10/2019 | P13-P12/P11 | 230 | 1016 | DX | 6 | 860 | 3.5 | PDT-4 | BSB |
| 13 | 12/10/2019 | P11-P12 | 22.3 | 1004 | PX | 11 | 860 | 3.6 | | BSB |
| 14 | 12/10/2019 | P13-P14 | 230 | 1035 | BX | 324 | 860 | 4.5 | | BSB |
| 15 | 12/10/2019 | P14-P15 | 230 | 1122 | BX | 324 | 860 | 4.5 | PDT-5 | DR |
| 16 | 12/10/2019 | P15-P16 | 230 | 1129 | PX | 11 | 860 | 3.6 | | |
| 17 | 12/10/2019 | P16-P18/P17 | 230 | 1340 | BX | 324 | 860 | 4.5 | PDT-6 | DR |
| 18 | 12/10/2019 | P18-P17 | 22.3 | 1351 | PX | 11 | 860 | 3.6 | | DR |
| 19 | 12/10/2019 | P18/P17-P19 | 230 | 1340 | DX | 6 | 860 | 3.5 | | DR |
| 20 | 12/10/2019 | P1-(P4-P19) | 268 | 1423 | PX | 11 | 860 | 3.6 | | DR |
| 21 | 12/12/2019 | P19-P21/P20 | 230 | 0906 | PX | 11 | 860 | 3.6 | PDT-7 | DR |
| 22 | 12/12/2019 | P21-P20 | 22.3 | 0904 | BX | 324 | 860 | 4.0 | | DR |
| 23 | 12/12/2019 | P22-P20/P21 | 230 | 0840 | BX | 324 | 860 | 4.0 | PDT-8 | DR |
| 24 | 12/12/2019 | P22-P24/P23 | 230 | 0940 | BX | 479 | 860 | 4.0 | | DR |
| 25 | 12/12/2019 | P24-P23 | 22.3 | 0928 | BX | 324 | 860 | 4.0 | | DR |
| 26 | 12/12/2019 | P23/P24-P25 | 230 | 0941 | PX | 11 | 860 | 3.6 | PDT-9 | DR |
| 27 | 12/12/2019 | P25-P26 | 230 | 1020 | BX | 324 | 860 | 4.0 | | DR |
| 28 | 12/12/2019 | P27-P26 | 230 | 1015 | PX | 11 | 860 | 3.6 | PDT-10 | DR |
| 29 | 12/12/2019 | P28-P27 | 230 | 1105 | BX | 324 | 860 | 4.0 | | DR |

GORDON ENVIRONMENTAL PSC

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**SEAMING LOCATION:** Primary FML, West Floor, North Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 12/12/2019 | P28-P30/P29 | 230 | 1054 | PX | 11 | 860 | 3.6 | PDT-11 | DR |
| 31 | 12/12/2019 | P29-P30 | 22.3 | 1049 | PX | 11 | 860 | 3.6 | | DR |
| 32 | 12/12/2019 | P31-P29/P28 | 230 | 1127 | PX | 11 | 860 | 3.6 | | DR |
| 33 | 12/12/2019 | P32/P33-P31 | 230 | 1450 | BX | 479 | 860 | 4.0 | PDT-12 | DR |
| 34 | 12/12/2019 | P32-P33 | 22.3 | 1439 | PX | 11 | 860 | 3.6 | | DR |
| 35 | 12/12/2019 | P32/P33-P34 | 230 | 1453 | PX | 11 | 860 | 3.6 | | DR |
| 36 | 12/12/2019 | P34-P36/P35 | 230 | 1534 | BX | 479 | 860 | 4.0 | PDT-13 | DG |
| 37 | 12/12/2019 | P36-P35 | 22.3 | 1523 | BX | 479 | 860 | 4.0 | | DG |
| 38 | 12/12/2019 | P36/P35-P37 | 230 | 1555 | BX | 479 | 860 | 4.0 | | DG |
| 39 | 12/12/2019 | P37-P38 | 230 | 1622 | BX | 479 | 860 | 4.0 | PDT-14 | DG |
| 40 | 12/12/2019 | P1-P20/P34 | 207.7 | 1528 | PX | 11 | 860 | 3.6 | | DG |
| 41 | 12/12/2019 | P2-P35/P38 | 89.2 | 1600 | PX | 11 | 860 | 3.6 | | DG |
| 42 | 12/13/2019 | P1-P38 | 22.3 | 1624 | PX | 11 | 860 | 3.6 | | DG |
| 43 | 12/13/2019 | P38-P39 | 86 | 1640 | PX | 11 | 860 | 3.6 | | DG |
| | | | | | | | | | | |
| 44 | 12/13/2019 | NS2-NS3 | 130 | 0920 | DX | 6 | 860 | 2.0 | PDT-18 | DG |
| 45 | 12/13/2019 | NS4-NS3 | 130 | 0940 | SP | 2 | 860 | 3.0 | | DG |
| 46 | 12/13/2019 | NS5/NS6-NS4 | 130 | 0939 | DX | 6 | 860 | 2.0 | | DG |
| 47 | 12/13/2019 | NS6-NS5 | 22.3 | 0955 | DX | 6 | 860 | 2.0 | | DG |
| 48 | 12/13/2019 | NS7-NS5/NS6 | 130 | 1000 | SP | 2 | 860 | 3.0 | PDT-17 | DG |
| 49 | 12/13/2019 | NS7-NS8 | 130 | 1030 | SP | 2 | 860 | 3.0 | | DG |
| 50 | 12/13/2019 | NS8-NS9 | 130 | 1025 | DX | 6 | 860 | 2.0 | | DG |
| 51 | 12/13/2019 | NS9-NS10 | 123 | 1103 | SP | 2 | 860 | 3.0 | PDT-16 | DG |
| 52 | 12/13/2019 | NS10-NS11 | 130 | 1050 | DX | 6 | 860 | 2.0 | | DG |
| 53 | 12/13/2019 | NS11-NS12 | 130 | 1115 | SP | 2 | 860 | 3.0 | | DG |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**SEAMING LOCATION:** Primary FML, North Slope & East Floor

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 54 | 12/13/2019 | NS12-NS13/NS14 | 130 | 1125 | DX | 6 | 860 | 2.0 | | DG |
| 55 | 12/13/2019 | NS13-NS14 | 22.3 | 1116 | DX | 6 | 860 | 2.0 | | DG |
| 56 | 12/19/2019 | P41-P40 | 198 | 0750 | DX | 2 | 860 | 3.0 | | DG |
| 57 | 12/19/2019 | P41-P42/P43 | 199 | 0754 | PX | 324 | 860 | 4.5 | PDT-19 | DR |
| 58 | 12/19/2019 | P43/P42-P44 | 195 | 0805 | BX | 479 | 860 | 4.0 | PDT-20 | DR |
| 59 | 12/19/2019 | P42-P43 | 22.3 | 0756 | BX | 479 | 860 | 4.0 | | DR |
| 60 | 12/19/2019 | P44-P45 | 195 | 0818 | AM | 6 | 860 | 3.0 | | DR |
| 61 | 12/19/2019 | P45-P47 | 197 | 0835 | DX | 2 | 860 | 3.0 | PDT-21 | DR |
| 62 | 12/19/2019 | P46/P47-P48 | 190 | 0828 | PX | 324 | 860 | 4.5 | | DR |
| 63 | 12/19/2019 | P47-P46 | 22.3 | 0830 | PX | 324 | 860 | 4.5 | | DR |
| 64 | 12/19/2019 | P48-P50/P49 | 30 | 0922 | PX | 324 | 860 | 4.5 | PDT-22 | DR |
| 65 | 12/19/2019 | P50-P49 | 22.3 | 0915 | PX | 324 | 860 | 4.5 | | DR |
| 66 | 12/19/2019 | P48/P50-P49 | 158 | 0857 | BX | 479 | 860 | 4.0 | | DR |
| 67 | 12/19/2019 | P40-P45 (EDGE OF LT ↓ S) | 102 | 0700 | AM | 6 | 860 | 3.0 | | DR |
| 68 | 12/19/2019 | P51-P50/P49 | 191 | 0915 | DX | 2 | 860 | 3.0 | | DR |
| 69 | 12/19/2019 | P51-P53/P52 | 190 | 0938 | PX | 324 | 860 | 4.5 | PDT-23 | DR |
| 70 | 12/19/2019 | P52-P53 | 22.3 | 0934 | PX | 324 | 860 | 4.0 | | DR |
| 71 | 12/19/2019 | P55/P54-P53/P52 | 188 | 0955 | DX | 2 | 860 | 3.0 | | DR |
| 72 | 12/19/2019 | P55-P54 | 22.3 | 0915 | BX | 479 | 860 | 4.0 | | DR |
| 73 | 12/19/2019 | P54/P55-P56 | 187 | 1000 | BX | 479 | 860 | 4.0 | PDT-24 | DR |
| 74 | 12/19/2019 | P56-P57 | 182 | 1018 | PX | 324 | 860 | 4.5 | | DR |
| 75 | 12/19/2019 | P58/P57-P59 | 181 | 1040 | DX | 2 | 860 | 3.0 | | DR |
| 76 | 12/19/2019 | P58-P57 | 22.3 | 1055 | BX | 479 | 860 | 4.0 | | DR |
| 77 | 12/19/2019 | P59-P60 | 182 | 1046 | VX | 479 | 860 | 4.0 | PDT-25 | DR |
| 78 | 12/19/2019 | P60-P61 | 179 | 1056 | PX | 324 | 860 | 4.5 | | DR |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**SEAMING LOCATION:** Primary FML, East Floory & Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 79 | 12/19/2019 | P62-P61 | 180 | 1125 | DX | 2 | 860 | 3.0 | PDT-26 | DR |
| 80 | 12/19/2019 | P62-P63 | 180 | 1130 | BX | 479 | 860 | 4.0 | | DR |
| 81 | 12/19/2019 | P45-P51 | 92 | 1010 | AM | 6 | 860 | 3.0 | | DR |
| 82 | 12/19/2019 | P51-P55 | 57 | 1016 | AM | 6 | 860 | 3.0 | | DR |
| 83 | 12/19/2019 | P63-P64 | 109 | 1507 | PX | 324 | 860 | 4.0 | PDT-27 | DR |
| 84 | 12/19/2019 | P64-P65 | 22.3 | 1157 | BX | 479 | 860 | 3.2 | | DR |
| 85 | 12/19/2019 | P64-P66 | 176 | 1509 | BX | 479 | 860 | 3.2 | | DR |
| 86 | 12/19/2019 | P66-P67 | 176 | 1515 | DX | 2 | 860 | 3.0 | | DR |
| 87 | 12/19/2019 | P67-P68/P69 | 176 | 1054 | PX | 324 | 860 | 4.0 | PDT-28 | DR |
| 88 | 12/19/2019 | P68/P69-P70 | 174 | 1054 | BX | 479 | 860 | 3.2 | | DR |
| 89 | 12/19/2019 | P70-P71 | 174 | 0710 | PX | 324 | 860 | 4.0 | PDT-29 | DR |
| 90 | 12/19/2019 | P71-P72/P73 | 173 | 0700 | DX | 2 | 860 | 3.0 | | DR |
| 91 | 12/19/2019 | P73-P74 | 170 | 0646 | PX | 324 | 860 | 4.0 | PDT-30 | DR |
| 92 | 12/20/2019 | LSump-NS15 | 135 | 0800 | AM | 6 | 860 | 2.0 | | DR |
| 93 | 12/20/2019 | NS15-NS16 | 135 | 0803 | PX | 324 | 860 | 4.0 | PDT-31 | DR |
| 94 | 12/20/2019 | NS16-NS17 | 135 | 0805 | BX | 479 | 860 | 3.2 | | DR |
| 95 | 12/20/2019 | NS19-NS17 | 22.3 | 0740 | DX | 2 | 860 | 3.0 | | DR |
| 96 | 12/20/2019 | NS18-NS19 | 22.3 | 0805 | DX | 2 | 860 | 3.0 | | DR |
| 97 | 12/20/2019 | NS18-NS17 | 112 | 0805 | DX | 2 | 860 | 3.0 | | DR |
| 98 | 12/20/2019 | NS18/NS19-NS20 | 135 | 0836 | BX | 479 | 860 | 3.2 | PDT-32 | DR |
| 99 | 12/20/2019 | NS20-NS21 | 135 | 0842 | PX | 324 | 860 | 4.0 | | DR |
| 100 | 12/20/2019 | NS21-NS22 | 135 | 0827 | DX | 2 | 860 | 3.0 | | DR |
| 101 | 12/20/2019 | NS22-NS23 | 75 | 0905 | BX | 479 | 860 | 3.2 | PDT-33 | DR |
| 102 | 12/20/2019 | NS23/NS24-NS25 | 135 | 0923 | PX | 324 | 860 | 4.0 | | DR |
| 103 | 12/20/2019 | NS24-NS22 | 60 | 0925 | BX | 479 | 860 | 3.2 | | DR |

GORDON ENVIRONMENTAL PSC

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 5

**SEAMING LOCATION:** Primary FML, East Floor & Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 104 | 12/20/2019 | NS15-NS25 (Floor to Slope) | 198 | 0950 | AM | 6 | 860 | 2.0 | | DR |
| 105 | 12/20/2019 | NS25-NS26 | 114 | 1005 | DX | 2 | 860 | 3.0 | | DR |
| 106 | 12/20/2019 | NS26-NS27 | 125 | 0945 | BX | 479 | 860 | 3.2 | | DR |
| 107 | 12/20/2019 | NS27-NS28 | 97 | 0959 | PX | 324 | 860 | 4.0 | | DR |
| 108 | 12/20/2019 | NS28-NS29 | 72 | 1055 | DX | 2 | 860 | 3.0 | PDT-34 | DR |
| 109 | 12/20/2019 | NS29-NS30 | 49 | 1015 | PX | 324 | 860 | 4.0 | | DR |
| 110 | 12/20/2019 | ES31-ES32 | 22.3 | 1035 | AM | 2 | 860 | 3.0 | | DR |
| 111 | 12/20/2019 | ES32-ES33 | 43 | 1039 | PX | 324 | 860 | 4.0 | | DR |
| 112 | 12/20/2019 | ES33-ES34 | 64 | 1045 | BX | 479 | 860 | 3.0 | | DR |
| 113 | 12/20/2019 | ES34-ES35 | 84 | 1103 | DX | 2 | 860 | 3.0 | | DR |
| 114 | 12/20/2019 | ES36-ES35 | 22.3 | 1112 | DX | 2 | 860 | 3.0 | | DR |
| 115 | 12/20/2019 | ES35/ES36-ES37 | 113 | 1120 | PX | 324 | 860 | 4.0 | PDT-35 | DR |
| 116 | 12/20/2019 | ES37-ES38 | 115 | 1122 | BX | 479 | 860 | 3.0 | | DR |
| 117 | 12/20/2019 | ES38-ES39 | 115 | 1130 | DX | 2 | 860 | 3.0 | | DR |
| 118 | 12/20/2019 | ES39-ES40 | 115 | 1335 | DX | 2 | 860 | 3.0 | PDT-36 | BSB |
| 119 | 12/20/2019 | ES40-ES41/ES42 | 115 | 1350 | BX | 479 | 860 | 3.0 | | BSB |
| 120 | 12/20/2019 | ES41-ES42 | 22.3 | 1340 | BX | 479 | 860 | 3.0 | | BSB |
| 121 | 12/20/2019 | ES41/ES42-ES43 | 115 | 1346 | PX | 324 | 860 | 4.0 | | BSB |
| 122 | 12/20/2019 | ES43-ES44 | 117 | 1406 | DX | 2 | 860 | 3.0 | | BSB |
| 123 | 12/20/2019 | ES44-ES45 | 120 | 1410 | PX | 324 | 860 | 4.0 | PDT-37 | BSB |
| 124 | 12/20/2019 | ES45-ES46/ES47 | 121 | 1420 | BX | 479 | 860 | 3.0 | | BSB |
| 125 | 12/20/2019 | ES46-ES47 | 22.5 | 1437 | PX | 324 | 860 | 4.0 | | BSB |
| 126 | 12/20/2019 | ES46/ES47-ES48 | 121 | 1440 | DX | 2 | 860 | 3.0 | | BSB |
| 127 | 12/20/2019 | ES48-ES49 | 123 | 1447 | PX | 324 | 860 | 4.0 | | BSB |
| 128 | 12/20/2019 | ES49-ES50 | 124 | 1453 | BX | 479 | 860 | 3.0 | PDT-38 | BSB |

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# FML SEAMING LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 6

**SEAMING LOCATION:** Primary Floor /North Slope

| | DATE | PANEL #/PANEL # | APPROX. LENGTH WELDED | START TIME | SEAMER INITIALS | MACHINE # | TEMP SETTING | SPEED SETTING | DESTRUCTIVE TEST | MONITORED BY |
|---|---|---|---|---|---|---|---|---|---|---|
| 129 | 12/20/2019 | ES50-ES51 | 126 | 1515 | DX | 2 | 860 | 3.0 | | DG |
| 130 | 12/20/2019 | ES51-ES52 | 128 | 1524 | PX | 324 | 860 | 4.0 | PDT-39 | DG |
| 131 | 12/20/2019 | ES52-ES53 | 130 | 1529 | BX | 479 | 860 | 3.0 | | DG |
| 132 | 12/20/2019 | ES53-ES54 | 134 | 1540 | DX | 2 | 860 | 3.0 | | DG |
| 133 | 12/20/2019 | ES54-ES55/ES56 | 132 | 1552 | PX | 324 | 860 | 4.0 | PDT-40 | DG |
| 134 | 12/20/2019 | ES55-ES56 | 22.3 | 1558 | DX | 2 | 860 | 3.0 | | DG |
| 135 | 12/20/2019 | ES55/ES56-ES57 | 134 | 1602 | BX | 324 | 860 | 3.0 | | DG |
| 136 | 12/20/2019 | ES57/ES56-P62/P61 | 45 | 1630 | AM | 6 | 860 | 2.3 | | DG |
| 137 | 12/20/2019 | ES55/ES51-P60/P56 | 112.5 | 1600 | AM | 6 | 860 | 2.3 | | DG |
| 138 | 12/20/2019 | ES50/ES47-P55/P50 | 90 | 1515 | AM | 6 | 860 | 2.3 | | DG |
| 139 | 12/20/2019 | ES45/ES41-P48/P44 | 90 | 1425 | AM | 6 | 860 | 2.3 | | DG |
| 140 | 12/20/2019 | ES40/ES31-P43/NS30 | 212 | 1355 | AM | 6 | 860 | 2.3 | | DG |
| 141 | 12/21/2019 | ES57-ES58 | 135 | 0720 | BX | 479 | 860 | 3.0 | PDT-41 | DG |
| 142 | 12/21/2019 | ES58-ES59 | 135 | 0721 | PX | 324 | 860 | 4.0 | | DG |
| 143 | 12/21/2019 | ES59-ES60/ES61 | 138 | 0750 | AM | 6 | 860 | 2.3 | | DG |
| 144 | 12/21/2019 | ES60-ES61 | 22.3 | 0740 | AM | 6 | 860 | 2.3 | | DG |
| 145 | 12/21/2019 | ES60/ES61-ES62 | 135 | 0746 | BX | 479 | 860 | 3.0 | | DG |
| 146 | 12/21/2019 | ES62-ES63 | 138 | 0753 | PX | 324 | 860 | 4.0 | PDT-42 | DG |
| 147 | 12/21/2019 | ES63-ES64 | 138 | 0817 | BX | 479 | 860 | 3.0 | | DG |
| 148 | 12/21/2019 | ES64-ES65/ES66 | 138 | 0839 | PX | 324 | 860 | 4.0 | PDT-43 | DG |
| 149 | 12/21/2019 | ES65-ES66 | 22.3 | 0833 | PX | 324 | 860 | 4.0 | | DG |
| 150 | 12/21/2019 | ES65/ES66-ES67 | 138 | 0846 | BX | 479 | 860 | 3.0 | | DG |
| 151 | 12/21/2019 | ES67-ES68 | 139 | 0905 | PX | 324 | 860 | 4.0 | | DG |
| 152 | 12/21/2019 | ES68-ES69 | 139 | 0915 | BX | 479 | 860 | 3.0 | PDT-44 | DG |
| 153 | 12/21/2019 | ES69/ES63-P75/P68 | 135 | 0940 | AM | 6 | 860 | 2.3 | | DG |
| 154 | 12/21/2019 | ES63-P69 | 22.3 | 0825 | AM | 6 | 860 | 2.3 | | DG |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.15. Primary FML Seam Pressure Test Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd., Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**PRESSURE TEST LOCATION:** Primary FML, West Floor & North Slope

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 1 | 12/12/2019 | NS12/NS14-F3 | AT | 1536 | 1541 | 35 | 35 | DG | Pass |
| 2 | 12/12/2019 | NS12-NS14 | AT | 1536 | 1541 | 35 | 35 | DG | Pass |
| 3 | 12/12/2019 | NS13-NS14 | AT | 1542 | 1547 | 35 | 35 | DG | Pass |
| 4 | 12/12/2019 | NS12-NS13 | AT | 1542 | 1547 | 35 | 35 | DG | Pass |
| 5 | 12/12/2019 | NS11-NS12 | AT | 1520 | 1525 | 35 | 35 | DG | Pass |
| 6 | 12/12/2019 | NS12-F3 | AT | 1520 | 1525 | 35 | 35 | DG | Pass |
| 7 | 12/12/2019 | NS10-NS11 | AT | 1524 | 1529 | 35 | 35 | DG | Pass |
| 8 | 12/12/2019 | NS11-F3 | AT | 1524 | 1529 | 35 | 35 | DG | Pass |
| 9 | 12/12/2019 | NS9-NS10 | AT | 1518 | 1523 | 35 | 35 | DG | Pass |
| 10 | 12/12/2019 | NS10-F3 | AT | 1518 | 1523 | 35 | 35 | DG | Pass |
| 11 | 12/12/2019 | NS8-NS9 | AT | 1511 | 1516 | 35 | 35 | DG | Pass |
| 12 | 12/12/2019 | NS9-F3 | AT | 1511 | 1516 | 35 | 35 | DG | Pass |
| 13 | 12/12/2019 | NS7-NS8 | AT | 1505 | 1510 | 35 | 35 | DG | Pass |
| 14 | 12/12/2019 | NS8-F3 | AT | 1505 | 1510 | 35 | 35 | DG | Pass |
| 15 | 12/12/2019 | NS5-NS6 | AT | 1400 | 1405 | 35 | 35 | DG | Pass |
| 16 | 12/12/2019 | NS6-NS7 | AT | 1400 | 1405 | 35 | 35 | DG | Pass |
| 17 | 12/12/2019 | NS5-NS7 | AT | 1355 | 1400 | 35 | 35 | DG | Pass |
| 18 | 12/12/2019 | NS7-F3 | AT | 1355 | 1400 | 35 | 35 | DG | Pass |
| 19 | 12/12/2019 | NS4-NS6 | AT | 1400 | 1405 | 35 | 35 | DG | Pass |
| 20 | 12/12/2019 | NS4-NS5 | AT | 1347 | 1352 | 35 | 35 | DG | Pass |
| 21 | 12/12/2019 | NS5-NS3 | AT | 1347 | 1352 | 35 | 35 | DG | Pass |
| 22 | 12/12/2019 | NS3-NS4 | AT | 1340 | 1345 | 35 | 35 | DG | Pass |
| 23 | 12/12/2019 | NS4-F3 | AT | 1340 | 1345 | 35 | 35 | DG | Pass |
| 24 | 12/12/2019 | NS2/NS3-F3 | AT | 1335 | 1340 | 35 | 35 | DG | Pass |
| 25 | 12/12/2019 | NS3-F3 | AT | 1335 | 1340 | 35 | 35 | DG | Pass |
| 26 | 12/12/2019 | NS1-NS2 | AT | 1430 | 1435 | 35 | 35 | DG | Pass |
| 27 | 12/12/2019 | NS2-F3 | AT | 1430 | 1435 | 35 | 35 | DG | Pass |
| 28 | 12/12/2019 | P7-P9 | DX | 1342 | 1347 | 35 | 35 | DG | Pass |
| 29 | 12/12/2019 | P9-P8 | DX | 1336 | 1341 | 35 | 35 | DG | Pass |
| 30 | 12/12/2019 | P9-P10 | DX | 1336 | 1341 | 35 | 35 | DG | Pass |
| 31 | 12/12/2019 | P8/P10-P2 | DX | 1540 | 1545 | 35 | 35 | DG | Pass |
| 32 | 12/12/2019 | P8-P2 | DX | 1540 | 1545 | 35 | 35 | DG | Pass |
| 33 | 12/12/2019 | P10-P2 | DX | 1545 | 1550 | 35 | 35 | DG | Pass |
| 34 | 12/12/2019 | P10-P11 | DX | 1545 | 1550 | 35 | 35 | DG | Pass |
| 35 | 12/12/2019 | P10-P12 | DX | 1330 | 1335 | 35 | 35 | DG | Pass |
| 36 | 12/12/2019 | P12-P13 | DX | 1325 | 1330 | 35 | 35 | DG | Pass |
| 37 | 12/12/2019 | P11-P12 | DX | 1325 | 1330 | 35 | 35 | DG | Pass |
| 38 | 12/12/2019 | P11-P1 | DX | 1550 | 1555 | 35 | 35 | DG | Pass |
| 39 | 12/12/2019 | P11-P13 | DX | 1550 | 1555 | 35 | 35 | DG | Pass |
| 40 | 12/12/2019 | P13-P1 | DX | 1555 | 1600 | 35 | 35 | DG | Pass |
| 41 | 12/12/2019 | P13-P14 | DX | 1555 | 1600 | 35 | 35 | DG | Pass |
| 42 | 12/12/2019 | P14-P15 | DX | 1600 | 1605 | 35 | 35 | DG | Pass |
| 43 | 12/12/2019 | P14-P1 | DX | 1600 | 1605 | 35 | 35 | DG | Pass |
| 44 | 12/12/2019 | P15-P1 | DX | 1111 | 1116 | 35 | 35 | DG | Pass |
| 45 | 12/12/2019 | P15-P16 | DX | 1010 | 1015 | 35 | 35 | DG | Pass |
| 46 | 12/12/2019 | P16-P18 | DX | 1004 | 1009 | 35 | 35 | DG | Pass |
| 47 | 12/12/2019 | P17-P18 | DX | 1003 | 1008 | 35 | 35 | DG | Pass |
| 48 | 12/12/2019 | P16-P2 | DX | 1009 | 1014 | 35 | 35 | DG | Pass |
| 49 | 12/12/2019 | P17-P2 | DX | 1008 | 1013 | 35 | 35 | DG | Pass |
| 50 | 12/12/2019 | P17-P18 | DX | 1000 | 1005 | 35 | 35 | DG | Pass |

GORDON PSC ENVIRONMENTAL

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 2

**PRESSURE TEST LOCATION:** Primary FML, East and West Floor

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 51 | 12/12/2019 | P19-P17 | DX | 1001 | 1006 | 35 | 35 | DG | Pass |
| 52 | 12/12/2019 | P18-P19 | DX | 1002 | 1007 | 35 | 35 | DG | Pass |
| 53 | 12/12/2019 | P19-P21 | DX | 0949 | 0954 | 35 | 35 | DG | Pass |
| 54 | 12/12/2019 | P19-P2 | DX | 1005 | 1010 | 35 | 35 | DG | Pass |
| 55 | 12/12/2019 | P20-P2 | DX | 1600 | 1605 | 35 | 35 | DG | Pass |
| 56 | 12/12/2019 | P20-P21 | DX | 0946 | 0951 | 35 | 35 | DG | Pass |
| 57 | 12/12/2019 | P20-P22 | DX | 0948 | 0953 | 35 | 35 | DG | Pass |
| 58 | 12/12/2019 | P21-P22 | DX | 0948 | 0953 | 35 | 35 | DG | Pass |
| 59 | 12/12/2019 | P22-P2 | DX | 1600 | 1605 | 35 | 35 | DG | Pass |
| 60 | 12/13/2019 | P23-P24 | DX | 0706 | 0711 | 35 | 35 | DG | Pass |
| 61 | 12/13/2019 | P23-P25 | DX | 0705 | 0718 | 35 | 35 | DG | Pass |
| 62 | 12/13/2019 | P24-P25 | DX | 0706 | 0733 | 35 | 35 | DG | Pass |
| 63 | 12/13/2019 | P25-P26 | DX | 0715 | 1440 | 35 | 35 | DG | Pass |
| 64 | 12/13/2019 | P25-P2 | DX | 0728 | 0725 | 35 | 35 | DG | Pass |
| 65 | 12/13/2019 | P26-P2 | DX | 1439 | 0755 | 35 | 35 | DG | Pass |
| 66 | 12/13/2019 | P26-P27 | DX | 0720 | 0725 | 35 | 35 | DG | Pass |
| 67 | 12/13/2019 | P27-P28 | DX | 0750 | 0755 | 35 | 35 | DG | Pass |
| 68 | 12/13/2019 | P29-P30 | DX | 0818 | 0823 | 35 | 35 | DG | Pass |
| 69 | 12/13/2019 | P28-P29 | DX | 0818 | 0823 | 35 | 35 | DG | Pass |
| 70 | 12/13/2019 | P30-P28 | DX | 0818 | 0823 | 35 | 35 | DG | Pass |
| 71 | 12/13/2019 | P28-P2 | DX | 0743 | 0748 | 35 | 35 | DG | Pass |
| 72 | 12/13/2019 | P30-P2 | DX | 0743 | 0748 | 35 | 35 | DG | Pass |
| 73 | 12/13/2019 | P29-P31 | DX | 0825 | 0830 | 35 | 35 | DG | Pass |
| 74 | 12/13/2019 | P30-P31 | DX | 0825 | 0830 | 35 | 35 | DG | Pass |
| 75 | 12/13/2019 | P33-P31 | DX | 0905 | 0910 | 35 | 35 | DG | Pass |
| 76 | 12/13/2019 | P33-P31 | DX | 0840 | 0845 | 35 | 35 | DG | Pass |
| 77 | 12/13/2019 | P32-P33 | DX | 0840 | 0845 | 35 | 35 | DG | Pass |
| 78 | 12/13/2019 | P31-P32 | DX | 0840 | 0845 | 35 | 35 | DG | Pass |
| 79 | 12/13/2019 | P31-P2 | DX | 0831 | 0836 | 35 | 35 | DG | Pass |
| 80 | 12/13/2019 | P32-P2 | DX | 0831 | 0836 | 35 | 35 | DG | Pass |
| 81 | 12/13/2019 | P34-P2 | DX | 0926 | 0931 | 35 | 35 | DG | Pass |
| 82 | 12/13/2019 | P34-P32 | DX | 0855 | 0900 | 35 | 35 | DG | Pass |
| 83 | 12/13/2019 | P34-P33 | DX | 0855 | 0900 | 35 | 35 | DG | Pass |
| 84 | 12/13/2019 | P34-P36 | DX | 1030 | 1035 | 35 | 35 | DG | Pass |
| 85 | 12/13/2019 | P35-P36 | DX | 1030 | 1035 | 35 | 35 | DG | Pass |
| 86 | 12/13/2019 | P34-P35 | DX | 1030 | 1035 | 35 | 35 | DG | Pass |
| 87 | 12/13/2019 | P34-P35 | DX | 1050 | 1055 | 35 | 35 | DG | Pass |
| 88 | 12/13/2019 | P35-P37 | DX | 1055 | 1100 | 35 | 35 | DG | Pass |
| 89 | 12/13/2019 | P35-P36 | DX | 1040 | 1045 | 35 | 35 | DG | Pass |
| 90 | 12/13/2019 | P37-P36 | DX | 1040 | 1045 | 35 | 35 | DG | Pass |
| 91 | 12/13/2019 | P35-P37 | DX | 1040 | 1045 | 35 | 35 | DG | Pass |
| 92 | 12/13/2019 | P37-P38 | DX | 1115 | 1120 | 35 | 35 | DG | Pass |
| 93 | 12/13/2019 | P37-P2 | DX | 0954 | 0959 | 35 | 35 | DG | Pass |
| 94 | 12/13/2019 | P38-P2 | DX | 0954 | 0959 | 35 | 35 | DG | Pass |
| 95 | 12/13/2019 | P38-P39 | DX | 1110 | 1115 | 35 | 35 | DG | Pass |
| 96 | 12/19/2019 | P53-P54 | DX | 1230 | 1235.00 | 35 | 35 | BSB | Pass |
| 97 | 12/19/2019 | P54-P56 | DX | 1022 | 1027 | 35 | 35 | BSB | Pass |
| 98 | 12/19/2019 | P55-P56 | DX | 1020 | 1025 | 35 | 35 | BSB | Pass |
| 99 | 12/19/2019 | P54-P55 | DX | 1023 | 1028 | 35 | 34 | BSB | Pass |
| 100 | 12/19/2019 | P53-P55 | DX | 1016 | 1021 | 35 | 35 | BSB | Pass |

GORDON ENVIRONMENTAL PSC

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 3

**PRESSURE TEST LOCATION:** Primary FML, East Floor

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 101 | 12/19/2019 | P56-P57 | DX | 1005 | 1010 | 35 | 35 | BSB | Pass |
| 102 | 12/19/2019 | P57-P58 | DX | 1200 | 1205 | 35 | 35 | BSB | Pass |
| 103 | 12/19/2019 | P57-P59 | DX | 1206 | 1211 | 35 | 35 | BSB | Pass |
| 104 | 12/19/2019 | P58-P59 | DX | 1203 | 1208 | 35 | 35 | BSB | Pass |
| 105 | 12/19/2019 | P58-P60 | DX | 1201 | 1206 | 35 | 35 | BSB | Pass |
| 106 | 12/19/2019 | P59-P60 | DX | 1221 | 1226 | 35 | 35 | BSB | Pass |
| 107 | 12/19/2019 | P60-P61 | DX | 1220 | 1225 | 35 | 35 | BSB | Pass |
| 108 | 12/19/2019 | P61-P62 | DX | 0250 | 0250 | 35 | 35 | BSB | Pass |
| 109 | 12/19/2019 | P62-P63 | DX | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 110 | 12/19/2019 | P63-P64 | DX | 1500 | 1507 | 35 | 35 | BSB | Pass |
| 111 | 12/19/2019 | P63-P65 | DX | 1150 | 1155 | 35 | 35 | BSB | Pass |
| 112 | 12/19/2019 | P64-P65 | DX | 1509 | 1514 | 35 | 34 | BSB | Pass |
| 113 | 12/19/2019 | P64-P66 | DX | 1500 | 1509 | 35 | 35 | BSB | Pass |
| 114 | 12/19/2019 | P65-P66 | DX | 1155 | 1158 | 35 | 35 | BSB | Pass |
| 115 | 12/19/2019 | P66-P67 | DX | 1510 | 1515 | 35 | 35 | BSB | Pass |
| 116 | 12/19/2019 | P67-P68 | DX | 1517 | 1522 | 35 | 35 | BSB | Pass |
| 117 | 12/21/2019 | P68-P70 | DX | 0830 | 0835 | 35 | 35 | BSB | Pass |
| 118 | 12/21/2019 | P72-P74 | DX | 0645 | 0650 | 35 | 35 | BSB | Pass |
| 119 | 12/21/2019 | P73-P74 | DX | 0646 | 0651 | 35 | 35 | BSB | Pass |
| 120 | 12/21/2019 | P71-P72/P73 | DX | 0700 | 0705 | 35 | 35 | BSB | Pass |
| 121 | 12/21/2019 | P72-P73 | DX | 0700 | 0705 | 35 | 35 | BSB | Pass |
| 122 | 12/21/2019 | P70-P71 | DX | 0705 | 0710 | 35 | 35 | BSB | Pass |
| 123 | 12/21/2019 | P69-P70 | DX | 1035 | 1035 | 35 | 35 | BSB | Pass |
| 124 | 12/21/2019 | P68-P69 | DX | 1050 | 1054 | 35 | 35 | BSB | Pass |
| 125 | 12/21/2019 | P67-P69 | DX | 1050 | 1053 | 35 | 35 | BSB | Pass |
| 126 | 12/19/2019 | P40-P1 | AM | 1256 | 1301.00 | 35 | 35 | BSB | Pass |
| 127 | 12/19/2019 | P41-P1 | AM | 1250 | 1255 | 35 | 35 | BSB | Pass |
| 128 | 12/19/2019 | P42-P1 | AM | 1250 | 1255 | 35 | 35 | BSB | Pass |
| 129 | 12/19/2019 | P44-P1 | AM | 1240 | 145 | 35 | 35 | BSB | Pass |
| 130 | 12/19/2019 | P45-P1 | AM | 1241 | 1246 | 35 | 35 | BSB | Pass |
| 131 | 12/19/2019 | P45-P1 | AM | 1239 | 1244 | 35 | 35 | BSB | Pass |
| 132 | 12/19/2019 | P46-P1 | AM | 1238 | 1243 | 35 | 35 | BSB | Pass |
| 133 | 12/19/2019 | P48-P1 | AM | 1237 | 1242 | 35 | 35 | BSB | Pass |
| 134 | 12/19/2019 | P49-P1 | AM | 1235 | 1240 | 35 | 35 | BSB | Pass |
| 135 | 12/19/2019 | P51-P1 | AM | 1233 | 1238 | 35 | 35 | BSB | Pass |
| 136 | 12/19/2019 | P53-P1 | AM | 1232 | 1237 | 35 | 35 | BSB | Pass |
| 137 | 12/19/2019 | P54-P1 | AM | 1230 | 1235 | 35 | 35 | BSB | Pass |
| 138 | 12/19/2019 | P56-P1 | AM | 1228 | 1233 | 35 | 34 | BSB | Pass |
| 139 | 12/19/2019 | P57-P1 | AM | 1227 | 1232 | 35 | 35 | BSB | Pass |
| 140 | 12/19/2019 | P58-P1 | AM | 1226 | 1231 | 35 | 35 | BSB | Pass |
| 141 | 12/19/2019 | P60-P1 | AM | 1224 | 1229 | 35 | 35 | BSB | Pass |
| 142 | 12/19/2019 | P61-P1 | AM | 1224 | 1229 | 35 | 35 | BSB | Pass |
| 143 | 12/19/2019 | P62-P1 | AM | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 144 | 12/19/2019 | P63-P1 | AM | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 145 | 12/19/2019 | P64-P1 | AM | 1507 | 1512 | 35 | 35 | BSB | Pass |
| 146 | 12/19/2019 | P66-P1 | AM | 1509 | 1514 | 35 | 35 | BSB | Pass |
| 147 | 12/19/2019 | P67-P1 | AM | 1510 | 1515 | 35 | 35 | BSB | Pass |
| 148 | 12/19/2019 | P68-P1 | AM | 1517 | 1522 | 35 | 35 | BSB | Pass |
| 149 | 12/19/2019 | P51-P50 | AM | 1014 | 1019 | 35 | 35 | BSB | Pass |
| 150 | 12/21/2019 | P70-P1 | AM | 0830 | 0835 | 35 | 35 | BSB | Pass |

GORDON ENVIRONMENTAL PSC

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# FML SEAMING PRESSURE TEST LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Water Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**PRESSURE TEST LOCATION:** Primary East Side

| PROJECT SPECIFICATIONS | |
|---|---|
| MIN START PSI: | 35 |
| TEST DURATION: | 5 minutes |
| MAX PSI DROP: | 35 |

| | DATE | PANEL #/PANEL # | TESTER | TIME | | PRESSURE | | MONITORED BY | PASS/FAIL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | START | FINISH | INITIAL | FINAL | | |
| 151 | 12/19/2019 | P40-LT | AM | 1256 | 1301.00 | 35 | 35 | BSB | Pass |
| 152 | 12/19/2019 | P41-LT | AM | 1250 | 1255 | 35 | 35 | BSB | Pass |
| 153 | 12/19/2019 | P42-LT | AM | 1250 | 1255 | 35 | 35 | BSB | Pass |
| 154 | 12/19/2019 | P44-LT | AM | 1240 | 145 | 35 | 35 | BSB | Pass |
| 155 | 12/19/2019 | P45-LT | AM | 1241 | 1246 | 35 | 35 | BSB | Pass |
| 156 | 12/19/2019 | P45-LT | AM | 1239 | 1244 | 35 | 35 | BSB | Pass |
| 157 | 12/19/2019 | P46-LT | AM | 1238 | 1243 | 35 | 35 | BSB | Pass |
| 158 | 12/19/2019 | P48-LT | AM | 1237 | 1242 | 35 | 35 | BSB | Pass |
| 159 | 12/19/2019 | P49-LT | AM | 1235 | 1240 | 35 | 35 | BSB | Pass |
| 160 | 12/19/2019 | P51-LT | AM | 1233 | 1238 | 35 | 35 | BSB | Pass |
| 161 | 12/19/2019 | P53-LT | AM | 1232 | 1237 | 35 | 35 | BSB | Pass |
| 162 | 12/19/2019 | P54-LT | AM | 1230 | 1235 | 35 | 35 | BSB | Pass |
| 163 | 12/19/2019 | P56-LT | AM | 1228 | 1233 | 35 | 34 | BSB | Pass |
| 164 | 12/19/2019 | P57-LT | AM | 1227 | 1232 | 35 | 35 | BSB | Pass |
| 165 | 12/19/2019 | P58-LT | AM | 1226 | 1231 | 35 | 35 | BSB | Pass |
| 166 | 12/19/2019 | P60-LT | AM | 1224 | 1229 | 35 | 35 | BSB | Pass |
| 167 | 12/19/2019 | P61-LT | AM | 1224 | 1229 | 35 | 35 | BSB | Pass |
| 168 | 12/19/2019 | P62-LT | AM | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 169 | 12/19/2019 | P63-LT | AM | 1500 | 1505 | 35 | 35 | BSB | Pass |
| 170 | 12/19/2019 | P64-LT | AM | 1507 | 1512 | 35 | 35 | BSB | Pass |
| 171 | 12/19/2019 | P66-LT | AM | 1509 | 1514 | 35 | 35 | BSB | Pass |
| 172 | 12/19/2019 | P67-LT | AM | 1510 | 1515 | 35 | 35 | BSB | Pass |
| 173 | 12/19/2019 | P68-LT | AM | 1517 | 1522 | 35 | 35 | BSB | Pass |
| 174 | 12/19/2019 | P51-P5 | AM | 1014 | 1019 | 35 | 35 | BSB | Pass |
| 175 | 12/21/2019 | P71-P1 | DX | 0755 | 0800 | 35 | 35 | BSB | Pass |
| 176 | 12/21/2019 | P72-P2 | DX | 0755 | 0800 | 35 | 35 | BSB | Pass |
| 177 | 12/21/2019 | P74-P2 | DX | 0757 | 0803 | 35 | 35 | BSB | Pass |
| 178 | 12/21/2019 | P75-P2 | DX | 0750 | 0755 | 35 | 35 | BSB | Pass |
| 179 | 12/21/2019 | P40-P41 | DX | 0838 | 0843 | 35 | 35 | BSB | Pass |
| 180 | 12/21/2019 | P40-P41/P42 | DX | 0834 | 0839 | 35 | 35 | BSB | Pass |
| 181 | 12/21/2019 | P40-P42 | DX | 0830 | 0835 | 35 | 35 | BSB | Pass |
| 182 | 12/21/2019 | P40-P41 | DX | 0830 | 0835 | 35 | 35 | BSB | Pass |
| 183 | 12/21/2019 | P41-P42 | DX | 0832 | 0837 | 35 | 35 | BSB | Pass |
| 184 | 12/21/2019 | P42-P44 | DX | 0836 | 0841 | 35 | 35 | BSB | Pass |
| 185 | 12/21/2019 | P43-P44 | DX | 0837 | 0842 | 35 | 35 | BSB | Pass |
| 186 | 12/21/2019 | P44-P45 | AM | 0840 | 0845 | 35 | 35 | BSB | Pass |
| 187 | 12/21/2019 | P45-P46 | DX | 0851 | 0856 | 35 | 35 | BSB | Pass |
| 188 | 12/21/2019 | P45-P47 | DX | 0850 | 0855 | 35 | 35 | BSB | Pass |
| 189 | 12/21/2019 | P46-P47 | DX | 0850 | 0855 | 35 | 35 | BSB | Pass |
| 190 | 12/21/2019 | P46-P48 | DX | 0855 | 0900 | 35 | 35 | BSB | Pass |
| 191 | 12/21/2019 | P47-P48 | DX | 0902 | 0907 | 35 | 35 | BSB | Pass |
| 192 | 12/21/2019 | P45-P49 | DX | 0903 | 0908 | 35 | 35 | BSB | Pass |
| 193 | 12/21/2019 | P48-P50 | DX | 0905 | 0910 | 35 | 35 | BSB | Pass |
| 194 | 12/21/2019 | P49-P51/P57 | DX | 0904 | 0909 | 35 | 35 | BSB | Pass |
| 195 | 12/21/2019 | P49-P50 | DX | 0910 | 0915 | 35 | 35 | BSB | Pass |
| 196 | 12/21/2019 | P50-P51 | DX | 0911 | 0916 | 35 | 35 | BSB | Pass |
| 197 | 12/21/2019 | P51-P52 | DX | 0913 | 0918 | 35 | 35 | BSB | Pass |
| 198 | 12/21/2019 | P51-P53 | DX | 0912 | 0917 | 35 | 35 | BSB | Pass |
| 199 | 12/21/2019 | P52-P53 | DX | 1015 | 1020 | 35 | 35 | BSB | Pass |
| | | | | | | | | | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.16. FML Seam Vacuum Test and Defect-Repair Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 1

**TEST/REPAIR LOCATION:** Secondary FML, North Slope/ West Floor
**MONITOR:** Don Gray

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 1 | 12/6/2019 | F8-NS12/11 | P | DK-261 | - | DX | 12/6/2019 | |
| 2 | 12/6/2019 | NS12/NS12A-NS11 | P | DK-261 | - | DX | 12/6/2019 | |
| 3 | 12/6/2019 | NS2-NS3 | P (SDT-1) | DK-261 | - | DX | 12/6/2019 | |
| 4 | 12/6/2019 | NS11/NS1-F8 | P | DK-261 | - | DX | 12/6/2019 | |
| 5 | 12/6/2019 | NS1-F1/F8 | P | DK-261 | - | DX | 12/6/2019 | |
| 6 | 12/6/2019 | NS1/NS2-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 7 | 12/6/2019 | NS3/NS4-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 8 | 12/6/2019 | NS4/NS5-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 9 | 12/6/2019 | NS-9A | P | DK-261 | - | DX | 12/6/2019 | |
| 10 | 12/6/2019 | NS-9A | P | DK-261 | - | DX | 12/6/2019 | |
| 11 | 12/6/2019 | NS5/NS5A-NS6 | P | DK-261 | - | DX | 12/6/2019 | |
| 12 | 12/6/2019 | NS5A/NS6-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 13 | 12/6/2019 | NS6/NS7-F1 | P(SDT-2) | DK-261 | - | DX | 12/6/2019 | |
| 14 | 12/6/2019 | NS7/NS8-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 15 | 12/6/2019 | NS8/NS9A-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 16 | 12/6/2019 | NS8-NS9/NS9A | P | DK-261 | - | DX | 12/6/2019 | |
| 17 | 12/6/2019 | NS9/NS9A-NS10 | P (SDT-3) | DK-261 | - | DX | 12/6/2019 | |
| 18 | 12/6/2019 | NS9/NS10-F1 | P | DK-261 | - | DX | 12/6/2019 | |
| 19 | 12/6/2019 | F2-F3A | P (SDT-4) | DK-261 | - | DX | 12/6/2019 | |
| 20 | 12/6/2019 | F2-F3/F3A | P | DK-261 | - | DX | 12/6/2019 | |
| 21 | 12/6/2019 | F3/F3A-F4 | P (SDT-5) | DK-261 | - | DX | 12/6/2019 | |
| 22 | 12/6/2019 | F2/F1-F7/F8 | P | DK-261 | - | DX | 12/6/2019 | |
| 23 | 12/6/2019 | F1-F8 | P | DK-261 | - | DX | 12/6/2019 | |
| 24 | 12/6/2019 | F7/F2-F3 | P | DK-261 | - | DX | 12/6/2019 | |
| 25 | 12/6/2019 | F2-F3A | P | DK-261 | - | DX | 12/6/2019 | |
| 26 | 12/6/2019 | F5-F6 | P | DK-261 | - | DX | 12/6/2019 | |
| 27 | 12/6/2019 | F4-F5/F5A | P | DK-261 | - | DX | 12/6/2019 | |
| 28 | 12/6/2019 | F5/F5A-F6 | P | DK-261 | - | DX | 12/6/2019 | |
| 29 | 12/6/2019 | F5A-F6 | P | DK-261 | - | DX | 12/6/2019 | |
| 30 | 12/6/2019 | F6-F9/F10 | P | DK-261 | - | DX | 12/6/2019 | |
| 31 | 12/6/2019 | F10/F9-F11 | P | DK-261 | - | DX | 12/6/2019 | |
| 32 | 12/6/2019 | F9-F11 | P (SDT-7) | DK-261 | - | DX | 12/6/2019 | |
| 33 | 12/6/2019 | F11-F12/F13 | P | DK-261 | - | DX | 12/6/2019 | |
| 34 | 12/7/2019 | F12/F13-F14 | P | DK-261 | - | DX | 12/6/2019 | |
| 35 | 12/7/2019 | F14-F15/F16 | P | DK-261 | - | DX | 12/6/2019 | |
| 36 | 12/7/2019 | F15/F16-F17 | P | DK-261 | - | DX | 12/6/2019 | |
| 37 | 12/7/2019 | F16-F17 | P | DK-261 | - | DX | 12/6/2019 | |
| 38 | 12/7/2019 | F16 | P | DK-261 | - | DX | 12/6/2019 | |
| 39 | 12/7/2019 | F17-F18/F19 | P | DK-261 | - | DX | 12/6/2019 | |
| 40 | 12/7/2019 | F18/F19-F20 | P | DK-261 | - | DX | 12/6/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019

**OWNER:** Oilfield Well Logistics **CONTRACTOR:** Mustang Extreme

**PROJECT LOCATION:** Lea County **SHEET NUMBER:** 2

**TEST/REPAIR LOCATION:** Secondary FML, North Slope & West Floor **MONITOR:** Don Gray

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 41 | 12/7/2019 | F18-F19 | SDT-11 | DK-261 | - | DX | 12/7/2019 | |
| 42 | 12/7/2019 | F20-F21/F22 | P | DK-261 | - | DX | 12/7/2019 | |
| 43 | 12/7/2019 | F21/F22-F23 | P | DK-261 | - | DX | 12/7/2019 | |
| 44 | 12/7/2019 | F23-F24 | SDT-12 | DK-261 | - | DX | 12/7/2019 | |
| 45 | 12/7/2019 | F23-F24/F25 | P | DK-261 | - | DX | 12/7/2019 | |
| 46 | 12/7/2019 | F24/F25-F26 | P | DK-261 | - | DX | 12/7/2019 | |
| 47 | 12/7/2019 | F27-F29 | SDT-13 | DK-261 | - | DX | 12/7/2019 | |
| 48 | 12/7/2019 | F26-F27 | P | DK-261 | - | DX | 12/7/2019 | |
| 49 | 12/7/2019 | F27/F28-F29 | P | DK-261 | - | DX | 12/7/2019 | |
| 50 | 12/7/2019 | F30-F31 | P | DK-261 | - | DX | 12/7/2019 | |
| 51 | 12/7/2019 | F30-F31 | P | DK-261 | - | DX | 12/7/2019 | |
| 52 | 12/7/2019 | F29-F30 | SDT-14 | DK-261 | - | DX | 12/7/2019 | |
| 53 | 12/7/2019 | F30-F31 | PX2 | DK-261 | - | DX | 12/7/2019 | |
| 54 | 12/7/2019 | F32-F33 | SDT-15 | DK-261 | - | DX | 12/7/2019 | |
| 55 | 12/7/2019 | F34-F36 | SDT-16 | DK-261 | - | DX | 12/7/2019 | |
| 56 | 12/7/2019 | F34-F36/F35 | SDT-17 | DK-261 | - | DX | 12/7/2019 | |
| 57 | 12/7/2019 | F35/F36-F37 | P (SDT-18) | DK-261 | - | DX | 12/7/2019 | |
| 58 | 12/7/2019 | F37-F41 | P | DK-261 | - | DX | 12/7/2019 | |
| 59 | 12/7/2019 | F37-F41/F40 | P | DK-261 | - | DX | 12/7/2019 | |
| 60 | 12/7/2019 | F37-F40/F39 | P | DK-261 | - | DX | 12/7/2019 | |
| 61 | 12/10/2019 | NS26-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 62 | 12/10/2019 | NS26/NS13-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 63 | 12/10/2019 | NS13/NS14-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 64 | 12/10/2019 | NS14/NS15-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 65 | 12/10/2019 | NS14-NS15 | SDT19 | DK-261 | - | DX | 12/10/2019 | |
| 66 | 12/10/2019 | NS14-NS15 | P | DK-261 | - | DX | 12/10/2019 | |
| 67 | 12/10/2019 | NS15/NS16-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 68 | 12/10/2019 | NS16/NS17-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 69 | 12/10/2019 | NS16-NS17 | SDT20 | DK-261 | - | DX | 12/10/2019 | |
| 70 | 12/10/2019 | NS16-NS17 | P | DK-261 | - | DX | 12/10/2019 | |
| 71 | 12/10/2019 | NS16-NS17 | P | DK-261 | - | DX | 12/10/2019 | |
| 72 | 12/10/2019 | NS17/NS18-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 73 | 12/10/2019 | NS18/NS19-F42 | P | DK-261 | - | DX | 12/10/2019 | |
| 74 | 12/10/2019 | NS18-NS19 | SDT21 | DK-261 | - | DX | 12/10/2019 | |
| 75 | 12/10/2019 | NS19/NS20-F42 | P | LI-7 | - | DX | 12/10/2019 | |
| 76 | 12/10/2019 | NS20/NS21-F42 | P | LI-7 | - | DX | 12/10/2019 | |
| 77 | 12/12/2019 | F42-F43 | SDT-25 | LI# 7 | - | DX | 12/17/2019 | |
| 78 | 12/12/2019 | NS21/NS22-ES5/ES6 | P | LI# 7 | - | DX | 12/17/2019 | |
| 79 | 12/12/2019 | NS21/NS22-ES4/ES5 | SDT-22 | LI# 7 | - | DX | 12/17/2019 | |
| 80 | 12/12/2019 | NS21/NS23-ES3/ES4 | P | LI# 7 | - | DX | 12/17/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019

**OWNER:** Oilfield Well Logistics **CONTRACTOR:** Mustang Extreme

**PROJECT LOCATION:** Lea County, New Mexico **SHEET NUMBER:** 3

**TEST/REPAIR LOCATION:** Secondary FML, North & East Slopes & East Floor **MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 81 | 12/12/2019 | F42-F43-ES7A/ES8 | P | LI# 7 | - | DX | 12/17/2019 | |
| 82 | 12/12/2019 | ES7/ES7A-F42-F43 | P | LI#7 | - | DX | 12/17/2019 | |
| 83 | 12/12/2019 | ES6-ES7/ES7A | P | LI# 7 | - | DX | 12/17/2019 | |
| 84 | 12/12/2019 | F43/F45-ES8/ES9 | P | LI# 7 | - | DX | 12/17/2019 | |
| 85 | 12/13/2019 | NS25-ES1/ES2 | P | LI#401 | - | DX | 12/17/2019 | |
| 86 | 12/14/2019 | ES7-ES8 | SDT-23 | LI# 7 | - | DX | 12/17/2019 | |
| 87 | 12/14/2019 | F45/F46-ES9/ES10 | P | LI#401 | - | DX | 12/17/2019 | |
| 88 | 12/14/2019 | F46/F47-ES10/ES11 | P | LI#401 | - | DX | 12/17/2019 | |
| 89 | 12/14/2019 | F47/F49-ES11/ES13 | P | LI#401 | - | DX | 12/17/2019 | |
| 90 | 12/14/2019 | ES11-ES12/ES13 | P | LI#401 | - | DX | 12/17/2019 | |
| 91 | 12/14/2019 | ES11-ES12/ES13 | SDT-24 | LI#401 | - | DX | 12/17/2019 | |
| 92 | 12/14/2019 | ES12/ES13-ES14 | P | LI#401 | - | DX | 12/17/2019 | |
| 93 | 12/14/2019 | F49/F50-ES13/ES14 | P | LI#401 | - | DX | 12/17/2019 | |
| 94 | 12/14/2019 | NS24/NS25-ES2/ES3 | P | LI# 7 | - | DX | 12/17/2019 | |
| 95 | 12/14/2019 | ES13/ES14-F49/F50 | P | LI#401 | - | DX | 12/17/2019 | |
| 96 | 12/16/2019 | F42-F45/F44 | P | DK#261 | - | DX | 12/17/2019 | |
| 97 | 12/16/2019 | F43/F44-F45 | P | DK#261 | - | DX | 12/17/2019 | |
| 98 | 12/16/2019 | F45-F46 | SDT-26 | DK#261 | - | DX | 12/17/2019 | |
| 99 | 12/16/2019 | F46-F47 | SDT-27 | DK#261 | - | DX | 12/17/2019 | |
| 100 | 12/16/2019 | F46-F47/F48 | P | DK#261 | - | DX | 12/17/2019 | |
| 101 | 12/16/2019 | F47/F48-F49 | P | DK#261 | - | DX | 12/17/2019 | |
| 102 | 12/16/2019 | ES4/ES5-F50/F51 | P | DK#261 | - | DX | 12/17/2019 | |
| 103 | 12/16/2019 | ES15/ES16-ES1/ES3 | P | DK#261 | - | DX | 12/17/2019 | |
| 104 | 12/16/2019 | F50/F51-F52 | P | DK#261 | - | DX | 12/17/2019 | |
| 105 | 12/16/2019 | F51/F52-F53 | P | DK#261 | - | DX | 12/17/2019 | |
| 106 | 12/16/2019 | F52-F50 | SDT-28 | DK#261 | - | DX | 12/17/2019 | |
| 107 | 12/16/2019 | F50-F52 | P | DK#261 | - | DX | 12/17/2019 | |
| 108 | 12/16/2019 | F50/F52-LT | P | DK#261 | - | DX | 12/17/2019 | |
| 109 | 12/16/2019 | F52/F53-LT | P | DK#261 | - | DX | 12/17/2019 | |
| 110 | 12/16/2019 | F52-F53 | P | DK#261 | - | DX | 12/17/2019 | |
| 111 | 12/17/2019 | F42-F43 | P | DK#261 | - | DX | 12/17/2019 | |
| 112 | 12/17/2019 | F46/F37-F48 | P | DK#261 | - | DX | 12/17/2019 | |
| 113 | 12/17/2019 | F46/F47-LT | P | DK#401 | - | DX | 12/17/2019 | |
| 114 | 12/17/2019 | F44/F45-LT | P | DK#401 | - | DX | 12/17/2019 | |
| 115 | 12/17/2019 | F44-F45 | P | DK#261 | - | DX | 12/17/2019 | |
| 116 | 12/17/2019 | F43/F44-LT | P | DK#401 | - | DX | 12/17/2019 | |
| 117 | 12/16/2019 | ES16/ES17-F53/54 | P | DK#261 | - | DX | 12/17/2019 | |
| 118 | 12/16/2019 | ES17/ES18-F54 | P | DK#261 | - | DX | 12/17/2019 | |
| 119 | 12/16/2019 | ES14-ES18/F56 | P | DK#261 | - | DX | 12/17/2019 | |
| 120 | 12/16/2019 | ES18/ES19-F56/F57 | P | DK#261 | - | DX | 12/17/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 4

**TEST/REPAIR LOCATION:** Secondary FML, East Slope & East Floor
**MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 121 | 12/16/2019 | F56-F57 | P | DK#261 | - | DX | 12/17/2019 | |
| 122 | 12/16/2019 | F54/F55-LT | P | DK#261 | - | DX | 12/17/2019 | |
| 123 | 12/16/2019 | ES3-ES4/ES5 | P | DK#261 | - | DX | 12/17/2019 | |
| 124 | 12/16/2019 | F54/F55-F56 | P | DK#261 | - | DX | 12/17/2019 | |
| 125 | 12/16/2019 | F56-F57 | SDT-30 | DK#261 | - | DX | 12/17/2019 | |
| 126 | 12/16/2019 | F56/F57-ES18/ES19 | P | DK#261 | - | DX | 12/17/2019 | |
| 127 | 12/17/2019 | F55/56-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 128 | 12/17/2019 | F56/F57-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 129 | 12/17/2019 | F57-F58 | P | LI#401 | - | DX | 12/18/2019 | |
| 130 | 12/17/2019 | F57/F58-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 131 | 12/17/2019 | F56/F57-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 132 | 12/17/2019 | F55/56-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 133 | 12/17/2019 | F56/F57-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 134 | 12/17/2019 | F57/F58-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 135 | 12/17/2019 | F59/F61-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 136 | 12/17/2019 | F61/F62-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 137 | 12/17/2019 | F62/F63A-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 138 | 12/17/2019 | F63A/F64-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 139 | 12/17/2019 | F64/F65-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 140 | 12/17/2019 | F65/F66/F67-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 141 | 12/17/2019 | F66/F67-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 142 | 12/17/2019 | F67/F68-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 143 | 12/17/2019 | F68-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 144 | 12/17/2019 | F68/F69-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 145 | 12/17/2019 | F69/F71-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 146 | 12/17/2019 | F71/F72-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 147 | 12/17/2019 | F72/F73-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 148 | 12/17/2019 | F73/F74-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 149 | 12/17/2019 | F74/7-LT | P | LI#401 | - | DX | 12/17/2019 | |
| 150 | 12/17/2019 | F57/F58-ES19/ES20 | P | KK#24 | - | DX | 12/18/2019 | |
| 151 | 12/17/2019 | F58/F59-ES20/ES21 | P | KK#24 | - | DX | 12/18/2019 | |
| 152 | 12/17/2019 | ES20-ES21/ES22 | P | KK#24 | - | DX | 12/18/2019 | |
| 153 | 12/17/2019 | ES21/ES22-ES23 | P | KK#24 | - | DX | 12/18/2019 | |
| 154 | 12/17/2019 | ES9/F60-ES22/ES23 | P | KK#24 | - | DX | 12/18/2019 | |
| 155 | 12/17/2019 | ES23/ES24-F60/F62 | P | KK#24 | - | DX | 12/18/2019 | |
| 156 | 12/17/2019 | ES23-ES24 | SDT-35 | KK#24 | - | DX | 12/18/2019 | |
| 157 | 12/17/2019 | F59-F60/F61 | P (SDT-31) | LI#401 | - | DX | 12/18/2019 | |
| 158 | 12/17/2019 | F60/F61-F62 | P | LI#401 | - | DX | 12/18/2019 | |
| 159 | 12/17/2019 | F60-F61 | P | LI#401 | - | DX | 12/18/2019 | |
| 160 | 12/17/2019 | F59-F60 | P | LI#401 | - | DX | 12/18/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019

**OWNER:** Oilfield Well Logistics **CONTRACTOR:** Mustang Extreme

**PROJECT LOCATION:** Lea County, New Mexico **SHEET NUMBER:** 5

**TEST/REPAIR LOCATION:** Secondary FML, East Slope & East Floor **MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 161 | 12/17/2019 | F61-F62 | P | LI#401 | - | DX | 12/18/2019 | |
| 162 | 12/17/2019 | F62-F63 | P | LI#401 | - | DX | 12/18/2019 | |
| 163 | 12/17/2019 | F63-F64 | P | LI#401 | - | DX | 12/18/2019 | |
| 164 | 12/17/2019 | F62-F63/F63A | P | LI#401 | - | DX | 12/18/2019 | |
| 165 | 12/17/2019 | F63/F63A-F64 | P | LI#401 | - | DX | 12/18/2019 | |
| 166 | 12/17/2019 | F64-F65 | P | LI#401 | - | DX | 12/18/2019 | |
| 167 | 12/17/2019 | F64-F65 | SDT-33 | LI#401 | - | DX | 12/18/2019 | |
| 168 | 12/17/2019 | ES24/ES25-F62/F63 | P | KK#24 | - | DX | 12/18/2019 | |
| 169 | 12/17/2019 | ES25/ES26-F63/F64 | P | KK#24 | - | DX | 12/18/2019 | |
| 170 | 12/17/2019 | F65-F66 | P | LI#401 | - | DX | 12/18/2019 | |
| 171 | 12/17/2019 | F66-F68 | P | LI#401 | - | DX | 12/18/2019 | |
| 172 | 12/17/2019 | F68-F69 | P | LI#401 | - | DX | 12/18/2019 | |
| 173 | 12/17/2019 | F69-F70 | P | LI#401 | - | DX | 12/18/2019 | |
| 174 | 12/17/2019 | F69-F70 | P | LI#401 | - | DX | 12/18/2019 | |
| 175 | 12/17/2019 | F70-F72 | P | LI#401 | - | DX | 12/18/2019 | |
| 176 | 12/17/2019 | F76-F77 | SDT-44 | KK#24 | - | DX | 12/18/2019 | |
| 177 | 12/17/2019 | F74-F76 | SDT-43 | KK#24 | - | DX | 12/18/2019 | |
| 178 | 12/17/2019 | F72-F73 | SDT-41 | LI#401 | - | DX | 12/18/2019 | |
| 179 | 12/17/2019 | F69-F70 | SDT-38 | KK#24 | - | DX | 12/18/2019 | |
| 180 | 12/17/2019 | F73-F74 | SDT-42 | KK#24 | - | DX | 12/18/2019 | |
| 181 | 12/17/2019 | F73-F75/F74 | P | KK#24 | - | DX | 12/18/2019 | |
| 182 | 12/17/2019 | F77/F76-ES38/ES37 | P | KK#24 | - | DX | 12/18/2019 | |
| 183 | 12/17/2019 | F76/F75-ES35/ES37 | P | KK#24 | - | DX | 12/18/2019 | |
| 184 | 12/17/2019 | ES36/ES37-ES38 | P | KK#24 | - | DX | 12/18/2019 | |
| 185 | 12/17/2019 | ES35-ES36/ES37 | SDT-40 | KK#24 | - | DX | 12/18/2019 | |
| 186 | 12/17/2019 | F75/F73-ES34/ES35 | P | KK#24 | - | DX | 12/18/2019 | |
| 187 | 12/17/2019 | F73/F72/-ES33/ES34 | P | KK#24 | - | DX | 12/18/2019 | |
| 188 | 12/17/2019 | F72/F70-ES32/ES33 | P | KK#24 | - | DX | 12/18/2019 | |
| 189 | 12/17/2019 | ES31/ES32-ES33 | P | KK#24 | - | DX | 12/18/2019 | |
| 190 | 12/17/2019 | ES31-ES33 | SDT-39 | KK#24 | - | DX | 12/18/2019 | |
| 191 | 12/17/2019 | ES30-ES31/ES32 | P | KK#24 | - | DX | 12/18/2019 | |
| 192 | 12/17/2019 | F69/F68-ES29/ES30 | P | KK#24 | - | DX | 12/18/2019 | |
| 193 | 12/17/2019 | ES29-ES30 | SDT-37 | KK#24 | - | DX | 12/18/2019 | |
| 194 | 12/17/2019 | F66/F68-ES28/ES29 | P | KK#24 | - | DX | 12/18/2019 | |
| 195 | 12/17/2019 | F66/F65-ES27/ES28 | P | KK#24 | - | DX | 12/18/2019 | |
| 196 | 12/17/2019 | F64/F65-ES26/ES27 | P | KK#24 | - | DX | 12/18/2019 | |
| 197 | 12/17/2019 | ES26-ES27 | P | KK#24 | - | DX | 12/18/2019 | |
| 198 | 12/17/2019 | ES26-ES27 | SDT-36 | KK#24 | - | DX | 12/18/2019 | |
| 199 | 12/17/2019 | F62/F63-ES24/ES25 | P | KK#24 | - | DX | 12/18/2019 | |
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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 6

**TEST/REPAIR LOCATION:** Primary FML, West Floor
**MONITOR:** Don Gray

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 1 | 12/13/2019 | P7-P8/P9 | P | DK | - | DX | 12/16/2019 | |
| 2 | 12/13/2019 | P9 | PX2 | DK | - | DX | 12/16/2019 | |
| 3 | 12/13/2019 | P9 | P | DK | - | DX | 12/16/2019 | |
| 4 | 12/13/2019 | P9/P8-P10 | P | DK | - | DX | 12/16/2019 | |
| 5 | 12/13/2019 | P7-P8 | PDT-3 | DK | - | DX | 12/16/2019 | |
| 6 | 12/13/2019 | P9/P10-P2 | P | DK | - | DX | 12/16/2019 | |
| 7 | 12/13/2019 | P10/11-P2 | P | DK | - | DX | 12/16/2019 | |
| 8 | 12/13/2019 | P10-P11/P12 | P | DK | - | DX | 12/16/2019 | |
| 9 | 12/13/2019 | P11/P12-P13 | P | DK | - | DX | 12/16/2019 | |
| 10 | 12/13/2019 | P11-P13 | PDT-4 | DK | - | DX | 12/16/2019 | |
| 11 | 12/13/2019 | P11/P13-P2 | P | DK | - | DX | 12/16/2019 | |
| 12 | 12/13/2019 | P13/P14-P2 | P | DK | - | DX | 12/16/2019 | |
| 13 | 12/13/2019 | P14-P15 | PDT-5 | DK | - | DX | 12/16/2019 | |
| 14 | 12/13/2019 | P14/P15-P2 | P | DK | - | DX | 12/16/2019 | |
| 15 | 12/13/2019 | P15 | P | DK | - | DX | 12/16/2019 | |
| 16 | 12/13/2019 | P15 | PX3 | DK | - | DX | 12/16/2019 | |
| 17 | 12/13/2019 | P15 | PX3 | DK | - | DX | 12/16/2019 | |
| 18 | 12/13/2019 | P15/P16-P2 | P | DK | - | DX | 12/16/2019 | |
| 19 | 12/13/2019 | P16-P18 | PDT-6 | DK | - | DX | 12/16/2019 | |
| 20 | 12/13/2019 | P16-P17/P18 | PX2 | DK | - | DX | 12/16/2019 | |
| 21 | 12/13/2019 | P17-P16 | P | DK | - | DX | 12/16/2019 | |
| 22 | 12/13/2019 | P16/P18-P2 | P | DK | - | DX | 12/16/2019 | |
| 23 | 12/13/2019 | P17/P19-P2 | P | DK | - | DX | 12/16/2019 | |
| 24 | 12/13/2019 | P18/P17-P2 | P | DK | - | DX | 12/16/2019 | |
| 25 | 12/13/2019 | P19-P21 | PDT-7 | DK | - | DX | 12/16/2019 | |
| 26 | 12/13/2019 | P19-P20/P21 | P | DK | - | DX | 12/16/2019 | |
| 27 | 12/13/2019 | P19/P20-P2 | P | DK | - | DX | 12/16/2019 | |
| 28 | 12/13/2019 | P20/P22-P2 | P | DK | - | DX | 12/16/2019 | |
| 29 | 12/13/2019 | P21-P22 | PDT-8 | DK | - | DX | 12/16/2019 | |
| 30 | 12/13/2019 | P23/P24-P22 | P | DK | - | DX | 12/16/2019 | |
| 31 | 12/13/2019 | P22/P23-P2 | P | DK | - | DX | 12/16/2019 | |
| 32 | 12/13/2019 | P24-P25 | PDT-9 | DK | - | DX | 12/16/2019 | |
| 33 | 12/13/2019 | P24/P23-P25 | P | DK | - | DX | 12/16/2019 | |
| 34 | 12/13/2019 | P25-P26 | B | DK | - | DX | 12/16/2019 | |
| 35 | 12/13/2019 | P25/P26-P2 | P | DK | - | DX | 12/16/2019 | |
| 36 | 12/13/2019 | P23/P25-P2 | P | DK | - | DX | 12/16/2019 | |
| 37 | 12/13/2019 | P26-P27 | PX2 | DK | - | DX | 12/16/2019 | |
| 38 | 12/13/2019 | P26/P27-P2 | P | DK | - | DX | 12/16/2019 | |
| 39 | 12/13/2019 | P26-P27 | B | DK | - | DX | 12/16/2019 | |
| 40 | 12/13/2019 | P26-P27 | PDT-10 | DK | - | DX | 12/16/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics **CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico **SHEET NUMBER:** 7

**TEST/REPAIR LOCATION:** Primary FML, West Floor & North Slope **MONITOR:** Don Gray

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 41 | 12/13/2019 | NS12/NS14/NS13-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 42 | 12/13/2019 | NS12-NS13/NS14 | P | DK#261 | - | DX | 12/17/2019 | |
| 43 | 12/13/2019 | NS11/NS12-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 44 | 12/13/2019 | NS10/NS11-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 45 | 12/13/2019 | NS9/NS10-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 46 | 12/13/2019 | NS9-NS10 | P | DK#261 | - | DX | 12/17/2019 | |
| 47 | 12/13/2019 | NS9/NS10 | PDT-16 | DK#261 | - | DX | 12/17/2019 | |
| 48 | 12/13/2019 | NS8/NS9-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 49 | 12/13/2019 | NS7/NS8-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 50 | 12/13/2019 | NS5/NS6-NS7 | P | DK#261 | - | DX | 12/17/2019 | |
| 51 | 12/13/2019 | NS5/NS6-NS4 | P | DK#261 | - | DX | 12/17/2019 | |
| 52 | 12/13/2019 | NS5-NS7 | PDT-17 | DK#261 | - | DX | 12/17/2019 | |
| 53 | 12/13/2019 | NS4/NS5-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 54 | 12/13/2019 | NS3/NS4-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 55 | 12/13/2019 | NS2/NS3-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 56 | 12/13/2019 | NS2-NS3 | PDT-18 | DK#261 | - | DX | 12/17/2019 | |
| 57 | 12/13/2019 | NS1-NS2 | P | DK#261 | - | DX | 12/17/2019 | |
| 58 | 12/13/2019 | NS1/NS2-F3 | P | DK#261 | - | DX | 12/17/2019 | |
| 59 | 12/14/2019 | P28-P30 | PDT-11 | DK#261 | - | DX | 12/16/2019 | |
| 60 | 12/14/2019 | P29/P30-P28 | P | DK#261 | - | DX | 12/16/2019 | |
| 61 | 12/14/2019 | P30 | P | DK#261 | - | DX | 12/16/2019 | |
| 62 | 12/14/2019 | P23/P29-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 63 | 12/14/2019 | P29/P31-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 64 | 12/14/2019 | P31-P33 | P | DK#261 | - | DX | 12/16/2019 | |
| 65 | 12/14/2019 | P31-P32/P33 | P | DK#261 | - | DX | 12/16/2019 | |
| 66 | 12/14/2019 | P34-P35 | P | DK#261 | - | DX | 12/16/2019 | |
| 67 | 12/14/2019 | P34-P35 | PDT-13 | DK#261 | - | DX | 12/16/2019 | |
| 68 | 12/14/2019 | P38-P39 | P | DK#261 | - | DX | 12/17/2019 | |
| 69 | 12/16/2019 | P31-P32 | PDT-12 | DK#261 | - | DX | 12/16/2019 | |
| 70 | 12/16/2019 | P31-P32/P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 71 | 12/16/2019 | P32/P34-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 72 | 12/16/2019 | P32/P33-P34 | P | DK#261 | - | DX | 12/16/2019 | |
| 73 | 12/16/2019 | P34-P35/P36 | P | DK#261 | - | DX | 12/16/2019 | |
| 74 | 12/16/2019 | P34/P35-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 75 | 12/16/2019 | P35-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 76 | 12/16/2019 | P35/P37-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 77 | 12/16/2019 | P35-P37 | P | DK#261 | - | DX | 12/16/2019 | |
| 78 | 12/16/2019 | P35-P36 | P | DK#261 | - | DX | 12/16/2019 | |
| 79 | 12/16/2019 | P35/P36-P37 | P | DK#261 | - | DX | 12/16/2019 | |
| 80 | 12/20/2019 | P45-LT | P | KS#401 | - | DX | 1/2/2020 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 8

**TEST/REPAIR LOCATION:** Primary FML, East Floor
**MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 81 | 12/20/2019 | P45/P46-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 82 | 12/20/2019 | P46-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 83 | 12/20/2019 | P46/P48-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 84 | 12/20/2019 | P45-P47 | PDT-21 | KS#401 | - | DX | 1/2/2020 | |
| 85 | 12/20/2019 | P45-P46/P47 | P | KS#401 | - | DX | 1/2/2020 | |
| 86 | 12/20/2019 | P46/P47-P48 | P | KS#401 | - | DX | 1/2/2020 | |
| 87 | 12/20/2019 | P48/P49-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 88 | 12/20/2019 | P49/P51-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 89 | 12/20/2019 | P48-P49 | PDT-22 | KS#401 | - | DX | 1/2/2020 | |
| 90 | 12/20/2019 | P52-P53 | PDT-23 | KS#401 | - | DX | 1/2/2020 | |
| 91 | 12/20/2019 | P53-P54/P55 | P | KS#401 | - | DX | 1/2/2020 | |
| 92 | 12/20/2019 | P54/P55-P56 | P | KS#401 | - | DX | 1/2/2020 | |
| 93 | 12/20/2019 | P51/P53-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 94 | 12/20/2019 | P53/P54-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 95 | 12/20/2019 | P54/P56-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 96 | 12/20/2019 | P56-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 97 | 12/20/2019 | P56/P57-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 98 | 12/20/2019 | P57/P8-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 99 | 12/20/2019 | P58-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 100 | 12/20/2019 | P58/P60-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 101 | 12/20/2019 | P57-P58/P59 | P | KS#401 | - | DX | 1/2/2020 | |
| 102 | 12/20/2019 | P58/P59-P60 | P | KS#401 | - | DX | 1/2/2020 | |
| 103 | 12/20/2019 | P60/P61-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 104 | 12/20/2019 | P61/P62-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 105 | 12/20/2019 | P61-P62 | PDT-26 | KS#401 | - | DX | 1/2/2020 | |
| 106 | 12/20/2019 | P63-P64 | PDT-27 | KS#401 | - | DX | 1/2/2020 | |
| 107 | 12/20/2019 | P62/P63-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 108 | 12/20/2019 | P63/P64-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 109 | 12/20/2019 | P64/P66-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 110 | 12/20/2019 | P66/P67-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 111 | 12/20/2019 | P67-P68 | PDT-28 | KS#401 | - | DX | 1/2/2020 | |
| 112 | 12/20/2019 | P67/P68-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 113 | 12/20/2019 | P68/P70-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 114 | 12/20/2019 | P70/P71-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 115 | 12/21/2019 | P71/P72-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 116 | 12/21/2019 | P72/P74-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 117 | 12/21/2019 | P74/P75-LT | P | KS#401 | - | DX | 1/2/2020 | |
| 118 | 12/21/2019 | P72/P73-P71 | P | KS | - | DX | 12/31/2019 | |
| 119 | 12/21/2019 | P72/P73-P74 | P | KS | - | DX | 12/31/2019 | |
| 120 | 12/20/2019 | P75-E69 | P | DK#261 | - | DX | 12/31/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 9

**TEST/REPAIR LOCATION:** Primary FML, East Slope and Floor
**MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 121 | 12/20/2019 | P74/P75-E68/E69 | P | BX#263 | - | DX | 12/31/2019 | |
| 122 | 12/21/2019 | P73-P74 | PDT-30 | KS#401 | - | DX | 12/31/2019 | |
| 123 | 12/21/2019 | P72/73-P74 | P | KS#401 | - | DX | 12/31/2019 | |
| 124 | 12/21/2019 | P71-P72/P73 | P | KS#401 | - | DX | 12/31/2019 | |
| 125 | 12/21/2019 | P70-P71 | PDT-29 | KS#401 | - | DX | 12/31/2019 | |
| 126 | 12/21/2019 | P73/P74-E67/E68 | P | BX#263 | - | DX | 12/31/2019 | |
| 127 | 12/21/2019 | P71/P73-E65/E67 | P | BX#263 | - | DX | 12/31/2019 | |
| 128 | 12/21/2019 | E64-E65/E66 | P | BX#263 | - | DX | 12/31/2019 | |
| 129 | 12/21/2019 | E65/E66-E67 | P | BX#263 | - | DX | 12/31/2019 | |
| 130 | 12/21/2019 | P70/P71-E64/E65 | P | BX#263 | - | DX | 12/31/2019 | |
| 131 | 12/21/2019 | P64/P70-E64 | P | BX#263 | - | DX | 12/31/2019 | |
| 132 | 12/21/2019 | P69-E63 | P | BX#263 | - | DX | 12/31/2019 | |
| 133 | 12/21/2019 | P68/P69-P70 | P | BX#263 | - | DX | 1/2/2020 | |
| 134 | 12/21/2019 | P68/P69-P67 | P | BX#263 | - | DX | 1/2/2020 | |
| 135 | 12/21/2019 | P67/P69-E63/E62 | P | BX#263 | - | DX | 12/31/2019 | |
| 136 | 12/21/2019 | P67-E62 | P | BX#263 | - | DX | 12/31/2019 | |
| 137 | 12/21/2019 | P66/P67-E62/E61 | P | BX#263 | - | DX | 12/31/2019 | |
| 138 | 12/21/2019 | E60/E61-E62 | P | BX#263 | - | DX | 12/31/2019 | |
| 139 | 12/21/2019 | E60/61-E59 | P | BX#263 | - | DX | 12/31/2019 | |
| 140 | 12/21/2019 | P64/P65-P63 | P | BX#263 | - | DX | 12/31/2019 | |
| 141 | 12/21/2019 | P64/P65-P66 | P | BX#263 | - | DX | 12/31/2019 | |
| 142 | 12/21/2019 | P65/P66-E59/ES60 | P | BX#263 | - | DX | 12/31/2019 | |
| 143 | 12/21/2019 | E62-P67 | PDT-42 | BX#263 | - | DX | 12/31/2019 | |
| 144 | 12/21/2019 | P63/P65-ES8/ES9 | P | BX#263 | - | DX | 12/31/2019 | |
| 145 | 12/21/2019 | P62/P63-E57/E58 | P | BX#263 | - | DX | 12/31/2019 | |
| 146 | 12/21/2019 | P61/P62-E56/57 | P | BX#263 | - | DX | 12/31/2019 | |
| 147 | 12/21/2019 | E54-E55/E56 | P | BX#263 | - | DX | 12/31/2019 | |
| 148 | 12/21/2019 | E55/E56-E57 | P | BX#263 | - | DX | 12/31/2019 | |
| 149 | 12/21/2019 | P61-P60 | P | KS#401 | - | DX | 12/31/2019 | |
| 150 | 12/21/2019 | P60/P61-E54/E56 | P | BX#263 | - | DX | 12/31/2019 | |
| 151 | 12/21/2019 | P59-P60 | PDT-25 | KS#401 | - | DX | 12/31/2019 | |
| 152 | 12/21/2019 | P59/P60-E53/E54 | P | BX#263 | - | DX | 12/31/2019 | |
| 153 | 12/21/2019 | E54-E55 | PDT-40 | BX#263 | - | DX | 12/31/2019 | |
| 154 | 12/21/2019 | P57/P59-E52/E53 | P | BX#263 | - | DX | 12/31/2019 | |
| 155 | 12/21/2019 | P56/P57-E51/E52 | P | BX#263 | - | DX | 12/31/2019 | |
| 156 | 12/21/2019 | P55/P56-E50/E51 | P | BX#263 | - | DX | 12/31/2019 | |
| 157 | 12/21/2019 | P52/P55-E49/E50 | P | BX#263 | - | DX | 12/31/2019 | |
| 158 | 12/21/2019 | LT/NS15-LT/P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 159 | 12/21/2019 | NS15/NS16-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 160 | 12/21/2019 | NS15-NS16 | PDT-31 | KS#401 | - | DX | 12/30/2019 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill **PROJECT NUMBER:** 1056019

**OWNER:** Oilfield Well Logistics **CONTRACTOR:** Mustang Extreme

**PROJECT LOCATION:** Lea County, New Mexico **SHEET NUMBER:** 10

**TEST/REPAIR LOCATION:** Primary FML, North & East Slope, East Floor **MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 161 | 12/21/2019 | NS16/NS17-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 162 | 12/21/2019 | NS17/N19-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 163 | 12/21/2019 | NS17-NS19/NS18 | P | KS#401 | - | DX | 12/30/2019 | |
| 164 | 12/22/2019 | NS18/NS19-NS20 | P | KS#401 | - | DX | 12/30/2019 | |
| 165 | 12/22/2019 | NS19/NS20-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 166 | 12/22/2019 | NS20/NS21-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 167 | 12/22/2019 | NS21/NS22-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 168 | 12/22/2019 | NS22/NS23-P40 | P | KS#401 | - | DX | 12/30/2019 | |
| 169 | 12/22/2019 | NS22-NS23/NS24 | P | DK#261 | - | DX | 12/30/2019 | |
| 170 | 12/22/2019 | NS22-NS23 | PDT-33 | DK#261 | - | DX | 12/30/2019 | |
| 171 | 12/22/2019 | NS18-NS20 | PDT-32 | DK#261 | - | DX | 12/30/2019 | |
| 172 | 12/22/2019 | NS23/NS24-NS25 | P | DK#261 | - | DX | 12/30/2019 | |
| 173 | 12/22/2019 | NS25-NS26 | PX2 | DK#261 | - | DX | 12/30/2019 | |
| 174 | 12/22/2019 | NS27-NS28 | PDT-34 | DK#261 | - | DX | 12/30/2019 | |
| 175 | 12/22/2019 | NS26/NS27-ES35 | P | DK#261 | - | DX | 12/30/2019 | |
| 176 | 12/22/2019 | NS27/NS28-E34 | P | DK#261 | - | DX | 12/30/2019 | |
| 177 | 12/22/2019 | NS28/NS29-E32/E33 | P | DK#261 | - | DX | 12/30/2019 | |
| 178 | 12/22/2019 | NS29/NS30-ES31/ES32 | P | DK#261 | - | DX | 12/30/2019 | |
| 179 | 12/22/2019 | ES33/ES34-NS28 | P | DK#261 | - | DX | 12/30/2019 | |
| 180 | 12/22/2019 | ES34-ES35/ES36 | P | DK#261 | - | DX | 12/30/2019 | |
| 181 | 12/22/2019 | ES35/ES36-ES37 | P | DK#261 | - | DX | 12/30/2019 | |
| 182 | 12/22/2019 | ES34/ES35-NS27 | P | DK#261 | - | DX | 12/30/2019 | |
| 183 | 12/22/2019 | ES35/ES37-NS26 | P | DK#261 | - | DX | 12/30/2019 | |
| 184 | 12/22/2019 | ES35-ES37 | PDT-35 | DK#261 | - | DX | 12/30/2019 | |
| 185 | 12/22/2019 | NS25/NS26-ES37 | P | DK#261 | - | DX | 12/30/2019 | |
| 186 | 12/22/2019 | ES37/ES38NS25/P40 | P | DK#261 | - | DX | 12/30/2019 | |
| 187 | 12/22/2019 | ES38/ES39-P40/P41 | P | DK#261 | - | DX | 12/30/2019 | |
| 188 | 12/22/2019 | P41/P42-ES39/ES40 | P | DK#261 | - | DX | 12/30/2019 | |
| 189 | 12/22/2019 | P41-P43 | PDT-19 | DK#261 | - | DX | 1/2/2020 | |
| 190 | 12/20/2019 | P41-P42/P43 | P | KS#401 | - | DX | 12/30/2019 | |
| 191 | 12/20/2019 | P42/P43-P44 | P | KS#401 | - | DX | 12/30/2019 | |
| 192 | 12/20/2019 | P42-P44 | PDT-20 | KS#401 | - | DX | 1/2/2020 | |
| 193 | 12/20/2019 | P42-P44 | P | KS#401 | - | DX | 12/30/2019 | |
| 194 | 12/20/2019 | P40/P41-LT | P | KS#401 | - | DX | 12/30/2019 | |
| 195 | 12/20/2019 | P41/P42-LT | P | KS#401 | - | DX | 12/30/2019 | |
| 196 | 12/20/2019 | P42/P44-LT | P | KS#401 | - | DX | 12/30/2019 | |
| 197 | 12/20/2019 | P44/P45-LT | P | KS#401 | - | DX | 12/30/2019 | |
| 198 | 12/16/2019 | P37-P38 | PDT-14 | DK#261 | - | DX | 12/16/2019 | |
| 199 | 12/16/2019 | P37/P38-P2 | P | DK#261 | - | DX | 12/16/2019 | |
| 200 | 12/22/2019 | P41-P43 | PDT-19 | BX | - | DX | 1/2/2020 | |

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# FML SEAM VACUUM TEST/REPAIR LOG

**PROJECT NAME:** OWL Landfill
**PROJECT NUMBER:** 1056019
**OWNER:** Oilfield Well Logistics
**CONTRACTOR:** Mustang Extreme
**PROJECT LOCATION:** Lea County, New Mexico
**SHEET NUMBER:** 11

**TEST/REPAIR LOCATION:** Primary FML, East Slope & Floor
**MONITOR:** Braden Belliveau

| | REPAIR DATE | PANEL | TYPE OF REPAIR | REPAIR TECH | NUMBER OF LEAKS | TESTING TECH ID | DATE ACCEPTED | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 201 | 12/22/2019 | P51-P53 | PDT-33 | BX#263 | - | DX | 1/2/2020 | |
| 202 | 12/22/2019 | P51-P52/P53 | P | BX#263 | - | DX | 12/31/2019 | |
| 203 | 12/22/2019 | P52/P53-P55 | P | BX#263 | - | DX | 12/31/2019 | |
| 204 | 12/22/2019 | P51/P52-E48/E49 | P | BX#263 | - | DX | 1/2/2020 | |
| 205 | 12/22/2019 | ES49-ES50 | PDT-38 | BX#263 | - | DX | 12/31/2019 | |
| 206 | 12/22/2019 | ES44-ES45 | PDT-37 | BX#263 | - | DX | 12/31/2019 | |
| 207 | 12/22/2019 | E40-E41/E42 | P | BX#263 | - | DX | 12/31/2019 | |
| 208 | 12/22/2019 | E41/E42-E43 | P | BX#263 | - | DX | 12/31/2019 | |
| 209 | 12/22/2019 | E40-E41 | P | DK | - | DX | 12/31/2019 | |
| 210 | 12/22/2019 | E40-E42 | P | DK | - | DX | 12/31/2019 | |
| 211 | 12/22/2019 | ES39-ES40 | PDT-36 | DK | - | DX | 12/31/2019 | |
| 212 | 12/22/2019 | ES35/ES36-ES34 | P | DK | - | DX | 12/31/2019 | |
| 213 | 12/22/2019 | ES35/ES36-ES37 | P | DK | - | DX | 12/31/2019 | |
| 214 | 12/22/2019 | ES35-ES37 | PDT-35 | DK | - | DX | 12/31/2019 | |
| 215 | 12/22/2019 | NS25/NS30-ES31/ES37 | PX9 | BX | - | DX | 12/31/2019 | |
| 216 | 12/22/2019 | E51-E52 | PDT-39 | BX | - | DX | 12/31/2019 | |
| 217 | 12/22/2019 | P50/P51-E47/E48 | | BX | - | DX | 1/2/2020 | |
| 218 | 12/22/2019 | P48/P49-E45/E46 | | BX | - | DX | 1/2/2020 | |
| 219 | 12/22/2019 | P47/P48-E44/E45 | | BX | - | DX | 1/2/2020 | |
| 220 | 12/22/2019 | P45/P47-E43/E44 | | BX | - | DX | 1/2/2020 | |
| 221 | 12/22/2019 | P44/P45-E43/E44 | | BX | - | DX | 1/2/2020 | |
| 222 | 12/22/2019 | P43/P44-E40/E41 | | BX | - | DX | 1/2/2020 | |

# APPENDIX C

## Cell 1A Liner Installation Documentation

C.17. Geocomposite Deployment Log

GORDON ENVIRONMENTAL PSC

333 Rio Rancho Blvd. NE, Suite 400
Rio Rancho, New Mexico 87124
505.867.6990

# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 1 |
| **DEPLOYMENT LOCATION:** | Leak Detection Layer, North Slope, Double Sided | **MONITOR:** | Diego Ramirez |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| NS1 | 131576804 | 138 | 14.75 | 2,036 | 12/7/19 |
| NS2 | 131576804 | 127 | 14.75 | 1,873 | 12/7/19 |
| NS3 | 131576763 | 120 | 14.75 | 1,770 | 12/9/19 |
| NS4 | 131576763 | 48 | 14.75 | 708 | 12/9/19 |
| NS5 | 131576747 | 85 | 14.75 | 1,254 | 12/9/19 |
| NS6 | 131576747 | 120 | 14.75 | 1,770 | 12/9/19 |
| NS7 | 131576747 | 20 | 14.75 | 295 | 12/9/19 |
| NS8 | 131575767 | 99 | 14.75 | 1,460 | 12/9/19 |
| NS9 | 131575767 | 91 | 14.75 | 1,342 | 12/10/19 |
| NS10 | 131576726 | 25 | 14.75 | 369 | 12/10/19 |
| NS11 | 131576726 | 116 | 14.75 | 1,711 | 12/10/19 |
| NS12 | 131576726 | 51 | 14.75 | 752 | 12/10/19 |
| NS13 | 131576753 | 64 | 14.75 | 944 | 12/10/19 |
| NS14 | 131576753 | 115 | 14.75 | 1,696 | 12/10/19 |
| NS15 | 131576753 | 17 | 14.75 | 251 | 12/10/19 |
| NS16 | 131576696 | 100 | 14.75 | 1,475 | 12/10/19 |
| NS17 | 131576696 | 100 | 14.75 | 1,475 | 12/10/19 |
| NS18 | 131576782 | 16 | 14.75 | 236 | 12/10/19 |
| NS19 | 131576782 | 113 | 14.75 | 1,667 | 12/10/19 |
| NS20 | 131576782 | 70 | 14.75 | 1,033 | 12/10/19 |
| NS21 | 131576754 | 42 | 14.75 | 620 | 12/10/19 |
| NS22 | 131576754 | 113 | 14.75 | 1,667 | 12/10/19 |
| NS23 | 131576754 | 46 | 14.75 | 679 | 12/10/19 |
| NS24 | 131576764 | 65 | 14.75 | 959 | 12/10/19 |
| NS25 | 131576764 | 113 | 14.75 | 1,667 | 12/10/19 |
| NS26 | 131576790 | 128 | 14.75 | 1,888 | 12/18/19 |
| NS27 | 131576790 | 72 | 14.75 | 1,062 | 12/18/19 |
| NS28 | 131576748 | 58 | 14.75 | 856 | 12/18/19 |
| NS29 | 131576748 | 128 | 14.75 | 1,888 | 12/18/19 |
| NS30 | 131576748 | 14 | 14.75 | 207 | 12/18/19 |
| NS31 | 131576800 | 112 | 14.75 | 1,652 | 12/18/19 |
| NS32 | 131576800 | 74 | 14.75 | 1,092 | 12/18/19 |
| NS33 | 131576697 | 44 | 14.75 | 649 | 12/18/19 |
| NS34 | 131576697 | 128 | 14.75 | 1,888 | 12/18/19 |
| NS35 | 131576697 | 23 | 14.75 | 339 | 12/18/19 |
| NS36 | 131576725 | 92 | 14.75 | 1,357 | 12/18/19 |
| NS37 | 131576725 | 92 | 14.75 | 1,357 | 12/18/19 |
| NS38 | 131576784 | 36 | 14.75 | 531 | 12/18/19 |
| NS39 | 131576784 | 125 | 14.75 | 1,844 | 12/18/19 |
| NS40 | 131576784 | 33 | 14.75 | 487 | 12/18/19 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 46,802 | |

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 2 |
| **DEPLOYMENT LOCATION:** | Leak Detection Layer, North & East Slopes, Double Sided | **MONITOR:** | Diego Ramirez, Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| NS41 | 131576762 | 125 | 14.75 | 1,844 | 12/7/19 |
| NS42 | 131576762 | 73 | 14.75 | 1,077 | 12/7/19 |
| NS43 | 131576691 | 19 | 14.75 | 280 | 12/9/19 |
| NS44 | 131576691 | 126 | 14.75 | 1,859 | 12/9/19 |
| NS45 | 131576691 | 50 | 14.75 | 738 | 12/9/19 |
| NS46 | 131576705 | 76 | 14.75 | 1,121 | 12/9/19 |
| NS47 | 131576705 | 125 | 14.75 | 1,844 | 12/9/19 |
| NS48 | 131576768 | 125 | 14.75 | 1,844 | 12/9/19 |
| NS49 | 131576768 | 76 | 14.75 | 1,121 | 12/10/19 |
| NS50 | 131576692 | 27 | 14.75 | 398 | 12/10/19 |
| NS51 | 131576692 | 72 | 14.75 | 1,062 | 12/10/19 |
| NS52 | 131576692 | 62 | 14.75 | 915 | 12/10/19 |
| NS53 | 131576692 | 41 | 14.75 | 605 | 12/10/19 |
| NS54 | 131576702 | 41 | 14.75 | 605 | 12/10/19 |
| NS55 | 131576702 | 23 | 14.75 | 339 | 12/10/19 |
| NS56 | 131576702 | 23 | 14.75 | 339 | 12/10/19 |
| NS57 | 131576702 | 23 | 14.75 | 339 | 12/10/19 |
| NS58 | 131576702 | 59 | 14.75 | 870 | 12/10/19 |
| NS59 | 131576702 | 44 | 14.75 | 649 | 12/10/19 |
| NS60 | 131576713 | 23 | 14.75 | 339 | 12/10/19 |
| NS61 | 131576713 | 80 | 14.75 | 1,180 | 12/10/19 |
| NS62 | 131576713 | 80 | 14.75 | 1,180 | 12/10/19 |
| NS63 | 131576713 | 14 | 14.75 | 207 | 12/10/19 |
| NS64 | 131576786 | 80 | 14.75 | 1,180 | 12/10/19 |
| ES65 | 131576786 | 97 | 14.75 | 1,431 | 12/10/19 |
| ES66 | 131576786 | 18 | 14.75 | 266 | 12/18/19 |
| ES67 | 131576701 | 86 | 14.75 | 1,269 | 12/18/19 |
| ES68 | 131576701 | 104 | 14.75 | 1,534 | 12/18/19 |
| ES69 | 131576727 | 107 | 14.75 | 1,578 | 12/18/19 |
| ES70 | 131576727 | 97 | 14.75 | 1,431 | 12/18/19 |
| ES71 | 131576701 | 10 | 14.75 | 148 | 12/18/19 |
| ES72 | 131576716 | 105 | 14.75 | 1,549 | 12/18/19 |
| ES73 | 131576716 | 90 | 14.75 | 1,328 | 12/18/19 |
| ES74 | 131576710 | 15 | 14.75 | 221 | 12/18/19 |
| ES75 | 131576710 | 109 | 14.75 | 1,608 | 12/18/19 |
| ES76 | 131576710 | 70 | 14.75 | 1,033 | 12/18/19 |
| ES77 | 131576785 | 41 | 14.75 | 605 | 12/18/19 |
| ES78 | 131576785 | 115 | 14.75 | 1,696 | 12/18/19 |
| ES79 | 131576785 | 44 | 14.75 | 649 | 12/18/19 |
| ES80 | 131576783 | 66 | 14.75 | 974 | 12/18/19 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 39,250 | |

GORDON ENVIRONMENTAL PSC

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 3 |
| **DEPLOYMENT LOCATION:** | Leak Detection Layer, East Slope, Double Sided | **MONITOR:** | Diego Ramirez, Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| ES81 | 131576783 | 115 | 14.75 | 1,696 | 12/18/19 |
| ES82 | 131576783 | 17 | 14.75 | 251 | 12/18/19 |
| ES83 | 131576711 | 100 | 14.75 | 1,475 | 12/19/19 |
| ES84 | 131576711 | 96 | 14.75 | 1,416 | 12/19/19 |
| ES85 | 131576799 | 19 | 14.75 | 280 | 12/19/19 |
| ES86 | 131576799 | 116 | 14.75 | 1,711 | 12/19/19 |
| ES87 | 131576799 | 60 | 14.75 | 885 | 12/19/19 |
| ES88 | 131576698 | 59 | 14.75 | 870 | 12/19/19 |
| ES89 | 131576698 | 115 | 14.75 | 1,696 | 12/19/19 |
| ES90 | 131576698 | 21 | 14.75 | 310 | 12/19/19 |
| ES91 | 131576722 | 104 | 14.75 | 1,534 | 12/19/19 |
| ES92 | 131576722 | 92 | 14.75 | 1,357 | 12/19/19 |
| ES93 | 131576745 | 34 | 14.75 | 502 | 12/19/19 |
| ES94 | 131576745 | 124 | 14.75 | 1,829 | 12/19/19 |
| ES95 | 131576745 | 34 | 14.75 | 502 | 12/19/19 |
| ES96 | 131576788 | 93 | 14.75 | 1,372 | 12/19/19 |
| ES97 | 131576788 | 104 | 14.75 | 1,534 | 12/19/19 |
| ES98 | 131576717 | 21 | 14.75 | 310 | 12/19/19 |
| ES99 | 131576717 | 125 | 14.75 | 1,844 | 12/19/19 |
| ES100 | 131576717 | 53 | 14.75 | 782 | 12/19/19 |
| ES101 | 131576789 | 75 | 14.75 | 1,106 | 12/19/19 |
| ES102 | 131576789 | 125 | 14.75 | 1,844 | 12/19/19 |
| ES103 | 131576714 | 125 | 14.75 | 1,844 | 12/19/19 |
| ES104 | 131576714 | 76 | 14.75 | 1,121 | 12/19/19 |
| ES105 | 131576718 | 51 | 14.75 | 752 | 12/19/19 |
| ES106 | 131576718 | 127 | 14.75 | 1,873 | 12/19/19 |
| ES107 | 131576718 | 23 | 14.75 | 339 | 12/19/19 |
| ES108 | 131576708 | 104 | 14.75 | 1,534 | 12/19/19 |
| ES109 | 131576708 | 98 | 14.75 | 1,446 | 12/19/19 |
| ES110 | 131576775 | 34 | 14.75 | 502 | 12/19/19 |
| ES111 | 131576775 | 134 | 14.75 | 1,977 | 12/19/19 |
| ES112 | 131576775 | 35 | 14.75 | 516 | 12/19/19 |
| ES113 | 131576719 | 97 | 14.75 | 1,431 | 12/19/19 |
| ES114 | 131576719 | 102 | 14.75 | 1,505 | 12/19/19 |
| ES115 | 131576720 | 30 | 14.75 | 443 | 12/19/19 |
| ES116 | 131576720 | 132 | 14.75 | 1,947 | 12/19/19 |
| ES117 | 131576720 | 40 | 14.75 | 590 | 12/19/19 |
| ES118 | 131576694 | 92 | 14.75 | 1,357 | 12/19/19 |
| ES119 | 131576694 | 104 | 14.75 | 1,534 | 12/19/19 |
| ES120 | 131576707 | 28 | 14.75 | 413 | 12/19/19 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 46,227 | |

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 4 |
| **DEPLOYMENT LOCATION:** | Leak Detection Layer, East Slope, Double Sided | **MONITOR:** | Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| ES121 | 131576707 | 133 | 14.75 | 1,962 | 12/18/19 |
| ES122 | 131576707 | 26 | 14.75 | 384 | 12/18/19 |
| ES123 | 131576769 | 108 | 14.75 | 1,593 | 12/19/19 |
| ES124 | 131576769 | 90 | 14.75 | 1,328 | 12/19/19 |
| ES125 | 131576759 | 48 | 14.75 | 708 | 12/19/19 |
| ES126 | 131576759 | 135 | 14.75 | 1,991 | 12/19/19 |
| ES127 | 131576759 | 11 | 14.75 | 162 | 12/19/19 |
| ES128 | 131576766 | 124 | 14.75 | 1,829 | 12/19/19 |
| ES129 | 131576766 | 26 | 14.75 | 384 | 12/19/19 |
| ES130 | 131576737 | 63 | 14.75 | 929 | 12/19/19 |
| | | | | | |
| | | | | | |
| | | | | |

GORDON ENVIRONMENTAL PSC

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 5 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, West Side, Floor, Single Sided | **MONITOR:** | Diego Ramirez |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| P1 | 131576621 | 224 | 14.75 | 3,304.0 | 12/16/19 |
| P2 | 131576621 | 56 | 14.75 | 826.0 | 12/16/19 |
| P3 | 131576618 | 168 | 14.75 | 2,478.0 | 12/16/19 |
| P4 | 131576618 | 108 | 14.75 | 1,593.0 | 12/16/19 |
| P5 | 131576637 | 115 | 14.75 | 1,696.3 | 12/16/19 |
| P6 | 131576631 | 163 | 14.75 | 2,404.3 | 12/16/19 |
| P7 | 131576628 | 58 | 14.75 | 855.5 | 12/16/19 |
| P8 | 131576628 | 227 | 14.75 | 3,348.3 | 12/16/19 |
| P9 | 131576610 | 227 | 14.75 | 3,348.3 | 12/16/19 |
| P10 | 131576610 | 55 | 14.75 | 811.3 | 12/16/19 |
| P11 | 131576629 | 173 | 14.75 | 2,551.8 | 12/16/19 |
| P12 | 131576629 | 111 | 14.75 | 1,637.3 | 12/16/19 |
| P13 | 131576632 | 117 | 14.75 | 1,725.8 | 12/16/19 |
| P14 | 131576630 | 175 | 14.75 | 2,581.3 | 12/16/19 |
| P15 | 131576630 | 55 | 14.75 | 811.3 | 12/16/19 |
| P16 | 131576630 | 230 | 14.75 | 3,392.5 | 12/16/19 |
| P17 | 131576674 | 230 | 14.75 | 3,392.5 | 12/16/19 |
| P18 | 131576674 | 52 | 14.75 | 767.0 | 12/16/19 |
| P19 | 131576637 | 178 | 14.75 | 2,625.5 | 12/16/19 |
| P20 | 131576637 | 111 | 14.75 | 1,637.3 | 12/16/19 |
| P21 | 131576642 | 120 | 14.75 | 1,770.0 | 12/16/19 |
| P22 | 131576642 | 172 | 14.75 | 2,537.0 | 12/16/19 |
| P23 | 131576685 | 59 | 14.75 | 870.3 | 12/16/19 |
| P24 | 131576685 | 230 | 14.75 | 3,392.5 | 12/16/19 |
| P25 | 131576611 | 230 | 14.75 | 3,392.5 | 12/16/19 |
| P26 | 131576611 | 58 | 14.75 | 855.5 | 12/16/19 |
| P27 | 131576667 | 171 | 14.75 | 2,522.3 | 12/16/19 |
| P28 | 131576667 | 115 | 14.75 | 1,696.3 | 12/16/19 |
| P29 | 131576646 | 115 | 14.75 | 1,696.3 | 12/16/19 |
| P30 | 131576646 | 275 | 14.75 | 4,056.3 | 12/16/19 |
| P31 | 131576633 | 55 | 14.75 | 811.3 | 12/16/19 |
| P32 | 131576633 | 230 | 14.75 | 3,392.5 | 12/16/19 |
| P33 | 131576640 | 173 | 14.75 | 2,551.8 | 12/16/19 |
| P34 | 131576640 | 57 | 14.75 | 840.8 | 12/16/19 |
| P35 | 131576686 | 230 | 14.75 | 3,392.5 | 12/16/19 |
| P36 | 131576686 | 110 | 14.75 | 1,622.5 | 12/16/19 |
| P37 | 131576673 | 120 | 14.75 | 1,770.0 | 12/16/19 |
| P38 | 131576673 | 169 | 14.75 | 2,492.8 | 12/16/19 |
| P39 | 131576639 | 56 | 14.75 | 826.0 | 12/16/19 |
| P40 | 131576639 | 223 | 14.75 | 3,289.3 | 12/16/19 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 85,564.8 | |

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 6 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, East & West Side, Floor, Single Sided | **MONITOR:** | Diego Ramirez, Don Gray |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| P41 | 131576651 | 234 | 14.75 | 3,451.5 | 12/16/2019 |
| P42 | 131576651 | 9 | 14.75 | 132.8 | 12/16/2019 |
| P43 | 131576651 | 46 | 14.75 | 678.5 | 12/16/2019 |
| P44 | 131576616 | 185 | 14.75 | 2,728.8 | 12/16/2019 |
| P45 | 131576616 | 10 | 14.75 | 147.5 | 12/17/2019 |
| P46 | 131576612 | 130 | 14.75 | 1,917.5 | 12/17/2019 |
| P47 | 131576612 | 156 | 14.75 | 2,301.0 | 12/17/2019 |
| P48 | 131576653 | 75 | 14.75 | 1,106.3 | 12/17/2019 |
| P49 | 131576653 | 218 | 14.75 | 3,215.5 | 12/17/2019 |
| P50 | 131576683 | 16 | 14.75 | 236.0 | 12/17/2019 |
| P51 | 131576683 | 233 | 14.75 | 3,436.8 | 12/17/2019 |
| P52 | 131576683 | 41 | 14.75 | 604.8 | 12/17/2019 |
| P53 | 131576672 | 190 | 14.75 | 2,802.5 | 12/17/2019 |
| P54 | 131576672 | 93 | 14.75 | 1,371.8 | 12/17/2019 |
| P55 | 131576638 | 136 | 14.75 | 2,006.0 | 12/17/2019 |
| P56 | 131576638 | 155 | 14.75 | 2,286.3 | 12/17/2019 |
| P57 | 131576675 | 78 | 14.75 | 1,150.5 | 12/17/2019 |
| P58 | 131576675 | 205 | 14.75 | 3,023.8 | 12/17/2019 |
| P59 | 131576687 | 23 | 14.75 | 339.3 | 12/17/2019 |
| P60 | 131576687 | 228 | 14.75 | 3,363.0 | 12/17/2019 |
| P61 | 131576687 | 36 | 14.75 | 531.0 | 12/17/2019 |
| P62 | 131576650 | 197 | 14.75 | 2,905.8 | 12/17/2019 |
| P63 | 131576650 | 93 | 14.75 | 1,371.8 | 12/17/2019 |
| P64 | 131576652 | 139 | 14.75 | 2,050.3 | 12/17/2019 |
| P65 | 131576652 | 145 | 14.75 | 2,138.8 | 12/17/2019 |
| P66 | 131576623 | 84 | 14.75 | 1,239.0 | 12/17/2019 |
| P67 | 131576623 | 200 | 14.75 | 2,950.0 | 12/17/2019 |
| P68 | 131576634 | 31 | 14.75 | 457.3 | 12/17/2019 |
| P69 | 131576634 | 228 | 14.75 | 3,363.0 | 12/17/2019 |
| P70 | 131576634 | 29 | 6 | 174.0 | 12/17/2019 |
| P71 | 131576634 | 28 | 6 | 168.0 | 12/17/2019 |
| P72 | 131576649 | 30 | 7 | 210.0 | 12/17/2019 |
| P73 | 131576649 | 47 | 10 | 470.0 | 12/17/2019 |
| P74 | 131576649 | 16 | 10 | 160.0 | 12/17/2019 |
| P75 | 131576640 | 288 | 14.75 | 4,248.0 | 12/17/2019 |
| P76 | 131576664 | 288 | 14.75 | 4,248.0 | 12/17/2019 |
| P77 | 131576625 | 70 | 14.75 | 1,032.5 | 12/17/2019 |
| P78 | 131576666 | 180 | 14.75 | 2,655.0 | 1/3/2020 |
| P79 | 131576666 | 108 | 14.75 | 1,593.0 | 1/3/2020 |
| P80 | 131576656 | 77 | 14.75 | 1,135.8 | 1/3/2020 |
| **TOTAL LINER PLACED ($FT^2$):** | | | | 69,401 | |

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505.867.6990

# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 7 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, East Side, Floor, Single Sided | **MONITOR:** | Diego Ramirez |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| P81 | 131576656 | 178 | 14.75 | 2,625.5 | 1/3/2020 |
| P82 | 131576645 | 180 | 14.75 | 2,655.0 | 1/3/2020 |
| P83 | 131576656 | 22 | 14.75 | 324.5 | 1/3/2020 |
| P84 | 131576645 | 160 | 14.75 | 2,360.0 | 1/3/2020 |
| P85 | 131576625 | 125 | 14.75 | 1,843.8 | 1/3/2020 |
| P86 | 131576648 | 51 | 14.75 | 752.3 | 1/3/2020 |
| P87 | 131576648 | 187 | 14.75 | 2,758.3 | 1/3/2020 |
| P88 | 131576648 | 30 | 14.75 | 442.5 | 1/3/2020 |
| P89 | 131576679 | 150 | 14.75 | 2,212.5 | 1/3/2020 |
| P90 | 131576658 | 125 | 14.75 | 1,843.8 | 1/3/2020 |
| P91 | 131576658 | 49 | 14.75 | 722.8 | 1/3/2020 |
| P92 | 131576658 | 182 | 14.75 | 2,684.5 | 1/3/2020 |
| P93 | 131576658 | 46 | 14.75 | 678.5 | 1/3/2020 |
| P94 | 131576660 | 142 | 14.75 | 2,094.5 | 1/3/2020 |
| P95 | 131576660 | 126 | 14.75 | 1,858.5 | 1/3/2020 |
| P96 | 131576681 | 60 | 14.75 | 885.0 | 1/3/2020 |
| P97 | 131576681 | 195 | 14.75 | 2,876.3 | 1/3/2020 |
| P98 | 131576681 | 32 | 14.75 | 472.0 | 1/3/2020 |
| P99 | 131576605 | 163 | 14.75 | 2,404.3 | 1/3/2020 |
| P100 | 131576605 | 125 | 14.75 | 1,843.8 | 1/3/2020 |
| P101 | 131576668 | 75 | 14.75 | 1,106.3 | 1/3/2020 |
| P102 | 131576668 | 197 | 14.75 | 2,905.8 | 1/3/2020 |
| P103 | 131576668 | 16 | 14.75 | 236.0 | 1/3/2020 |
| P104 | 131576601 | 180 | 14.75 | 2,655.0 | 1/3/2020 |
| P105 | 131576601 | 107 | 14.75 | 1,578.3 | 1/3/2020 |
| P106 | 131576659 | 90 | 14.75 | 1,327.5 | 1/3/2020 |
| P107 | 131576659 | 199 | 14.75 | 2,935.3 | 1/3/2020 |
| P108 | 131576641 | 199 | 14.75 | 2,935.3 | 1/3/2020 |
| P109 | 131576641 | 90 | 14.75 | 1,327.5 | 1/3/2020 |
| P110 | 131576636 | 111 | 14.75 | 1,637.3 | 1/3/2020 |
| P111 | 131576671 | 180 | 14.75 | 2,655.0 | 1/3/2020 |
| P112 | 131576671 | 22 | 14.75 | 324.5 | 1/3/2020 |
| P113 | 131576671 | 200 | 14.75 | 2,950.0 | 1/3/2020 |
| P114 | 131576671 | 52 | 14.75 | 767.0 | 1/3/2020 |
| P115 | 131576597 | 128 | 14.75 | 1,888.0 | 1/3/2020 |
| P116 | 131576644 | 155 | 14.75 | 2,286.3 | 1/3/2020 |
| P117 | 131576644 | 26 | 14.75 | 383.5 | 1/3/2020 |
| P118 | 131576644 | 181 | 14.75 | 2,669.8 | 1/3/2020 |
| P119 | 131576635 | 80 | 14.75 | 1,180.0 | 1/3/2020 |
| P120 | 131576635 | 100 | 14.75 | 1,475.0 | 1/3/2020 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 69,561.0 | |

GORDON PSC ENVIRONMENTAL

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505.867.6990

# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 8 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, East Side, Floor, Single Sided | **MONITOR:** | Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| P121 | 131576635 | 178 | 14.75 | 2,625.5 | 1/3/2020 |
| P122 | 131576635 | 10 | 14.75 | 147.5 | 1/3/2020 |
| P123 | 131576669 | 170 | 14.75 | 2,507.5 | 1/3/2020 |
| P124 | 131576669 | 116 | 14.75 | 1,711.0 | 1/3/2020 |
| P125 | 131576699 | 63 | 14.75 | 929.3 | 1/3/2020 |
| P126 | 131576699 | 178 | 14.75 | 2,625.5 | 1/3/2020 |
| P127 | 131576699 | 46 | 14.75 | 678.5 | 1/3/2020 |
| P128 | 131576805 | 135 | 14.75 | 1,991.3 | 1/3/2020 |
| P129 | 131576805 | 153 | 14.75 | 2,256.8 | 1/3/2020 |
| P130 | 131576682 | 138 | 14.75 | 2,035.5 | 1/3/2020 |
| P131 | 131576682 | 27 | 14.75 | 398.3 | 1/4/2020 |
| P132 | 131576682 | 43 | 14.75 | 634.3 | 1/4/2020 |
| P133 | 131576682 | 78 | 14.75 | 1,150.5 | 1/4/2020 |
| P134 | 131576614 | 100 | 14.75 | 1,475.0 | 1/4/2020 |
| P135 | 131576614 | 178 | 14.75 | 2,625.5 | 1/4/2020 |
| P136 | 131576615 | 178 | 14.75 | 2,625.5 | 1/4/2020 |
| P137 | 131576615 | 109 | 14.75 | 1,607.8 | 1/4/2020 |
| P138 | 131576776 | 68 | 14.75 | 1,003.0 | 1/4/2020 |
| P139 | 131576776 | 176 | 14.75 | 2,596.0 | 1/4/2020 |
| P140 | 131576776 | 43 | 14.75 | 634.3 | 1/4/2020 |
| P141 | 131576682 | 133 | 14.75 | 1,961.8 | 1/4/2020 |
| P142 | 131576682 | 157 | 14.75 | 2,315.8 | 1/4/2020 |
| P143 | 131576622 | 11 | 14.75 | 162.3 | 1/4/2020 |
| P144 | 131576626 | 288 | 14.75 | 4,248.0 | 12/7/2019 |
| P145 | 131576684 | 288 | 14.75 | 4,248.0 | 12/7/2019 |
| P146 | 131576676 | 70 | 14.75 | 1,032.5 | 12/7/2019 |
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| | | | | | |
| **TOTAL LINER PLACED ($FT^2$):** | | | | 46,226.5 | |

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# GEOCOMPSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 9 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, West Side, North Slope, Double Sided | **MONITOR:** | Braden Belliveau, Diego Ramirez |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| NS1 (L Trench) | 131576676 | 135 | 14.75 | 1,991.3 | 12/12/2019 |
| NS2 | 131576746 | 134 | 14.75 | 1,976.5 | 12/17/2019 |
| NS3 | 131576746 | 65 | 14.75 | 958.8 | 12/17/2019 |
| NS4 | 131576787 | 68 | 14.75 | 1,003.0 | 12/17/2019 |
| NS5 | 131576787 | 130 | 14.75 | 1,917.5 | 12/17/2019 |
| NS6 | 131576767 | 127 | 14.75 | 1,873.3 | 12/17/2019 |
| NS7 | 131576794 | 68 | 14.75 | 1,003.0 | 12/17/2019 |
| NS8 | 131576794 | 59 | 14.75 | 870.3 | 12/17/2019 |
| NS9 | 131576780 | 127 | 14.75 | 1,873.3 | 12/17/2019 |
| NS10 | 131576780 | 124 | 14.75 | 1,829.0 | 12/17/2019 |
| NS11 | 131576721 | 76 | 14.75 | 1,121.0 | 12/17/2019 |
| NS12 | 131576721 | 48 | 14.75 | 708.0 | 12/17/2019 |
| NS13 | 131576721 | 124 | 14.75 | 1,829.0 | 12/17/2019 |
| NS14 | 131576744 | 19 | 14.75 | 280.3 | 12/17/2019 |
| NS15 | 131576744 | 99 | 14.75 | 1,460.3 | 12/17/2019 |
| NS16 | 131576744 | 97 | 14.75 | 1,430.8 | 12/17/2019 |
| NS17 | 131576774 | 26 | 14.75 | 383.5 | 12/17/2019 |
| NS18 | 131576774 | 122 | 14.75 | 1,799.5 | 12/17/2019 |
| NS19 | 131576774 | 46 | 14.75 | 678.5 | 12/17/2019 |
| NS20 | 131576796 | 74 | 14.75 | 1,091.5 | 12/17/2019 |
| NS21 | 131576796 | 120 | 14.75 | 1,770.0 | 12/17/2019 |
| NS22 | 131576738 | 122 | 14.75 | 1,799.5 | 12/17/2019 |
| NS23 | 131576738 | 81 | 14.75 | 1,194.8 | 12/17/2019 |
| NS24 | 131576795 | 36 | 14.75 | 531.0 | 12/17/2019 |
| NS25 | 131576732 | 134 | 14.75 | 1,976.5 | 12/30/2019 |
| NS26 | 131576732 | 65 | 14.75 | 958.8 | 12/30/2019 |
| NS27 | 131576798 | 69 | 14.75 | 1,017.8 | 12/30/2019 |
| NS28 | 131576798 | 58 | 14.75 | 855.5 | 12/30/2019 |
| NS29 | 131576793 | 127 | 14.75 | 1,873.3 | 12/30/2019 |
| NS30 | 131576793 | 16 | 14.75 | 236.0 | 12/30/2019 |
| NS31 | 131576730 | 114 | 14.75 | 1,681.5 | 12/30/2019 |
| NS32 | 131576730 | 69 | 14.75 | 1,017.8 | 12/30/2019 |
| NS33 | 131576730 | 45 | 14.75 | 663.8 | 12/30/2019 |
| NS34 | 131576736 | 128 | 14.75 | 1,888.0 | 12/30/2019 |
| NS35 | 131576728 | 33 | 14.75 | 486.8 | 12/30/2019 |
| NS36 | 131576728 | 92 | 14.75 | 1,357.0 | 12/30/2019 |
| NS37 | 131576695 | 92 | 14.75 | 1,357.0 | 12/30/2019 |
| NS38 | 131576695 | 36 | 14.75 | 531.0 | 12/30/2019 |
| NS39 | 131576801 | 125 | 14.75 | 1,843.8 | 12/30/2019 |
| NS40 | 131576801 | 33 | 14.75 | 486.8 | 12/30/2019 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 49,604.3 | |

GORDON ENVIRONMENTAL PSC

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 10 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, North and East Slopes, Double Sided | **MONITOR:** | Diego Ramirez |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| NS41 | 131576765 | 125 | 14.75 | 1,843.8 | 12/30/2019 |
| NS42 | 131576765 | 73 | 14.75 | 1,076.8 | 12/30/2019 |
| NS43 | 131576709 | 19 | 14.75 | 280.3 | 12/30/2019 |
| NS44 | 131576709 | 126 | 14.75 | 1,858.5 | 12/30/2019 |
| NS45 | 131576772 | 50 | 14.75 | 737.5 | 12/30/2019 |
| NS46 | 131576772 | 76 | 14.75 | 1,121.0 | 12/30/2019 |
| NS47 | 131576731 | 125 | 14.75 | 1,843.8 | 12/30/2019 |
| NS48 | 131576731 | 125 | 14.75 | 1,843.8 | 12/30/2019 |
| NS49 | 131576731 | 76 | 14.75 | 1,121.0 | 12/30/2019 |
| ES50 | 131576731 | 27 | 14.75 | 398.3 | 12/30/2019 |
| ES51 | 131576703 | 22 | 14.75 | 324.5 | 12/30/2019 |
| ES52 | 131576703 | 22 | 14.75 | 324.5 | 12/30/2019 |
| ES53 | 131576703 | 22 | 14.75 | 324.5 | 12/30/2019 |
| ES54 | 131576703 | 56 | 14.75 | 826.0 | 12/30/2019 |
| ES55 | 131576703 | 39 | 14.75 | 575.3 | 12/30/2019 |
| ES56 | 131576771 | 27 | 14.75 | 398.3 | 12/30/2019 |
| ES57 | 131576771 | 70 | 14.75 | 1,032.5 | 12/30/2019 |
| ES58 | 131576771 | 98 | 14.75 | 1,445.5 | 12/30/2019 |
| ES59 | 131576771 | 10 | 14.75 | 147.5 | 12/30/2019 |
| ES60 | 131576802 | 95 | 14.75 | 1,401.3 | 12/30/2019 |
| ES61 | 131576802 | 115 | 14.75 | 1,696.3 | 12/30/2019 |
| ES62 | 131576802 | 25 | 14.75 | 368.8 | 12/31/19 |
| ES63 | 131576797 | 90 | 14.75 | 1,327.5 | 12/31/19 |
| ES64 | 131576797 | 115 | 14.75 | 1,696.3 | 12/31/19 |
| ES65 | 131576773 | 115 | 14.75 | 1,696.3 | 12/31/19 |
| ES66 | 131576773 | 83 | 14.75 | 1,224.3 | 12/31/19 |
| ES67 | 131576712 | 32 | 14.75 | 472.0 | 12/31/19 |
| ES68 | 131576712 | 115 | 14.75 | 1,696.3 | 12/31/19 |
| ES69 | 131576712 | 55 | 14.75 | 811.3 | 12/31/19 |
| ES70 | 131576777 | 61 | 14.75 | 899.8 | 12/31/19 |
| ES71 | 131576777 | 116 | 14.75 | 1,711.0 | 12/31/19 |
| ES72 | 131576777 | 22 | 14.75 | 324.5 | 12/31/19 |
| ES73 | 131576699 | 94 | 14.75 | 1,386.5 | 12/31/19 |
| ES74 | 131576699 | 105 | 14.75 | 1,548.8 | 12/31/19 |
| ES75 | 131576770 | 15 | 14.75 | 221.3 | 12/31/19 |
| ES76 | 131576770 | 119 | 14.75 | 1,755.3 | 12/31/19 |
| ES77 | 131576770 | 16 | 14.75 | 236.0 | 12/31/19 |
| ES78 | 131576749 | 110 | 14.75 | 1,622.5 | 12/31/19 |
| ES79 | 131576749 | 90 | 14.75 | 1,327.5 | 12/31/19 |
| ES80 | 131576749 | 16 | 14.75 | 236.0 | 12/31/19 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 41,182.0 | |

GORDON ENVIRONMENTAL PSC

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 11 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, East Slope, Double Sided | **MONITOR:** | Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| E81 | 131576734 | 115 | 14.75 | 1,696.3 | 12/31/19 |
| E82 | 131576734 | 90 | 14.75 | 1,327.5 | 12/31/19 |
| E83 | 131576761 | 35 | 14.75 | 516.3 | 12/31/19 |
| E84 | 131576761 | 125 | 14.75 | 1,843.8 | 12/31/19 |
| E85 | 131576761 | 40 | 14.75 | 590.0 | 12/31/19 |
| E86 | 131576697 | 88 | 14.75 | 1,298.0 | 12/31/19 |
| E87 | 131576697 | 112 | 14.75 | 1,652.0 | 12/31/19 |
| E88 | 131576735 | 13 | 14.75 | 191.8 | 12/31/19 |
| E89 | 131576735 | 130 | 14.75 | 1,917.5 | 12/31/19 |
| E90 | 131576735 | 57 | 14.75 | 840.8 | 12/31/19 |
| E91 | 131576779 | 75 | 14.75 | 1,106.3 | 12/31/19 |
| E92 | 131576779 | 125 | 14.75 | 1,843.8 | 12/31/19 |
| E93 | 131576752 | 6 | 14.75 | 88.5 | 12/31/19 |
| E94 | 131576752 | 131 | 14.75 | 1,932.3 | 12/31/19 |
| E95 | 131576752 | 63 | 14.75 | 929.3 | 12/31/19 |
| E96 | 131576739 | 70 | 14.75 | 1,032.5 | 12/31/19 |
| E97 | 131576739 | 130 | 14.75 | 1,917.5 | 12/31/19 |
| E98 | 131576740 | 132 | 14.75 | 1,947.0 | 1/2/2020 |
| E99 | 131576740 | 68 | 14.75 | 1,003.0 | 1/4/2020 |
| E100 | 131576779 | 65 | 14.75 | 958.8 | 1/4/2020 |
| E101 | 131576779 | 135 | 14.75 | 1,991.3 | 1/4/2020 |
| E102 | 131576758 | 135 | 14.75 | 1,991.3 | 1/4/2020 |
| E103 | 131576758 | 64 | 14.75 | 944.0 | 1/4/2020 |
| E104 | 131576729 | 75 | 14.75 | 1,106.3 | 1/4/2020 |
| E105 | 131576729 | 125 | 14.75 | 1,843.8 | 1/4/2020 |
| E106 | 131576760 | 10 | 14.75 | 147.5 | 1/4/2020 |
| E107 | 131576760 | 133 | 14.75 | 1,961.8 | 1/4/2020 |
| E108 | 131576760 | 54 | 14.75 | 796.5 | 1/4/2020 |
| E109 | 131576733 | 81 | 14.75 | 1,194.8 | 1/4/2020 |
| E110 | 131576733 | 119 | 14.75 | 1,755.3 | 1/4/2020 |
| E111 | 131576795 | 16 | 14.75 | 236.0 | 1/4/2020 |
| E112 | 131576795 | 135 | 14.75 | 1,991.3 | 1/4/2020 |
| E113 | 131576724 | 135 | 14.75 | 1,991.3 | 1/4/2020 |
| E114 | 131576724 | 64 | 14.75 | 944.0 | 1/4/2020 |
| E115 | 131576778 | 68 | 14.75 | 1,003.0 | 1/4/2020 |
| E116 | 131576778 | 132 | 14.75 | 1,947.0 | 1/4/2020 |
| E117 | 131576737 | 134 | 14.75 | 1,976.5 | 1/4/2020 |
| E118 | 131576743 | 63 | 14.75 | 929.3 | 1/4/2020 |
| E119 | 131576743 | 76 | 14.75 | 1,121.0 | 1/4/2020 |
| E120 | 131576723 | 122 | 14.75 | 1,799.5 | 1/4/2020 |
| | | | **TOTAL LINER PLACED ($FT^2$):** | 52,303.5 | |

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# GEOCOMPOSITE DEPLOYMENT LOG

| | | | |
|---|---|---|---|
| **PROJECT NAME:** | OWL Landfill | **PROJECT NUMBER:** | 1056019 |
| **CLIENT:** | Oilfield Well Logistics | **CONTRACTOR:** | Mustang Extreme |
| **PROJECT LOCATION:** | Lea County, New Mexico | **SHEET NUMBER:** | 12 |
| **DEPLOYMENT LOCATION:** | Cushion Layer, East Slope, Double Sided | **MONITOR:** | Braden Belliveau |

| PANEL NUMBER | ROLL NUMBER | APPROXIMATE LENGTH (FT) | APPROXIMATE WIDTH (FT) | APPROXIMATE AREA ($FT^2$) | DATE INSTALLED |
|---|---|---|---|---|---|
| ES121 | 131576723 | 122 | 14.75 | 1,799.5 | 1/4/2020 |
| ES122 | 131576706 | 23 | 14.75 | 339.3 | 1/4/2020 |
| ES123 | 131576706 | 165 | 8 | 1,320.0 | 1/4/2020 |
| ES124 | 131576706 | 150 | 7 | 1,050.0 | 1/4/2020 |
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# APPENDIX C

## Cell 1A Liner Installation Documentation

C.18. Demtech Tensiometer Calibration Certificate

DEMTECH Services Inc.®

# CALIBRATION CERTIFICATE

| | |
|---|---|
| Tensiometer Model: | Pro-Tester [T-0100/A or T-0100SE/A] |
| Device Calibrated: | S-Type load cell |
| Range: | 0 - 750 lbs. Tension |
| Model No: | M2405-750# |
| Serial No: | **68195** |

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

| | |
|---|---|
| A/D Module Model No: | T-029 |
| A/D Module Serial No: | **3111668195** |
| Channel No: | N/A |

Dead Weight:

| | |
|---|---|
| W1 | 2 |
| W2 | 152 |
| W3 | 302 |

Reference Cell:

| | |
|---|---|
| R1 | 2 |
| R2 | 152 |
| R3 | 302 |

Indicator reading with no load: 0

Offset: **-1.354775** Scale: **3.212405**

| Applied Force lbs. | Cell Response: | Deviation Error: |
|---|---|---|
| 2 | 2 | 0.00 |
| 52 | 52 | 0.00 |
| 102 | 102 | 0.00 |
| 152 | 152 | 0.00 |
| 202 | 202 | 0.00 |
| 252 | 252 | 0.00 |
| 302 | 302 | 0.00 |

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F

Exitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

Calibration Technician: Brandon Ousley

Signature: Brandon Ousley

Date: 07/26/19

# APPENDIX D

## Independent Laboratory FML Destructive Testing Results

D.1. Secondary Liner Destructive Test

Date: 2019-12-07

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52716** |
| Material(s) Tested: | (11) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Brian Anderson
Project Manager
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52716**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-1 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 105 | 114 | 122 | 119 | 117 | **115** |
| Peel Incursion (%) | 40 | 35 | 100 | 90 | 100 | |
| Peel Locus Of Failure Code | AD-BRK | AD-BRK | AD | AD-BRK | AD | |
| Peel NSF Failure Code | FTB | FTB | NON-FTB | FTB | NON-FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 138 | 133 | 132 | 136 | 131 | **134** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 162 | 162 | 162 | 166 | 160 | **162** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-2 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 127 | 138 | 99 | 113 | 133 | **122** |
| Peel Incursion (%) | <5 | <5 | 15 | 30 | <5 | |
| Peel Locus Of Failure Code | SE | SE | AD-BRK | AD-BRK | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 153 | 133 | 134 | 121 | 145 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 170 | 168 | 168 | 168 | 166 | **168** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52716**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-3 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 126 | 106 | 125 | 126 | **121** |
| Peel Incursion (%) | 100 | <5 | 30 | 20 | <5 | |
| Peel Locus Of Failure Code | AD | SE | AD-BRK | AD-BRK | SE | |
| Peel NSF Failure Code | NON-FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 137 | 136 | 137 | 139 | 148 | **139** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 160 | 161 | 158 | 163 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-4 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 142 | 130 | 132 | 143 | 133 | **136** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 113 | 121 | 125 | 126 | 128 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 156 | 156 | 156 | 155 | 154 | **155** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52716**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-5 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 127 | 124 | 118 | 126 | 136 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 122 | 113 | 113 | 117 | 119 | **117** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 155 | 153 | 153 | 154 | 150 | **153** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-6 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 121 | 115 | 118 | 111 | 122 | **117** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 136 | 117 | 122 | 122 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 161 | 161 | 158 | 160 | 158 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52716**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-7 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 124 | 128 | 132 | 129 | 133 | **129** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 124 | 117 | 124 | 111 | 122 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 156 | 159 | 157 | 156 | 155 | **157** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-8 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 132 | 120 | 120 | 139 | 119 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 118 | 125 | 122 | 125 | 125 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 161 | 161 | 159 | 158 | 157 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52716**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-9 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 132 | 126 | 120 | 121 | 124 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 135 | 137 | 129 | 133 | 137 | **134** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 153 | 152 | 152 | 155 | 154 | **153** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-10 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 123 | 118 | 127 | 123 | 123 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 114 | 113 | 117 | 117 | **116** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 155 | 154 | 155 | 159 | 156 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52716**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-11 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 126 | 116 | 117 | 121 | 125 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 115 | 114 | 112 | 115 | **115** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 154 | 154 | 156 | 156 | 156 | **155** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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Date: 2019-12-10

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52762** |
| Material(s) Tested: | (7) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,

Jennifer Tenney
Project Manager
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52762**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-12 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 119 | 115 | 125 | 126 | 126 | **122** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 129 | 115 | 114 | 133 | **122** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 156 | 157 | 156 | 155 | **157** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-13 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 134 | 125 | 130 | 134 | 132 | **131** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 134 | 120 | 116 | 122 | 127 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 158 | 160 | 157 | 157 | 159 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52762**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-14 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 118 | 118 | 118 | 120 | 119 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 115 | 118 | 116 | 121 | **117** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 161 | 161 | 163 | 158 | 159 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-15 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 122 | 120 | 132 | 124 | 120 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 114 | 118 | 118 | 122 | 118 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 161 | 159 | 157 | 157 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52762**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-16 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 129 | 132 | 128 | 127 | 133 | **130** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 116 | 118 | 129 | 117 | 117 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 156 | 158 | 158 | 161 | 157 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-17 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 116 | 118 | 123 | 123 | 122 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 136 | 137 | 139 | 133 | 141 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 157 | 158 | 161 | 159 | 159 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52762**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-18 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 134 | 132 | 124 | 129 | 131 | **130** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 118 | 117 | 113 | 115 | 114 | **115** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 159 | 160 | 158 | 162 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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Date: 2019-12-12

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

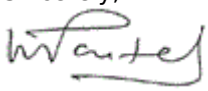
Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52833** |
| Material(s) Tested: | (12) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52833**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-19A \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 130 | 121 | 133 | 137 | 126 | **129** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 135 | 140 | 147 | 140 | 141 | **141** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 170 | 172 | 172 | 172 | 168 | **171** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-20 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 138 | 136 | 132 | 135 | 142 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 144 | 137 | 139 | 143 | 150 | **143** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 165 | 167 | 170 | 168 | 166 | **167** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52833**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-21 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 139 | 158 | 150 | 147 | 142 | **147** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 153 | 149 | 146 | 156 | 146 | **150** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 174 | 175 | 175 | 176 | 172 | **174** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-22 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 137 | 130 | 130 | 127 | 128 | **130** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 150 | 143 | 146 | 138 | 136 | **143** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 166 | 167 | 170 | 169 | 166 | **168** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52833**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-23 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 134 | 139 | 126 | 133 | 129 | **132** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 148 | 132 | 145 | 137 | 134 | **139** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 166 | 167 | 170 | 168 | 165 | **167** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-24 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 154 | 139 | 144 | 139 | **139** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 150 | 137 | 146 | 147 | 142 | **144** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 171 | 172 | 172 | 172 | 167 | **171** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52833**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-25 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 129 | 131 | 123 | 124 | 123 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 121 | 121 | 116 | 117 | 114 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 159 | 162 | 161 | 158 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-26 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 119 | 121 | 120 | 117 | 117 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 131 | 117 | 121 | 115 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 158 | 159 | 161 | 158 | 157 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52833**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-27 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 131 | 124 | 132 | 124 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 132 | 137 | 120 | 132 | 132 | **131** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 158 | 158 | 159 | 160 | 156 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-28 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 117 | 126 | 120 | 120 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 118 | 121 | 115 | 124 | 133 | **122** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 156 | 159 | 158 | 157 | 157 | **157** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52833**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-29 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 121 | 119 | 120 | 116 | 121 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 110 | 132 | 108 | 127 | 113 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 156 | 158 | 158 | 157 | 155 | **157** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-30 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 114 | 123 | 115 | 129 | 118 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 110 | 110 | 129 | 136 | 109 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 160 | 159 | 159 | 162 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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Date: 2019-12-17

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

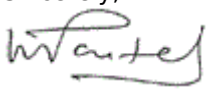
Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52926** |
| Material(s) Tested: | (7) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52926**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-31 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 111 | 111 | 110 | 109 | 118 | **112** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 124 | 114 | 138 | 112 | 121 | **122** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 157 | 157 | 155 | 155 | 155 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-32 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 118 | 117 | 117 | 120 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 121 | 131 | 123 | 114 | 116 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 155 | 155 | 153 | 152 | 152 | **153** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52926**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-33 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 121 | 129 | 122 | 122 | 122 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 118 | 120 | 118 | 117 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 160 | 157 | 156 | 156 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-34 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 129 | 97 | 121 | 123 | 122 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 126 | 128 | 130 | 130 | 128 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 157 | 160 | 161 | 159 | 159 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52926**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-35 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 140 | 143 | 141 | 127 | 128 | **136** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 145 | 143 | 133 | 137 | 126 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 162 | 165 | 168 | 163 | **164** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-36 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 135 | 138 | 134 | 136 | 134 | **135** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 144 | 141 | 137 | 138 | 147 | **141** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 166 | 168 | 170 | 168 | 168 | **168** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52926**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-37 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 135 | 109 | 125 | 143 | **126** |
| Peel Incursion (%) | 20 | <5 | 30 | <5 | 40 | |
| Peel Locus Of Failure Code | AD-BRK | SE | AD-BRK | SE | AD-BRK | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 140 | 155 | 147 | 153 | 138 | **147** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 170 | 170 | 170 | 170 | 170 | **170** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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Date: 2019-12-18

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

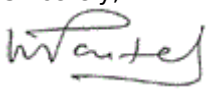
Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52969** |
| Material(s) Tested: | (7) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52969**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-38 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 123 | 119 | 122 | 126 | 126 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 132 | 136 | 135 | 135 | 142 | **136** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 165 | 165 | 163 | 162 | 163 | **164** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-39 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 139 | 134 | 148 | 140 | **137** |
| Peel Incursion (%) | 40 | <5 | <5 | 30 | 90 | |
| Peel Locus Of Failure Code | AD-BRK | SE | SE | AD-BRK | AD-BRK | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 137 | 147 | 141 | 142 | 146 | **143** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 175 | 178 | 175 | 176 | 179 | **177** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52969**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-40 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 142 | 138 | 141 | 144 | 144 | **142** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 146 | 146 | 153 | 148 | 147 | **148** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 179 | 163 | 164 | 176 | 177 | **172** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-41 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 136 | 119 | 120 | 119 | 124 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 122 | 129 | 130 | 125 | 121 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 158 | 158 | 155 | 155 | 155 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52969**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-42 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 137 | 122 | 145 | 134 | 136 | **135** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 135 | 126 | 132 | 137 | 125 | **131** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 160 | 159 | 157 | 156 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: SDT-43 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 117 | 118 | 117 | 120 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 135 | 109 | 110 | 111 | 114 | **116** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 158 | 157 | 156 | 154 | 154 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52969**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: SDT-44 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 123 | 132 | 130 | 126 | 126 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | | | | | | **0** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 155 | 156 | 154 | 154 | 152 | **154** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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# APPENDIX D

## Independent Laboratory FML Destructive Testing Results

D.2. Primary Liner Destructive Test

Date: 2019-12-12

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

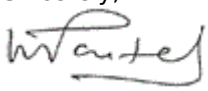
Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52832** |
| Material(s) Tested: | (3) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52832**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-1 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 115 | 115 | 115 | 120 | 113 | **116** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 115 | 115 | 116 | 115 | 120 | **116** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 157 | 157 | 158 | 159 | 156 | **157** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-2 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 119 | 129 | 125 | 133 | 131 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 135 | 125 | 126 | 130 | 119 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 159 | 160 | 160 | 157 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52832**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-3 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 129 | 133 | 132 | 135 | 138 | **133** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 116 | 118 | 116 | 124 | 118 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 161 | 159 | 161 | 158 | 158 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

Date: 2019-12-18

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **52968** |
| Material(s) Tested: | (15) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Mansukh Patel
Sr. Laboratory Coordinator
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-4 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 142 | 127 | 123 | 127 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 121 | 123 | 118 | 118 | 119 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 159 | 162 | 161 | 163 | **161** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-5 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 122 | 119 | 118 | 114 | 120 | **119** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 118 | 120 | 123 | 124 | 134 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 167 | 163 | 162 | 161 | 160 | **163** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-6 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 112 | 122 | 113 | 130 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 112 | 121 | 112 | 116 | 116 | **115** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 164 | 158 | 160 | 160 | 158 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-7 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 126 | 119 | 128 | 117 | 125 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 144 | 119 | 115 | 120 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 158 | 158 | 155 | 158 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-8 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 119 | 132 | 123 | 128 | 113 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 124 | 135 | 119 | 119 | 118 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 158 | 155 | 158 | 157 | 154 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-9 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 138 | 123 | 124 | 124 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 133 | 125 | 117 | 119 | 121 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 160 | 158 | 157 | 156 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-10 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 116 | 101 | 118 | 122 | 107 | **113** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 132 | 121 | 129 | 123 | 131 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 161 | 158 | 157 | 158 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-11 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 124 | 126 | 120 | 125 | 127 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 120 | 118 | 114 | 139 | 133 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 161 | 160 | 158 | 158 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-12 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 123 | 114 | 136 | 130 | 127 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 121 | 114 | 126 | 115 | 133 | **122** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 156 | 155 | 159 | 154 | 155 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-13 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 132 | 119 | 117 | 122 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 128 | 125 | 122 | 131 | 121 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 157 | 159 | 157 | 155 | **158** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-14 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 118 | 112 | 113 | 115 | 116 | **115** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 124 | 127 | 122 | 129 | 121 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 164 | 163 | 161 | 160 | 160 | **162** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-15 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 123 | 115 | 112 | 110 | 117 | **115** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 119 | 120 | 123 | 125 | 127 | **123** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 159 | 158 | 159 | 158 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-16 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 133 | 131 | 129 | 135 | 139 | **133** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 121 | 120 | 120 | 120 | 126 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 176 | 174 | 171 | 171 | 171 | **173** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-17 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 153 | 142 | 132 | 153 | 137 | **143** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 134 | 122 | 130 | 128 | 139 | **131** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 176 | 175 | 175 | 172 | 173 | **174** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 52968**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-18 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 117 | 144 | 121 | 130 | 126 | **128** |
| Peel Incursion (%) | 40 | 20 | 20 | 20 | <5 | |
| Peel Locus Of Failure Code | AD-BRK | AD-BRK | AD-BRK | AD-BRK | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 146 | 149 | 148 | 153 | 138 | **147** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 168 | 171 | 164 | 163 | 165 | **166** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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Date: 2019-12-21

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

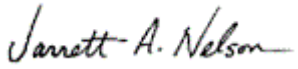
Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **53057** |
| Material(s) Tested: | (12) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Jarret Nelson
Project Manager
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53057**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-19 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 118 | 133 | 127 | 133 | 126 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 129 | 127 | 121 | 128 | 123 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 164 | 164 | 164 | 160 | **163** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-20 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 124 | 135 | 130 | 121 | 130 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 129 | 128 | 142 | 129 | 140 | **134** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 164 | 165 | 159 | 161 | 157 | **161** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53057**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-21 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 134 | 122 | 124 | 128 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 141 | 130 | 122 | 123 | 129 | **129** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 166 | 160 | 162 | 163 | 165 | **163** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-22 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 123 | 123 | 124 | 119 | **122** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 121 | 125 | 121 | 123 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 161 | 163 | 158 | 160 | **161** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53057**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-23 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 123 | 127 | 127 | 119 | 130 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 119 | 121 | 138 | 133 | 122 | **127** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 162 | 160 | 161 | 164 | **161** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-24 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 140 | 125 | 144 | 142 | 142 | **139** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 122 | 121 | 132 | 135 | 122 | **126** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 162 | 161 | 157 | 156 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53057**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-25 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 117 | 124 | 140 | 131 | 127 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 119 | 119 | 123 | 120 | 123 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 158 | 156 | 155 | 154 | **156** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-26 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 125 | 131 | 122 | 125 | **125** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 124 | 117 | 119 | 129 | 115 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 160 | 159 | 157 | 156 | 154 | **157** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53057**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-27 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 122 | 120 | 130 | 121 | 108 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 117 | 118 | 117 | 134 | **121** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 162 | 157 | 162 | 159 | 155 | **159** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-28 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 122 | 123 | 125 | 125 | 123 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 117 | 115 | 121 | 116 | 117 | **117** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 164 | 162 | 161 | 159 | 157 | **161** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53057**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-29 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 117 | 119 | 116 | 118 | 118 | **118** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 118 | 140 | 121 | 120 | 122 | **124** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 168 | 164 | 162 | 162 | 167 | **165** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-30 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 125 | 133 | 137 | 123 | 120 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 126 | 129 | 135 | 127 | 124 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 168 | 169 | 163 | 166 | 162 | **166** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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Date: 2019-12-24

**Mail To:**
**Carl King**
**Parkhill, Smith, Cooper**
**333 Rio Rancho Blvd. NE Ste #400**
**Rio Rancho , NM , 87124**

**Bill To:**

**Parkhill, Smith, Cooper**

e-mail:
cking@team-psc.com dgray@team-psc.com

Dear Mr. King,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

| | |
|---|---|
| **Project:** | **OWL** |
| TRI Job Reference Number: | **53085** |
| Material(s) Tested: | (13) Heat Fusion Weld Seam(s) |
| Test(s) Requested: | SAME DAY Peel and Shear<br>(ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.) |

| Codes: | |
|---|---|
| AD | Adhesion Failure (100% Peel) |
| BRK | Break in sheeting away from Seam edge. |
| SE | Break in sheeting at edge of seam. |
| AD-BRK | Break in sheeting after some adhesion failure - partial peel. |
| SIP | Separation in the plane of the sheet (leaving the bond intact). |
| FTB | Film tearing bond (all non "AD" failures). |
| NON-FTB | 100% peel. |

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,



Patricia Zabaleta
Project Manager
Geosynthetic Services Division
http://www.geosyntheticstestinc.com

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-31 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 131 | 137 | 132 | 126 | 124 | **130** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 134 | 143 | 135 | 152 | 155 | **144** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 163 | 164 | 165 | 163 | 167 | **164** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-32 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 146 | 136 | 141 | 135 | 143 | **140** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 140 | 141 | 141 | 140 | 138 | **140** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 174 | 168 | 170 | 171 | 171 | **171** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-33 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 130 | 129 | 129 | 124 | 127 | **128** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 136 | 126 | 129 | 129 | 132 | **130** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 172 | 170 | 171 | 168 | 173 | **171** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-34 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 133 | 130 | 128 | 127 | 127 | **129** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 129 | 131 | 137 | 131 | 146 | **135** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 169 | 166 | 167 | 166 | 167 | **167** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-35 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 138 | 131 | 146 | 132 | 137 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 128 | 151 | 125 | 148 | 122 | **135** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 168 | 171 | 173 | 168 | 169 | **170** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-36 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 139 | 134 | 137 | 132 | 142 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 151 | 147 | 151 | 142 | 144 | **147** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 172 | 178 | 178 | 175 | 173 | **175** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-37 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 139 | 149 | 131 | 139 | 133 | **138** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 132 | 137 | 136 | 130 | 131 | **133** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 168 | 169 | 173 | 170 | 168 | **170** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-39 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 131 | 132 | 125 | 125 | 132 | **129** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 143 | 146 | 142 | 138 | 145 | **143** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 175 | 171 | 171 | 173 | 169 | **172** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
## TRI Client: Parkhill, Smith, Cooper
## Project: OWL

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-40 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 120 | 134 | 134 | 128 | 127 | **129** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 127 | 134 | 132 | 132 | 132 | **131** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 168 | 166 | 168 | 165 | 164 | **166** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-41 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 122 | 137 | 144 | 140 | 141 | **137** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 125 | 111 | 123 | 115 | 124 | **120** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 169 | 169 | 170 | 173 | 171 | **170** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

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## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-42 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 151 | 153 | 155 | 153 | 144 | **151** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 125 | 149 | 132 | 151 | 133 | **138** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 159 | 158 | 162 | 161 | 160 | **160** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |
| **Sample ID: PDT-43 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 139 | 142 | 142 | 137 | 136 | **139** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 157 | 161 | 140 | 140 | 136 | **147** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 172 | 172 | 173 | 174 | 172 | **173** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

## DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
**TRI Client: Parkhill, Smith, Cooper**
**Project: OWL**

**Material: 60 mil. HDPE**
**SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)**
**TRI Log#: 53085**

| | TEST REPLICATE NUMBER | | | | | |
|---|---|---|---|---|---|---|
| PARAMETER | 1 | 2 | 3 | 4 | 5 | MEAN |
| **Sample ID: PDT-44 \| Weld: Heat Fusion** | | | | | | |
| **Side: A** | | | | | | **Peel A** |
| Peel Strength (ppi) | 128 | 128 | 128 | 135 | 131 | **130** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Side: B** | | | | | | **Peel B** |
| Peel Strength (ppi) | 142 | 140 | 140 | 140 | 140 | **140** |
| Peel Incursion (%) | <5 | <5 | <5 | <5 | <5 | |
| Peel Locus Of Failure Code | SE | SE | SE | SE | SE | |
| Peel NSF Failure Code | FTB | FTB | FTB | FTB | FTB | |
| **Shear** | | | | | | **Shear** |
| Shear Strength (ppi) | 171 | 168 | 170 | 175 | 175 | **172** |
| Shear Elongation @ Break (%) | >50 | >50 | >50 | >50 | >50 | |

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

# APPENDIX E

## Leak Detection System Certifications

E.1. Leachate Pipe and Riser Pipe Parts Certification

+GF+

Print Form

Georg Fischer Central Plastics, LLC
4949 Joseph Hardin Drive
Dallas, TX 75236
972-641-2080
800-449-6927

# Material Certification

**Customer:** Envirocon / 600777

**Customer PO / SO:** 18306 / 258000986

**Ship Date:** 11/21/19

**Project Name:** Delivery # 194412864

**Product:** 360030589 - HDPE PIPE,6,IPS,DR13.5,BLACK,NONE,IN,ASTM F714,ASTM D3035,AWWA C906,NSF-61,40

**Quantity:** approx 880ft

**This is to certify that the product described above and shipped on the above order has been sampled and tested in accordance with the applicable requirements of the specification(s) indicated below:**

( ✓ ) ASTM D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
- ( ) Cell Classification 345464C (Gray, High Density PE3608) Country Of Origin: USA
- ( ) Cell Classification 345464C (Black, High Density PE3608) Country Of Origin: USA
- ( ✓ ) Cell Classification 445574C (Black, High Density PE4710) Country Of Origin: USA

( ✓ ) ASTM F714 Standard Specification For 4" to 63" OD Controlled Polyethylene Pipe
( ) ASTM D2513 - Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings
( ✓ ) ASTM D3261 - Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
( ✓ ) ASTM F2206 - Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
( ) ASTM D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
( ✓ ) AWWA C901/C906-99 – Polyethylene (PE) Pressure Pipe and Fittings, sizes ½" through 63", for Water Distribution
( ✓ ) NSF-61 - Drinking Water System Components - Health Effects
( ) CSA B137.4 - Polyethylene Piping Systems for Gas Services
( ) IAPMO - Listed by IAPMO as meeting the requirements of the Uniform Plumbing Code™
( ) FM Standard 1613 (Factory Mutual Approved)
( ) ASTM A536 - Standard Specification for Ductile Iron Material (MJ Glands Only) – Country Of Origin: USA
( ) ASTM A536 - Standard Specification for Ductile Iron Material (DF Bolt Rings Only) – Country Of Origin: China
( ) ASTM A351-CF8M - Standard Specification for 316 Stainless Steel (DF Bolt Rings Only) – Country Of Origin: China
( ) AWWA C207 - CL 150 / B, D & E (DF Bolt Rings Only)
( ) ASME / ANSI B16.5 CL 150, B16.47 Ser. A - CL 150, B16.1- CL 125 (DF Bolt Rings Only)
( ) Other:

Yee (Sam) Ho
Engineering Manager
Georg Fischer Central Plastics LLC
Pipe & Fabrication

Date: 12/9/19

# DESIGN-FLOW® HDPE Pipe - General Information

## Weatherability

Georg Fischer Central Plastics (GFCP) black polyethylene pipe, PE3408/PE3608/PE4710, is protected against degradation by a combination of stabilizers and carbon black. The pipe formulation contains in excess of 2% carbon black imparting the black color as well as effective protection from ultraviolet radiation. Carbon black is the single most effective additive to enhance weatherability in Independent Pipe Product's polyethylene pipe. Weatherability studies indicate that carbon black imparts UV stability that makes our polyethylene pipe acceptable for normal outside storage for a period of years without a detrimental loss of physical properties. Good inventory practices should be maintained to insure optimum performance by installing the pipe in two years or less. If pipe must be stored for more than two years, it should be stored under cover, out of direct sunlight.

## Joining

Industry standards recommend the butt heat fusion method for joining. The butt heat fusion joints are as strong as the pipe wall itself. Quick bursts tests have shown ductile rupture of the pipe wall before rupture of the fusion joint.

## Applications

GFCP is well qualified to meet the demanding needs of the municipal water and wastewater markets, energy markets in applications such as oil and gas gathering systems, methane recovery from coal seams and landfills, and water supply lines for oil recovery systems.

Pipe marked with NSF-61 meets the rigorous standards of third party testing performed by the National Sanitation Foundation. This pipe is manufactured to ASTM D-3035 and F-714.

## Improved Material Designations

The recent updates and additions to ASTM D3350 caused the EHMW-HDPE resins designated as PE3408 in 2006, to become PE3608 in 2007. The HDPE material did not change, but the ASTM D3350 cell classification that described the material did change, necessitating the upgrade to PE3608. Those same changes encompassed the addition of PE4710 High Performance Polyethylene (HPPE) into the arsenal of pipe grade resins. A PE4710 HPPE piping system can result in a 15% savings when compared to current costs of PE3408 piping systems. By virtue of its higher pressure rating enabling the use of the next lower DR, wall thickness becomes less, ID increases and the weight per foot of pipe is reduced.

## PE3608 (prev. PE3408) Material Designation

Materials designated as PE3608 have a hydrostatic design basis of 1600 psi for water at 73º F. After applying the 0.5 Design Factor, the design working stress for 73º F is 800 psi.

## PE4710 (prev. PE3408) Material Designation

Materials designated as PE4710 have a hydrostatic design basis of 1600 psi for water at 73º F. After applying the 0.63 Design Factor, the design working stress for 73º F is 1000 psi. PE4710 has higher performance as described in PPI's TN41.

## Pressure Ratings

The longevity of polyethylene pipe is calculated between 50 years to 100 years when properly engineered and installed for the conditions and application. Pressure ratings for polyethylene pipe are determined by use of the ISO equation:

$$P = [(2xHDB)/(SDR-1)] \times DF \times F_T$$

**Where** P = Working pressure of the pipeline
HDB = Hydrostatic Design Basis of the material
1600 psi for PE 3408, PE3608 or PE4710
SDR = Standard Dimension Ratio (OD/min wall)
DF = Design Factor
$F_T$ = Elevated temperature service factor

A design factor of 0.50 is recommended for water or dry natural gas in areas not affected by Federal regulations. The design factor dry natural gas in areas under the U.S. Department of Transportation (DOT) jurisdiction, according to the Code of Federal Regulations, Title 49, Part 192.123, is 0.32 with a maximum allowable operating pressure of 100 psi. The Design Factor for crude oil or wet natural gas is 0.25.

## Elevated Temperature Service Factor ($F_T$)

| Maximum Continuously Applied Service Temperature, ºF (ºC) | Temperature Compensation Factor, FT, for PE3408 / PE3608 / PE4710 |
|---|---|
| < 80 (26) | 1.00 |
| < 90 (32) | 0.90 |
| < 100 (38) | 0.78 |
| < 110 (43) | 0.75 |
| < 120 (49) | 0.63 |
| < 130 (54) | 0.60 |
| < 140 (60) | 0.50 |

## Applicable / Available Standards

ASTM: F714, F2620, D3035, D3350, D2513
NSF 61, AWWA C901/C906, FM 1613

+GF+ GEORG FISCHER PIPING SYSTEMS

# IPS HDPE PIPE PE4710

DESIGN-FLOW®

## Iron Pipe Size High Density Polyethylene Pipe

**ASTM F 714 . ASTM D 3035 . AWWA C901/C906 . NSF - 61**

| Size | | DR 32.5 CLASS 65 WPR @ 65 psi | | | DR 26 CLASS 80 WPR @ 80 psi | | | DR 21 CLASS 100 WPR @ 100 psi | | | DR 19 CLASS 110 WPR @ 110 psi | | | DR 17 CLASS 130 WPR @ 130 psi | | | DR 13.5 CLASS 160 WPR @ 160 psi | | | DR 11 CLASS 200 WPR @ 200 psi | | | DR 9 CLASS 250 WPR @ 250 psi | | | DR 7 CLASS 335 WPR @ 335 psi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IPS Pipe Size | Pipe OD (in) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) |
| 2" | 2.375 | - | - | - | - | - | - | - | - | - | - | - | - | 2.078 | 0.140 | 0.43 | 2.002 | 0.176 | 0.53 | 1.917 | 0.216 | 0.64 | 1.815 | 0.264 | 0.77 | 1.656 | 0.339 | 0.95 |
| 3" | 3.500 | - | - | - | - | - | - | - | - | - | - | - | - | 3.063 | 0.206 | 0.94 | 2.951 | 0.259 | 1.16 | 2.826 | 0.318 | 1.39 | 2.675 | 0.389 | 1.66 | 2.440 | 0.500 | 2.06 |
| 4" | 4.500 | - | - | - | - | - | - | 4.046 | 0.214 | 1.27 | - | - | - | 3.938 | 0.265 | 1.55 | 3.794 | 0.333 | 1.92 | 3.633 | 0.409 | 2.31 | 3.440 | 0.500 | 2.75 | 3.137 | 0.643 | 3.40 |
| 5" | 5.563 | - | - | - | 5.109 | 0.214 | 1.58 | 5.001 | 0.265 | 1.94 | 4.942 | 0.293 | 2.13 | 4.870 | 0.327 | 2.37 | 4.690 | 0.412 | 2.93 | 4.490 | 0.506 | 3.52 | 4.253 | 0.618 | 4.20 | 3.877 | 0.795 | 5.20 |
| 6" | 6.625 | - | - | - | 6.084 | 0.255 | 2.24 | 5.957 | 0.315 | 2.75 | 5.886 | 0.349 | 3.02 | 5.798 | 0.390 | 3.36 | 5.584 | 0.491 | 4.15 | 5.349 | 0.602 | 5.00 | 5.065 | 0.736 | 5.96 | 4.619 | 0.946 | 7.37 |
| 8" | 8.625 | - | - | - | 7.921 | 0.332 | 3.80 | 7.754 | 0.411 | 4.66 | 7.663 | 0.454 | 5.12 | 7.550 | 0.507 | 5.69 | 7.270 | 0.639 | 7.04 | 6.963 | 0.784 | 8.47 | 6.594 | 0.958 | 10.11 | 6.013 | 1.232 | 12.50 |
| 10" | 10.750 | - | - | - | 9.874 | 0.413 | 5.91 | 9.665 | 0.512 | 7.24 | 9.551 | 0.566 | 7.96 | 9.410 | 0.632 | 8.83 | 9.062 | 0.796 | 10.93 | 8.679 | 0.977 | 13.16 | 8.219 | 1.194 | 15.70 | 7.494 | 1.536 | 19.42 |
| 12" | 12.750 | - | - | - | 11.711 | 0.490 | 8.31 | 11.463 | 0.607 | 10.19 | 11.327 | 0.671 | 11.20 | 11.160 | 0.750 | 12.43 | 10.749 | 0.944 | 15.38 | 10.293 | 1.159 | 18.51 | 9.746 | 1.417 | 22.08 | 8.889 | 1.821 | 27.31 |
| 14" | 14.000 | - | - | - | 12.859 | 0.538 | 10.02 | 12.586 | 0.667 | 12.28 | 12.438 | 0.737 | 13.50 | 12.253 | 0.824 | 14.98 | 11.802 | 1.037 | 18.54 | 11.301 | 1.273 | 22.32 | 10.701 | 1.556 | 26.63 | 9.760 | 2.000 | 32.93 |
| 16" | 16.000 | - | - | - | 14.696 | 0.615 | 13.09 | 14.385 | 0.762 | 16.04 | 14.215 | 0.842 | 17.63 | 14.005 | 0.941 | 19.57 | 13.488 | 1.185 | 24.22 | 12.915 | 1.455 | 29.15 | 12.231 | 1.778 | 34.78 | 11.154 | 2.286 | 43.01 |
| 18" | 18.000 | - | - | - | 16.533 | 0.692 | 16.57 | 16.183 | 0.857 | 20.30 | 15.992 | 0.947 | 22.32 | 15.755 | 1.059 | 24.77 | 15.174 | 1.333 | 30.65 | 14.532 | 1.636 | 36.89 | 13.760 | 2.000 | 44.02 | 12.549 | 2.571 | 54.43 |
| 20" | 20.000 | 18.695 | 0.615 | 16.50 | 18.370 | 0.769 | 20.45 | 17.982 | 0.952 | 25.07 | 17.768 | 1.053 | 27.55 | 17.507 | 1.176 | 30.58 | 16.860 | 1.481 | 37.84 | 16.146 | 1.818 | 45.54 | 15.289 | 2.222 | 54.34 | 13.943 | 2.857 | 67.20 |
| 22" | 22.000 | 20.565 | 0.677 | 19.97 | 20.206 | 0.846 | 24.75 | 19.778 | 1.048 | 30.33 | 19.545 | 1.158 | 33.34 | 19.257 | 1.294 | 37.00 | 18.544 | 1.630 | 45.79 | 17.760 | 2.000 | 55.10 | 16.819 | 2.444 | 65.75 | 15.337 | 3.143 | 81.32 |
| 24" | 24.000 | 22.434 | 0.738 | 23.76 | 22.043 | 0.923 | 29.45 | 21.577 | 1.143 | 36.10 | 21.322 | 1.263 | 39.67 | 21.007 | 1.412 | 44.03 | 20.231 | 1.778 | 54.49 | 19.374 | 2.182 | 65.58 | 18.346 | 2.667 | 78.25 | 16.731 | 3.429 | 96.77 |
| 26" | 26.000 | 24.304 | 0.800 | 27.89 | 23.880 | 1.000 | 34.57 | 23.375 | 1.238 | 42.36 | 23.099 | 1.368 | 46.56 | 22.758 | 1.529 | 51.67 | 21.917 | 1.926 | 63.95 | 20.989 | 2.364 | 76.96 | 19.876 | 2.889 | 91.84 | - | - | - |
| 28" | 28.000 | 26.174 | 0.862 | 32.34 | 25.717 | 1.077 | 40.09 | 25.173 | 1.333 | 49.13 | 24.876 | 1.474 | 54.00 | 24.508 | 1.647 | 59.93 | 23.603 | 2.074 | 74.17 | 22.604 | 2.545 | 89.26 | 21.404 | 3.111 | 106.51 | - | - | - |
| 30" | 30.000 | 28.043 | 0.923 | 37.13 | 27.554 | 1.154 | 46.02 | 26.971 | 1.429 | 56.40 | 26.653 | 1.579 | 61.99 | 26.259 | 1.765 | 68.80 | 25.289 | 2.222 | 85.14 | 24.218 | 2.727 | 102.47 | 22.933 | 3.333 | 122.27 | - | - | - |
| 32" | 32.000 | 29.913 | 0.985 | 42.24 | 29.391 | 1.231 | 52.36 | 28.770 | 1.524 | 64.17 | 28.429 | 1.684 | 70.53 | 28.009 | 1.882 | 78.28 | 26.975 | 2.370 | 96.87 | 25.833 | 2.909 | 116.58 | - | - | - | - | - | - |
| 36" | 36.000 | 33.652 | 1.108 | 53.46 | 33.065 | 1.385 | 66.27 | 32.366 | 1.714 | 81.21 | 31.983 | 1.895 | 89.26 | 31.511 | 2.118 | 99.07 | 30.347 | 2.667 | 122.60 | 29.062 | 3.273 | 147.55 | - | - | - | - | - | - |
| 42" | 42.000 | 39.260 | 1.292 | 72.77 | 38.575 | 1.615 | 90.20 | 37.760 | 2.000 | 110.54 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 48" | 48.000 | 44.869 | 1.477 | 95.05 | 44.086 | 1.846 | 117.81 | 43.154 | 2.286 | 144.38 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 54" | 54.000 | 50.478 | 1.662 | 120.29 | 49.597 | 2.077 | 149.10 | 48.549 | 2.571 | 182.73 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 63" | 63.000 | 58.890 | 1.938 | 163.73 | 57.863 | 2.423 | 202.94 | 56.640 | 3.000 | 248.72 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 65" | 65.000 | 60.760 | 2.000 | 174.29 | 59.700 | 2.500 | 216.03 | 58.438 | 3.095 | 264.76 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Pressure Ratings are calculated using 0.63 design factor for HDS at 73°F as listed in PPI TR-4 for PE4710 materials. Temperature, chemical, and environmental use considerations may require use of additional design factors. Pipe weights are calculated in accordance with PPI TR-7. Average inside diameter is calculated with nominal OD and minimum wall thickness plus 6%. Actual ID's will vary and are controlled by the dimensions and tolerances listed in the applicable pipe specifications.

Per AWWA C906, the working pressure rating equals the pressure class, with an allowance included in the WPR for pressure surge. The pressure and surge design basis for polyethylene pipe is different from the PVC and DI pipe design basis. For DR's not listed please contact your customer service representative.

$$DR = \frac{\text{Pipe OD (inches)}}{\text{Minimum Wall Thickness (inches)}}$$

The Long-Term Hydrostatic Strength of PE4710 Polyethylene Pipe is 1600 psi at 73.4 F. All pipe sizes with the same DR and Long Term Hydrostatic Strength will have equal operating pressure capability.

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# DIPS HDPE PIPE PE4710 DESIGN-FLOW®

## Ductile Iron Pipe Size High Density Polyethylene Pipe

**ASTM F 714 . ASTM D 3035 . AWWA C901/C906 . NSF - 61**

| Size | | DR 32.5 CLASS 65 WPR @ 65 psi | | | DR 26 CLASS 80 WPR @ 80 psi | | | DR 21 CLASS 100 WPR @ 100 psi | | | DR 17 CLASS 130 WPR @ 130 psi | | | DR 13.5 CLASS 160 WPR @ 160 psi | | | DR 11 CLASS 200 WPR @ 200 psi | | | DR 9 CLASS 250 WPR @ 250 psi | | | DR 7 CLASS 335 WPR @ 335 psi | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIPS Pipe Size | Pipe OD (in) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) | Avg ID (in) | Min Wall (in) | Weight (lbs/ft) |
| 4" | 4.800 | 4.487 | 0.148 | 0.95 | 4.408 | 0.185 | 1.18 | 4.315 | 0.229 | 1.44 | 4.202 | 0.282 | 1.76 | 4.045 | 0.356 | 2.18 | 3.876 | 0.436 | 2.62 | 3.670 | 0.533 | 3.13 | 3.346 | 0.686 | 3.87 |
| 6" | 6.900 | 6.450 | 0.212 | 1.96 | 6.338 | 0.265 | 2.43 | 6.203 | 0.329 | 2.98 | 6.039 | 0.406 | 3.64 | 5.817 | 0.511 | 4.50 | 5.571 | 0.627 | 5.42 | 5.274 | 0.767 | 6.47 | 4.810 | 0.986 | 8.00 |
| 8" | 9.050 | 8.460 | 0.278 | 3.38 | 8.312 | 0.348 | 4.19 | 8.136 | 0.431 | 5.13 | 7.922 | 0.532 | 6.26 | 7.630 | 0.670 | 7.75 | 7.305 | 0.823 | 9.32 | 6.917 | 1.006 | 11.13 | 6.309 | 1.293 | 13.76 |
| 10" | 11.100 | 10.376 | 0.342 | 5.08 | 10.195 | 0.427 | 6.30 | 9.979 | 0.529 | 7.72 | 9.716 | 0.653 | 9.42 | 9.357 | 0.822 | 11.66 | 8.961 | 1.009 | 14.03 | 8.486 | 1.233 | 16.74 | 7.738 | 1.586 | 20.70 |
| 12" | 13.200 | 12.339 | 0.406 | 7.19 | 12.123 | 0.508 | 8.91 | 11.867 | 0.629 | 10.92 | 11.555 | 0.776 | 13.32 | 11.127 | 0.978 | 16.48 | 10.656 | 1.200 | 19.84 | 10.090 | 1.467 | 23.67 | 9.202 | 1.886 | 29.27 |
| 14" | 15.300 | 14.302 | 0.471 | 9.66 | 14.053 | 0.588 | 11.97 | 13.755 | 0.729 | 14.67 | 13.392 | 0.900 | 17.89 | 12.898 | 1.133 | 22.15 | 12.351 | 1.391 | 26.65 | 11.696 | 1.700 | 31.80 | 10.666 | 2.186 | 39.33 |
| 16" | 17.400 | 16.265 | 0.535 | 12.49 | 15.982 | 0.669 | 15.48 | 15.643 | 0.829 | 18.97 | 15.229 | 1.024 | 23.14 | 14.667 | 1.289 | 28.64 | 14.046 | 1.582 | 34.47 | 13.302 | 1.933 | 41.13 | 12.130 | 2.486 | 50.87 |
| 18" | 19.500 | 18.228 | 0.600 | 15.69 | 17.910 | 0.750 | 19.44 | 17.531 | 0.929 | 23.83 | 17.068 | 1.147 | 29.07 | 16.439 | 1.444 | 35.97 | 15.741 | 1.773 | 43.29 | 14.906 | 2.167 | 51.66 | 13.594 | 2.786 | 63.89 |
| 20" | 21.600 | 20.191 | 0.665 | 19.25 | 19.838 | 0.831 | 23.86 | 19.419 | 1.029 | 29.24 | 18.905 | 1.271 | 35.66 | 18.208 | 1.600 | 44.14 | 17.436 | 1.964 | 53.12 | 16.512 | 2.400 | 63.38 | 15.058 | 3.086 | 78.39 |
| 24" | 25.800 | 24.117 | 0.794 | 27.46 | 23.697 | 0.992 | 34.04 | 23.195 | 1.229 | 41.71 | 22.582 | 1.518 | 50.88 | 21.749 | 1.911 | 62.97 | 20.829 | 2.345 | 75.78 | 19.722 | 2.867 | 90.43 | 17.986 | 3.686 | 111.83 |
| 30" | 32.000 | 29.913 | 0.985 | 42.24 | 29.391 | 1.231 | 52.36 | 28.770 | 1.524 | 64.17 | 28.009 | 1.882 | 78.28 | 26.975 | 2.370 | 96.87 | 25.833 | 2.909 | 116.58 | - | - | - | - | - | - |
| 36" | 38.300 | 35.802 | 1.178 | 60.51 | 35.177 | 1.473 | 75.00 | 34.434 | 1.824 | 91.92 | 33.524 | 2.253 | 112.13 | 32.285 | 2.837 | 138.77 | - | - | - | - | - | - | - | - | - |
| 42" | 45.500 | 41.597 | 1.369 | 81.69 | 40.872 | 1.712 | 41.077 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 48" | 50.800 | 47.486 | 1.563 | 106.46 | 46.658 | 1.954 | 46.892 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Pressure Ratings are calculated using 0.63 design factor for HDS at 73°F as listed in PPI TR-4 for PE4710 materials. Temperature, chemical, and environmental use considerations may require use of additional design factors. Pipe weights are calculated in accordance with PPI TR-7. Average inside diameter is calculated with nominal OD and minimum wall thickness plus 6%. Actual ID's will vary and are controlled by the dimensions and tolerances listed in the applicable pipe specifications.

Per AWWA C906, the working pressure rating equals the pressure class, with an allowance included in the WPR for pressure surge. The pressure and surge design basis for polyethylene pipe is different from the PVC and DI pipe design basis. For DR's not listed please contact your customer service representative.

$$DR = \frac{\text{Pipe OD (inches)}}{\text{Minimum Wall Thickness (inches)}}$$

The Long-Term Hydrostatic Strength of PE4710 Polyethylene Pipe is 1600 psi at 73.4 F. All pipe sizes with the same DR and Long Term Hydrostatic Strength will have equal operating pressure capability.

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# DESIGN-FLOW® High Density Polyethylene Pipe
# 2” - 18” IPS PE Pipe Packaging and Loading Information

| IPS Pipe Size | Pipe OD (in) | Bundle Style | SDR | Joints Per Pack* | Joints Per Layer* | Layers Per Truck* | Packs Per Truck | Joints Per Truck | Feet Per Truck | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 40's / 50's | 40's / 50's | 40's | 50's |
| 2" | 2.375 | Soft Pack | 7 | 88 / 88 | 176 | 6 | 11 | 968 | 38720 | 48400 |
| | | | 9 - 32.5 | 88 / 88 | 176 | 6 | 12 | 1056 | 42240 | 52800 |
| 3" | 3.500 | Hard Pack | 7 | 50 / 50 | 100 | 7 | 11 / 9 | 550 / 450 | 22000 | 22500 |
| | | | 9 | 50 / 50 | 100 | 7 | 13 / 11 | 650 / 550 | 26000 | 27500 |
| | | | 11 | 50 / 50 | 100 | 7 | 14 / 13 | 700 / 650 | 28000 | 32500 |
| | | | 13.5 - 32.5 | 50 / 50 | 100 | 7 | 14 | 700 | 28000 | 35000 |
| 4" | 4.500 | Hard Pack | 7 | 29 / 29 | 58 | 7 | 11 / 9 | 319 / 261 | 12760 | 13050 |
| | | | 9 | 29 / 29 | 58 | 7 | 14 / 11 | 406 / 319 | 16240 | 15950 |
| | | | 11 - 32.5 | 29 / 29 | 58 | 7 | 14 | 406 | 16240 | 20300 |
| 5" | 5.563 | Hard Pack | 7 | 15 / 15 | 30 | 8 | 14 / 12 | 210 / 180 | 8400 | 9000 |
| | | | 9 | 15 / 15 | 30 | 8 | 16 / 14 | 240 / 210 | 9600 | 10500 |
| | | | 13.5 - 32.5 | 15 / 15 | 30 | 8 | 16 | 240 | 9600 | 12000 |
| 6" | 6.625 | Hard Pack | 7 | 13 / 13 | 26 | 7 | 12 / 9 | 156 / 117 | 6240 | 5850 |
| | | | 11 | 13 / 13 | 26 | 7 | 14 / 12 | 182 / 156 | 7280 | 7800 |
| | | | 13.5 - 32.5 | 13 / 13 | 26 | 7 | 14 | 182 | 7280 | 9100 |
| 8" | 8.625 | Hard Pack | 7 | 12 / 10 | 22 | 5 | 8 / 6 | 88 / 66 | 3520 | 3300 |
| | | | 9 | 12 / 10 | 22 | 5 | 10 / 8 | 110 / 88 | 4400 | 4400 |
| | | | 13.5 - 32.5 | 12 / 10 | 22 | 5 | 10 | 110 | 4400 | 5500 |
| 10" | 10.750 | Bulk Pack | 7 | 5 / 4 | 9 | 7 | 13 / 10 | 59 / 45 | 2360 | 2250 |
| | | | 9 | 5 / 4 | 9 | 7 | 14 / 13 | 63 / 58 | 2520 | 2900 |
| | | | 11 - 32.5 | 5 / 4 | 9 | 7 | 14 | 63 | 2520 | 3150 |
| 12" | 12.75 | Bulk Pack | 7 | 4 / 4 | 8 | 6 | 10 / 8 | 40 / 32 | 1600 | 1600 |
| | | | 9 | 4 / 4 | 8 | 6 | 12 / 10 | 48 / 40 | 1920 | 2000 |
| | | | 11 - 32.5 | 4 / 4 | 8 | 6 | 12 | 48 | 1920 | 2400 |
| 14" | 14.00 | Bulk Pack | 7 | 4 / 3 | 7 | 6 | 10 / 8 | 35 / 28 | 1400 | 1400 |
| | | | 9 | 4 / 3 | 7 | 6 | 12 / 10 | 42 / 35 | 1680 | 1750 |
| | | | 11-32.5 | 4 / 3 | 7 | 6 | 12 | 42 | 1680 | 2100 |
| 16" | 16.00 | Bulk Pack | 7 | 3 / 3 | 6 | 5 | 9 / 7 | 27 / 21 | 1080 | 1050 |
| | | | 9 | 3 / 3 | 6 | 5 | 10 / 9 | 30 / 27 | 1200 | 1350 |
| | | | 11 - 32.5 | 3 / 3 | 6 | 5 | 10 | 30 | 1200 | 1500 |
| 18" | 18.00 | Bulk Pack | 7 | 3 / 2 | 5 | 5 | 8 / 7 | 20 / 17 | 800 | 850 |
| | | | 9 | 3 / 2 | 5 | 5 | 10 / 8 | 25 / 20 | 1000 | 1000 |
| | | | 11 - 32.5 | 3 / 2 | 5 | 5 | 10 | 20 | 1000 | 1250 |

**DESIGN-FLOW®** HDPE Pipe is stocked in 40’ joints. Special order lengths are available if specified for a production run, cutting fees may apply if shorter lengths are needed otherwise. Order quantities requiring packaging of joints other than the standard pack amount(s) shown will require a “repack” fee.

**“Joints Per Pack, Joints Per Layer & Layers Per Truck” quantities are based on full truck load stacks. “Packs Per Truck, Joints Per Truck & Feet Per Truck” quantities are based on SDR as listed. Quantities shown are based on a trailer height of 56” with a load height not exceeding 13’ 6”. Load weight limit is 46,500 pounds. Height and weight regulations vary from state to state, special permits may be required in some areas. Certain states allow loads larger than listed. Please inquire with our Customer Service Department for information on load limits in your area.**

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# DESIGN-FLOW® High Density Polyethylene Pipe
# 20” - 65” IPS PE Pipe Packaging and Loading Information

| IPS Pipe Size | Pipe OD (in) | Bundle Style | SDR | Joints Per Pack* | Joints Per Layer* | Layers Per Truck* | Packs Per Truck | Joints Per Truck | Feet Per Truck | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 40's / 50's | 40's / 50's | 40's | 50's |
| 20" | 20.00 | Hard Pack | 7 | 3 / 2 | 5 | 4 | 7 / 5 | 17 / 13 | 680 | 650 |
| | | | 9 | 3 / 2 | 5 | 4 | 8 / 7 | 20 / 17 | 800 | 850 |
| | | | 11 - 32.5 | 3 / 2 | 5 | 4 | 8 | 20 | 800 | 1000 |
| 22" | 22.0 | Hard Pack | 7 | 2 / 2 | 4 | 4 | 7 / 5-1/2 | 14 / 11 | 560 | 550 |
| | | | 9 | 2 / 2 | 4 | 4 | 8 / 7 | 16 / 14 | 640 | 700 |
| | | | 11 - 32.5 | 2 / 2 | 4 | 4 | 8 | 16 | 640 | 800 |
| 24" | 24.00 | Bulk Pack | 7 | 2 / 2 | 4 | 4 | 6 / 4-1/2 | 12 / 9 | 480 | 450 |
| | | | 9 | 2 / 2 | 4 | 4 | 7 / 6 | 14 / 12 | 560 | 600 |
| | | | 11 | 2 / 2 | 4 | 4 | 8 / 7 | 16 / 14 | 640 | 700 |
| | | | 13.5 - 32.5 | 2 / 2 | 4 | 4 | 8 | 16 | 640 | 800 |
| 26" | 26.00 | Bulk Pack | 7 | 2 / 1 | 3 | 3 | 6 / 6.5 | 9 / 8 | 360 | 400 |
| | | | 9 - 32.5 | 2 / 1 | 3 | 3 | 6 | 9 | 360 | 450 |
| 28" | 28.00 | Bulk Pack | 9 | 2 / 1 | 3 | 3 | 6 / 5 | 9/ 8 | 360 | 400 |
| | | | 11 - 32.5 | 2 / 1 | 3 | 3 | 6 | 9 | 360 | 450 |
| 30" | 30.00 | Bulk Pack | 9 | 2 / 1 | 3 | 3 | 6 / 5 | 9 / 7 | 360 | 350 |
| | | | 11 - 32.5 | 2 / 1 | 3 | 3 | 6 | 9 | 360 | 450 |
| 32" | 32.00 | Bulk Pack | 11 | 2 / 1 | 3 | 3 | 6 / 5 | 9 / 8 | 360 | 400 |
| | | | 13.5 - 32.5 | 2 / 1 | 3 | 3 | 6 | 9 | 360 | 450 |
| 36" | 36.00 | Strip Load | 9 - 32.5 | 1 / 1 | 2 | 2 | 4 | 4 | 160 | 200 |
| 42" | 42.000 | Strip Load | 13.5 - 32.5 | 1 / 1 | 2 | 2 | 4 | 4 | 160 | 200 |
| 48" | 48.000 | Strip Load | 17 - 32.5 | 1 / 1 | 2 | 2 | 4 | 4 | 160 | 200 |
| 54" ** | 54.000 | Strip Load | 17 - 32.5 | 1 / 1 | 1 | 1 | 1 | 1 | 40 | 50 |
| 63" ** | 63.000 | Strip Load | 21 - 32.5 | 1 / 1 | 1 | 1 | 1 | 1 | 40 | 50 |
| 65" ** | 65.000 | Strip Load | 21 - 32.5 | 1 / 1 | 1 | 1 | 1 | 1 | 40 | 50 |

**DESIGN-FLOW®** HDPE Pipe is stocked in 40’ joints. Special order lengths are available if specified for a production run, cutting fees may apply if shorter lengths are needed otherwise. Order quantities requiring packaging of joints other than the standard pack amount(s) shown will require a “repack” fee.**Indicates 2 jts. if special equipment available.

**“Joints Per Pack, Joints Per Layer & Layers Per Truck” quantities are based on full truck load stacks. “Packs Per Truck, Joints Per Truck & Feet Per Truck” quantities are based on SDR as listed. Quantities shown are based on a trailer height of 56” with a load height not exceeding 13’ 6”. Load weight limit is 46,500 pounds. Height and weight regulations vary from state to state, special permits may be required in some areas. Certain states allow loads larger than listed. Please inquire with our Customer Service Department for information on load limits in your area.**

+GF+ GEORG FISCHER PIPING SYSTEMS

# DESIGN-FLOW® High Density Polyethylene Pipe
# 4” - 48” DIPS PE Pipe Packaging and Loading Information

| DIPS Pipe Size | Pipe OD (in) | Bundle Style | SDR | Joints Per Pack | Joints Per Layer | Layers Per Truck | Packs Per Truck | Joints Per Truck | Feet Per Truck | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 40's / 50's | 40's / 50's | 40's | 50's |
| 4" | 4.800 | Hard Pack | 9 | 29 / 29 | 58 | 6 | 12 | 348 / 290 | 13920 | 14500 |
| | | | 11 - 32.5 | 29 / 29 | 58 | 6 | 12 | 348 | 13920 | 17400 |
| 6" | 6.900 | Hard Pack | 9 | 13 / 13 | 26 | 6 | 12 | 156 / 143 | 6240 | 7150 |
| | | | 11 - 32.5 | 13 / 13 | 26 | 6 | 12 | 156 | 6240 | 7800 |
| 8 | 9.050 | Hard Pack | 9 | 6 / 5 | 11 | 9 | 18 / 15 | 99 / 83 | 3960 | 4150 |
| | | | 11 - 32.5 | 6 / 5 | 11 | 9 | 18 | 99 | 3960 | 4950 |
| 10 | 11.100 | Bulk Pack | 9 | 5 / 4 | 9 | 7 | 14 / 12 | 63 / 54 | 2520 | 2700 |
| | | | 11 - 32.5 | 5 / 4 | 9 | 7 | 14 | 63 | 2520 | 3150 |
| 12" | 13.200 | Bulk Pack | 9 | 4 / 3 | 7 | 6 | 12 / 11 | 42 / 39 | 1680 | 1950 |
| | | | 11 - 32.5 | 4 / 3 | 7 | 6 | 12 | 42 | 2680 | 2100 |
| 14" | 15.300 | Bulk Pack | 9 | 3 | 6 | 5 | 10 / 9 | 30 / 27 | 1200 | 1350 |
| | | | 11 - 32.5 | 3 | 6 | 5 | 10 | 30 | 1200 | 1500 |
| 16" | 17.400 | Bulk Pack | 9 | 3 / 2 | 5 | 5 | 10 / 9 | 25 / 22 | 1000 | 1100 |
| | | | 11 - 32.5 | 3 / 2 | 5 | 5 | 10 | 25 | 1000 | 1250 |
| 18" | 19.500 | Bulk Pack | 9 | 3 / 2 | 5 | 4 | 8 / 7 | 20 / 18 | 800 | 900 |
| | | | 11 - 32.5 | 3 / 2 | 5 | 4 | 8 | 20 | 800 | 1000 |
| 20" | 21.600 | Bulk Pack | 9 - 11 | 2 / 2 | 4 | 4 | 8 / 7 | 16 / 14 | 640 | 700 |
| | | | 13.5 - 32.5 | 2 / 2 | 4 | 4 | 8 | 16 | 640 | 800 |
| 24" | 25.800 | Bulk Pack | 9 - 32.5 | 2 / 1 | 3 | 3 | 6 | 9 | 360 | 450 |
| 30" | 32.000 | Bulk Pack | 11 | 2 / 1 | 3 | 3 | 6 / 5 | 9 / 8 | 360 | 400 |
| | | | 13.5 - 32.5 | 2 / 1 | 3 | 3 | 6 | 9 | 360 | 450 |
| 36" | 38.300 | Strip Load | 13.5 - 32.5 | 1 / 1 | 2 | 2 | 4 | 4 | 160 | 200 |
| 42" | 45.500 | Strip Load | 13.5 - 32.5 | 1 / 1 | 2 | 2 | 4 | 4 | 160 | 200 |
| 48" | 50.800 | Strip Load | 17 - 32.5 | 1 / 1 | 2 | 2 | 4 | 4 | 160 | 200 |

**DESIGN-FLOW®** HDPE Pipe is stocked in 40’ joints. Special order lengths are available if specified for a production run, cutting fees may apply if shorter lengths are needed otherwise. Order quantities requiring packaging of joints other than the standard pack amount(s) shown will require a “repack” fee.

**“Joints Per Pack, Joints Per Layer & Layers Per Truck” quantities are based on full truck load stacks. “Packs Per Truck, Joints Per Truck & Feet Per Truck” quantities are based on SDR as listed. Quantities shown are based on a trailer height of 56” with a load height not exceeding 13’ 6”. Load weight limit is 46,500 pounds. Height and weight regulations vary from state to state, special permits may be required in some areas. Certain states allow loads larger than listed. Please inquire with our Customer Service Department for information on load limits in your area.**

+GF+ GEORG FISCHER PIPING SYSTEMS

DESIGN-FLOW® **High Density Polyethylene Pipe**

# Calculation of Fusion Gage Pressure for Hydraulic Fusion Machines

When calculating the recommended hydraulic pressure shown on the pressure gage, the manufacturer for the specific machine in use should be consulted. In order to calculate the required hydraulic gage pressure the fusion machine effective hydraulic piston area must be known.

## CALCULATION:

$$\text{Hydraulic Gauge Pressure (psi)} = \left[\frac{.785 \times (OD^2 - ID^2) \times IP.}{\text{Piston Area}}\right] + \text{Drag Factor}$$

Where:

| | | |
|---|---|---|
| OD | = | Pipe outside diameter (in) |
| ID | = | Pipe inside diameter (in) |
| IP | = | Interfacial pressure required (75 psi) |
| Piston Area | = | Total hydraulic piston area ($in^{2)}$ |
| *Drag Factor | = | Hydraulic gage pressure required to move the pipe and carriage / clamp. 30 psi is generally accepted as a minimum. |

* The drag factor is an important parameter easily overlooked. If two long pieces of pipe are being fused, the drag factor can easily reach much higher pressures.

DESIGN-FLOW® High Density Polyethylene Pipe

# Butt Fusion Procedure & Qualification

## Butt Fusion Procedure for PE3408 / PE3608 / PE4710 Pipe and Fittings

1. Clean inside and outside of each pipe end with a clean cloth.
2. Place pipe and/or butt fitting ends into the proper alignment device. Square (normally by facing) the end of each pipe to be fused.
3. Check alignments of pipe ends and adjust. Check for voids and gaps. Check heater plate using a pyrometer for proper surface temperature of 400$^{O}$ F- 425$^{O}$ F (-0$^{O}$/+25$^{O}$). Insure heater surface is clean using only a clean cotton cloth, avoid fabric materials that melt and stick to heater plates.
4. Insert heater plate between aligned ends and bring ends firmly in contact with plate, but **DO NOT APPLY PRESSURE** while achieving melt pattern. Watch for proper melt bead (see table below).
5. Remove heater plate after achieving proper melt bead.
6. Bring melted ends together rapidly. **DO NOT SLAM.** Apply enough pressure* to form a uniform, double rollback bead around entire circumference of the joint.
7. Allow the fusion joint to cool properly (until comfortable to the touch) while maintaining pressure.

**Approximate Melt Bead Width ****

| Pipe OD Range (inches) | Nominal Melt Bead Width (inches) ** |
|---|---|
| >1 to <3 | 1/16 to 1/8 |
| >3 to <8 | 1/8 to 3/16 |
| >8 to <12 | 3/16 to 5/15 |
| >12 to <24 | 5/16 to 7/16 |
| >24 to <36 | 7/16 |
| >36 to <54 | 9/16 |

** As measured from the heater plate face

### Additional Tips To Insure A Quality Butt Fusion

- A quality butt fusion joint has a double bead rolled back to the OD body of the pipe.
- Use caution when handling completed fusion joints until joint has cooled to ambient temperature.
- * Recommended interfacial pressure is 75-psi (+/- 5 psi). **( PPI Report TR-33 cites 60 psi - 90 psi range )**

## Fusion Equipment & Operator Qualification

Qualification of operator and equipment occurs when the heat fusion operator has been trained in the proper steps of PPI's TR-33 Butt Fusion, and then demonstrates mastery of the fusion equipment and the IPPI endorsed fusion procedures consistently. If desired, the project specific fusion procedure(s) may be recorded and documented for each joint either manually, or, electronically by using available data logging type devices.

## Fusion Joint Validation

Attempts at fusion joint validation testing have provided mixed results with today's modern materials. The only short term validation tests IPPI accepts are ASTM D-1599, Quick-Burst Hydro-testing, and ASTM D1598, Constant Pressure Testing at Elevated Temperature.

# DESIGN-FLOW® High Density Polyethylene Pipe

# Sidewall Fusion Procedure

**PE3408 / PE3608 / PE4710 Sidewall Fusion Procedure**

1. Install fusion machine on the main pipe.
2. Clean the pipe with a clean cotton cloth. Rough the surface with 60 grit or coarser utility cloth. Brush away residue with a clean, dry rag after abrading. **( Do not use sand paper. )**
3. Clean and rough the saddle base of tee (side fitting) with 60 grit or coarser utility cloth. Brush away residue with a clean, dry rag after abrading.
4. Align fitting on main and tighten clamp (insert adapter) on fitting stem while applying slight pressure on movable clamp handle.
5. Check saddle for square alignment on main.
6. Clean face of heater adapters with a clean cotton cloth.* Check heater plates for proper surface temperature of 475$^{o}$ F - 500$^{o}$ F. Raise movable clamp with fitting. Roll in and center heater plate with adapter between base of fitting and main.
7. For all sizes, apply an adequate and uniform pressure until continuous melt bead can be seen on main. Reduce pressure to light pressure; continue heat soak cycle on fitting and main; and, watch base of fitting for the appropriate melt bead to be visible completely around the base of the fitting and on the main around the heating iron base;

**Approximate Melt Bead Width ****

| Pipe OD Range (inches) | Nominal Melt Bead Width (inches) ** |
|---|---|
| >1 to <3 | 1/16 to 1/8 |
| >3 to <8 | 1/8 to 3/16 |
| >8 to <12 | 3/16 to 5/15 |
| >12 to <24 | 5/16 to 7/16 |
| >24 to <36 | 7/16 |
| >36 to <54 | 9/16 |

** As measured from the heater plate face

8. Raise moveable clamps and remove heater plate.
9. Bring melted surfaces together rapidly and smoothly. Apply continuous progressive pressure until proper fusion bead is formed. Maintain pressure until joint has cooled (until comfortable to the touch). **( For additional information, refer to PPI Report TR41. )**

**REMEMBER:**

•Install proper sidewall and fitting inserts in fusion unit for the pipe and fittings being joined.

•Be sure correct sidewall adapters are installed on heater plate.

•A quality side fusion joint has a uniform, well-aligned appearance all around.

•Heater plate should be checked periodically with a pyrometer for correct surface temperature (475$^{o}$ F - 500$^{o}$ F ).

* Avoid materials that melt and stick to heater plates.

# DESIGN-FLOW® High Density Polyethylene Pipe for Municipal & Industrial

## PE3408 / PE3608 Nominal Physical Properties*

| Typical Specification | ASTM Test Method | Nominal Values |
|---|---|---|
| Density | ASTM D 1505 | .955 gm / $cm^3$ |
| Melt Index[1] | ASTM D 1238 | 6.5 gm / 10 min. |
| Tensile Strength | | |
| @ Yield (2 in/min) | ASTM D 638 | 3300 psi |
| @ Break (2 in/min) | ASTM D 638 | 4500 psi |
| Hydrostatic Design Basis (HDB) | | |
| @ 23° C (73.4° F) | ASTM D 2837 | 1600 psi |
| @ 60° C (140° F) | ASTM D 2837 | 1000 psi |
| HDB Design Factor (DF) | PPI TR-4 | 0.50 |
| Elongation @ Break (2 in/min) | ASTM D 638 | >750% |
| Flexural Modulus[2] | ASTM D 790 | 125,000 psi |
| Notched Izod Impact Strength | ASTM D 256 | 6.0 ft-lbf / in |
| Hardness (Shore D) | ASTM D 2240 | 66 |
| Brittleness Temperature | ASTM D 746 | < -103 ° F |
| Enviromental Stress Crack Resistance[3] | ASTM D 1693 | >5000 hrs |
| NSF | STANDARD 61 | APPROVED |
| Cell Classification | ASTM D 3350 | 345464C (min) |
| Vicat Softening Point | ASTM D 1525 | 257 ° F |
| Oxidative Induction Time | ASTM D 3895 | OIT > 40 minutes |

**DESIGN-FLOW®** High Density Polyethylene Pipe for M & I is manufactured to ASTM F 714, ASTM D 3035, AWWA C901/C906 and NSF standards as applicable. Standard color of pipe is black with blue print line.

**Notes: [1] 190° C / 21,600 g; [2] 2% Secant - Method 1**

*This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations of specifications. The physical properties values reported herein were determined on compression molded specimens prepared in accordance with procedure C of ASTM D 4703 and may differ from specimens taken from pipe.

+GF+ GEORG FISCHER PIPING SYSTEMS

# DESIGN-FLOW® High Density Polyethylene Pipe for Municipal & Industrial

## PE4710 Nominal Physical Properties*

| Typical Specification | ASTM Test Method | Nominal Values |
|---|---|---|
| Density | ASTM D 1505 | .959 gm / $cm^3$ |
| Melt Index[1] | ASTM D 1238 | 7.0 gm / 10 min. |
| Tensile Strength | | |
| @ Yield (2 in/min) | ASTM D 638 | 3600 psi |
| @ Break (2 in/min) | ASTM D 638 | 4500 psi |
| Hydrostatic Design Basis (HDB) | | |
| @ 23° C (73.4° F) | ASTM D 2837 | 1600 psi |
| @ 60° C (140° F) | ASTM D 2837 | 1000 psi |
| HDB Design Factor (DF) | PPI TR-4 | 0.63 |
| Elongation @ Break (2 in/min) | ASTM D 638 | >740% |
| Flexural Modulus[2] | ASTM D 790 | 150,000 psi |
| Notched Izod Impact Strength | ASTM D 256 | 9.0 ft-lbf / in |
| Hardness (Shore D) | ASTM D 2240 | 68 |
| Brittleness Temperature | ASTM D 746 | < -103 ° F |
| Slow Crack Growth PENT, hours | ASTM D1473 | >10,000 hrs |
| NSF | STANDARD 61 | APPROVED |
| Cell Classification | ASTM D 3350 | 445574C |
| Vicat Softening Point | ASTM D 1525 | 257 ° F |
| Oxidative Induction Time | ASTM D 3895 | OIT > 40 minutes |

**DESIGN-FLOW®** High Density Polyethylene Pipe for M & I is manufactured to ASTM F 714, ASTM D 3035, AWWA C901/C906 and NSF standards as applicable. Standard color of pipe is black with blue print line.

**Notes: [1] 190° C / 21,600 g; [2] 2% Secant - Method 1**

*This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations of specifications. The physical properties values reported herein were determined on compression molded specimens prepared in accordance with procedure C of ASTM D 4703 and may differ from specimens taken from pipe.

+GF+ GEORG FISCHER PIPING SYSTEMS

# DESIGN-FLOW® D2513 High Density Polyethylene Pipe for Oil & Gas

## PE3408 / PE3608 Nominal Physical Properties*

| Typical Specification | ASTM Test Method | Nominal Values |
|---|---|---|
| Density | ASTM D 1505 | .955 gm / $cm^3$ |
| Melt Index[1] | ASTM D 1238 | 6.5 gm / 10 min. |
| Tensile Strength | | |
| @ Yield (2 in/min) | ASTM D 638 | 3300 psi |
| @ Break (2 in/min) | ASTM D 638 | 4500 psi |
| Hydrostatic Design Basis | | |
| @ 23° C (73.4° F) | ASTM D 2837 | 1600 psi |
| @ 60° C (140° F) | ASTM D 2837 | 1000 psi |
| HDB Design Factor (DF) | PPI TR-9 / PPI TR-22 | 0.25 Oil & Wet Gas<br>0.32 Dry Gas |
| Elongation @ Break (2 in/min) | ASTM D 638 | >750% |
| Flexural Modulus[2] | ASTM D 790 | 125,000 psi |
| Notched Izod Impact Strength | ASTM D 256 | 6.0 ft-lbf / in |
| Hardness (Shore D) | ASTM D 2240 | 66 |
| Brittleness Temperature | ASTM D 746 | < -103 ° F |
| Enviromental Stress Crack Resistance[3] | ASTM D 1693 | >5000 hrs |
| Cell Classification | ASTM D 3350 | 345464C (min) |
| Vicat Softening Point | ASTM D 1525 | 257 ° F |
| Oxidative Induction Time | ASTM D 3895 | OIT > 40 minutes |

**Design-Flow®** D2513 High Density Polyethylene Pipe for Oil & Gas is manufactured in accordance with ASTM D 2513 requirements. Standard color of pipe is black with yellow print line.

**Notes: [1] 190° C / 21,600 g; [2] 2% Secant - Method 1; [3] Condition C**

*This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations of specifications. The physical properties values reported herein were determined on compression molded specimens prepared in accordance with procedure C of ASTM D 4703 and may differ from specimens taken from pipe.

+GF+ GEORG FISCHER PIPING SYSTEMS

# DESIGN-FLOW® D2513 High Density Polyethylene Pipe for Oil & Gas

## PE4710 Nominal Physical Properties*

| Typical Specification | ASTM Test Method | Nominal Values |
|---|---|---|
| Density | ASTM D 1505 | .959 gm / $cm^3$ |
| Melt Index[1] | ASTM D 1238 | 7.0 gm / 10 min. |
| Tensile Strength | | |
| @ Yield (2 in/min) | ASTM D 638 | 3600 psi |
| @ Break (2 in/min) | ASTM D 638 | 4500 psi |
| Hydrostatic Design Basis | | |
| @ 23° C (73.4° F) | ASTM D 2837 | 1600 psi |
| @ 60° C (140° F) | ASTM D 2837 | 1000 psi |
| Pressure Design Factor (DF) | PPI TR-9 / PPI TR-22 | 0.25 Oil & Wet Gas<br>0.32 Dry Gas |
| Elongation @ Break (2 in/min) | ASTM D 638 | >740% |
| Flexural Modulus[2] | ASTM D 790 | 125,000 psi |
| Notched Izod Impact Strength | ASTM D 256 | 9.0 ft-lbf / in |
| Hardness (Shore D) | ASTM D 2240 | 66 |
| Brittleness Temperature | ASTM D 746 | < -103 ° F |
| Slow Crack Growth PENT, hours | ASTM D1473 | >10,000 hrs |
| Cell Classification | ASTM D 3350 | 445576C |
| Vicat Softening Point | ASTM D 1525 | 257 ° F |
| Oxidative Induction Time | ASTM D 3895 | OIT > 40 minutes |

**Design-Flow®** D2513 High Density Polyethylene Pipe for Oil & Gas is manufactured in accordance with ASTM D 2513 requirements. Standard color of pipe is black with yellow print line.

**Notes: [1] 190° C / 21,600 g; [2] 2% Secant - Method 1**

*This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations of specifications. The physical properties values reported herein were determined on compression molded specimens prepared in accordance with procedure C of ASTM D 4703 and may differ from specimens taken from pipe.

+GF+ GEORG FISCHER PIPING SYSTEMS

# DESIGN-FLOW® High Density Polyethylene Gray Slip Liner Pipe

## PE3408 / PE3608 Nominal Physical Properties*

| Typical Specification | ASTM Test Method | Nominal Values |
|---|---|---|
| Density | ASTM D 1505 | .955 gm / $cm^3$ |
| Melt Index[1] | ASTM D 1238 | 6.5 gm / 10 min. |
| Tensile Strength | | |
| @ Yield (2 in/min) | ASTM D 638 | 3300 psi |
| @ Break (2 in/min) | ASTM D 638 | 4500 psi |
| Hydrostatic Design Basis (HDB) | | |
| @ 23° C (73.4° F) | ASTM D 2837 | 1600 psi |
| @ 60° C (140° F) | ASTM D 2837 | 1000 psi |
| HDB Design Factor (DF) | PPI TR-4 | 0.50 |
| Elongation @ Break (2 in/min) | ASTM D 638 | >750% |
| Flexural Modulus[2] | ASTM D 790 | 125,000 psi |
| Notched Izod Impact Strength | ASTM D 256 | 6.0 ft-lbf / in |
| Hardness (Shore D) | ASTM D 2240 | 66 |
| Brittleness Temperature | ASTM D 746 | < -103 ° F |
| Enviromental Stress Crack Resistance[3] | ASTM D 1693 | >5000 hrs |
| Cell Classification | ASTM D 3350 | 345464E (min) |
| Vicat Softening Point | ASTM D 1525 | 257 ° F |
| Oxidative Induction Time | ASTM D 3895 | OIT > 40 minutes |

**Design-Flow®** High Density Polyethylene Slip Liner Pipe is manufactured in a standard color of light gray. Black slip liner can be produced by special request. Product is available in all standard sizes and SDR's as listed on the **Design-Flow®** HDPE Pipe Size Charts.

**Notes: [1] 190° C / 21,600 g; [2] 2% Secant - Method 1; [3] Condition C**

*This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations of specifications. The physical properties values reported herein were determined on compression molded specimens prepared in accordance with procedure C of ASTM D 4703 and may differ from specimens taken from pipe.

+GF+ GEORG FISCHER PIPING SYSTEMS

# DESIGN-FLOW® High Density Polyethylene Gray Slip Liner Pipe

## PE4710 Nominal Physical Properties*

| Typical Specification | ASTM Test Method | Nominal Values |
|---|---|---|
| Density | ASTM D 1505 | .959 gm / $cm^3$ |
| Melt Index[1] | ASTM D 1238 | 7.0 gm / 10 min. |
| Tensile Strength | | |
| @ Yield (2 in/min) | ASTM D 638 | 3600 psi |
| @ Break (2 in/min) | ASTM D 638 | 4500 psi |
| Hydrostatic Design Basis (HDB) | | |
| @ 23° C (73.4° F) | ASTM D 2837 | 1600 psi |
| @ 60° C (140° F) | ASTM D 2837 | 1000 psi |
| HDB Design Factor (DF) | PPI TR-4 | 0.63 |
| Elongation @ Break (2 in/min) | ASTM D 638 | >740% |
| Flexural Modulus[2] | ASTM D 790 | 150,000 psi |
| Notched Izod Impact Strength | ASTM D 256 | 9.0 ft-lbf / in |
| Hardness (Shore D) | ASTM D 2240 | 68 |
| Brittleness Temperature | ASTM D 746 | < -103 ° F |
| Slow Crack Growth PENT, hours | ASTM D1473 | >10,000 hrs |
| Cell Classification | ASTM D 3350 | 445574E |
| Vicat Softening Point | ASTM D 1525 | 257 ° F |
| Oxidative Induction Time | ASTM D 3895 | OIT > 40 minutes |

**Design-Flow®** High Density Polyethylene Slip Liner Pipe is manufactured in a standard color of light gray. Black slip liner can be produced by special request. Product is available in all standard sizes and SDR's as listed on the **Design-Flow®** HDPE Pipe Size Charts.

**Notes: [1] 190° C / 21,600 g; [2] 2% Secant - Method 1**

*This list of typical physical properties is intended for basic characterization of the material and does not represent specific determinations of specifications. The physical properties values reported herein were determined on compression molded specimens prepared in accordance with procedure C of ASTM D 4703 and may differ from specimens taken from pipe.

+GF+ GEORG FISCHER PIPING SYSTEMS

# APPENDIX F

## EMNRD Correspondence

F.1. Conformation of Compliance: OWL Landfill Services, Inc. Surface Waste Management Facility; Construction Update and Major Milestone Schedule; September 16, 2019

**OWL Landfill Services, LLC**
**8201 Preston Rd. Suite 520**
**Dallas, Texas 75225**
**(214) 292-2011**

Date: September 16, 2019

Mr. Jim Griswold
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 84805

**RE: Construction Update / Major Milestone Schedule**
**OWL Landfill Services, LLC, Lea County, New Mexico**
**Commercial Surface Waste Management Facility Permit NM1-63. Section 23, Township 24 South, Range 33 East NMPM, Lea County, New Mexico dated 08/17/2017**

Dear Mr. Griswold:

In accordance with the conditions of the above referenced permit, specifically 6.C., which states in part that "***The major milestone schedule shall be regularly updated throughout construction activities.***" this letter serves as notice that the major milestone schedule has been updated and submitted to the Oil Conservation Division (attached).

All other parts of the Surface Waste Management Facility Permit Conditions 6.C, of the above referenced permit; plans for the landfill, evaporation pond(s), stabilization and solidification area and process area plans were previously submitted to the Oil and Gas Division and substantially comply with the engineering design provided with the application and provide a detailed description of processes and equipment for the process area.

If you have any further questions or feel the need to contact me directly, please do so at (281) 802-2038 or by e-mail at tshreve@oilfieldwaterlogistics.com.

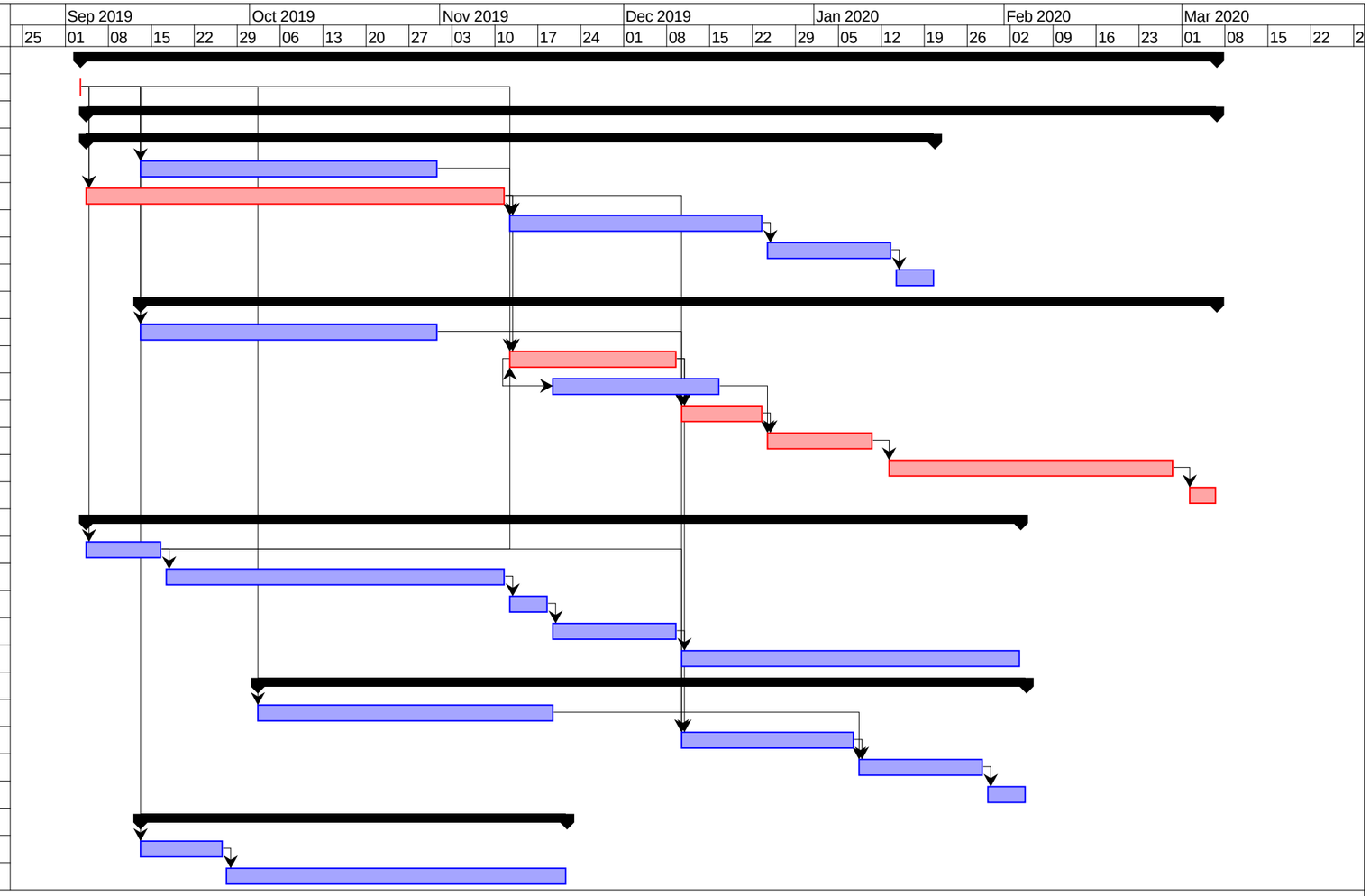
On behalf of OWL Landfill Services, LLC, I wish to thank you in advance for your continued support of this facility.

Sincerely,

Timothy Shreve

Tim Shreve
Director of Landfill Operations
OWL Landfill Services, LLC

| | Name | Duration | Start | Finish |
|---|---|---|---|---|
| 1 | **OWL Project Construction** | **134 days?** | **9/3/19 8:00 AM** | **3/6/20 5:00 PM** |
| 2 | Contract Finalization | 1 day | 9/3/19 8:00 AM | 9/3/19 5:00 PM |
| 3 | **OnSite Construction** | **133 days?** | **9/4/19 8:00 AM** | **3/6/20 5:00 PM** |
| 4 | **LF - Land Fill Scope** | **99 days** | **9/4/19 8:00 AM** | **1/20/20 5:00 PM** |
| 5 | LF - Liner Purchase | 35 days | 9/13/19 8:00 AM | 10/31/19 5:00 PM |
| 6 | LF - Subgrade Excavation / Prep | 49 days | 9/4/19 8:00 AM | 11/11/19 5:00 PM |
| 7 | LF - Liner Installation | 30 days | 11/12/19 8:00 AM | 12/23/19 5:00 PM |
| 8 | LF - Protective Soil Layer | 15 days | 12/24/19 8:00 AM | 1/13/20 5:00 PM |
| 9 | LF - Soil Backfill | 5 days | 1/14/20 8:00 AM | 1/20/20 5:00 PM |
| 10 | **DP - Drying Pit** | **126 days** | **9/13/19 8:00 AM** | **3/6/20 5:00 PM** |
| 11 | DP - Liner Purchase | 35 days | 9/13/19 8:00 AM | 10/31/19 5:00 PM |
| 12 | DP - Subgrade Excavation / Prep | 20 days | 11/12/19 8:00 AM | 12/9/19 5:00 PM |
| 13 | DP - Fine Sand Screening | 20 days | 11/19/19 8:00 AM | 12/16/19 5:00 PM |
| 14 | DP - Liner Installation | 10 days | 12/10/19 8:00 AM | 12/23/19 5:00 PM |
| 15 | DP - Protective Soil Layer | 14 days | 12/24/19 8:00 AM | 1/10/20 5:00 PM |
| 16 | DP - Concrete Installation | 35 days | 1/13/20 8:00 AM | 2/28/20 5:00 PM |
| 17 | DP - Soil Backfill | 5 days | 3/2/20 8:00 AM | 3/6/20 5:00 PM |
| 18 | **LP - Liquids Processing Facility** | **109 days** | **9/4/19 8:00 AM** | **2/3/20 5:00 PM** |
| 19 | LP - Subgrade Excavation / Prep | 9 days | 9/4/19 8:00 AM | 9/16/19 5:00 PM |
| 20 | LP - Concrete Installation | 40 days | 9/17/19 8:00 AM | 11/11/19 5:00 PM |
| 21 | LP - Soil Backfill | 5 days | 11/12/19 8:00 AM | 11/18/19 5:00 PM |
| 22 | LP - Equipment Installation | 15 days | 11/19/19 8:00 AM | 12/9/19 5:00 PM |
| 23 | LP - Piping / Elec / Inst Installation | 40 days | 12/10/19 8:00 AM | 2/3/20 5:00 PM |
| 24 | **EP - Evaporation Pond** | **90 days?** | **10/2/19 8:00 AM** | **2/4/20 5:00 PM** |
| 25 | DP - Liner Purchase | 35 days | 10/2/19 8:00 AM | 11/19/19 5:00 PM |
| 26 | DP - Subgrade Excavation / Prep | 21 days | 12/10/19 8:00 AM | 1/7/20 5:00 PM |
| 27 | EP - Liner & Leak Detection  Install | 15 days | 1/8/20 8:00 AM | 1/28/20 5:00 PM |
| 28 | EP - Soil Backfill | 5 days? | 1/29/20 8:00 AM | 2/4/20 5:00 PM |
| 29 | **HM - Highway Modification** | **50 days** | **9/13/19 8:00 AM** | **11/21/19 5:00 PM** |
| 30 | HM - Highway Modification - SWPPP | 10 days | 9/13/19 8:00 AM | 9/26/19 5:00 PM |
| 31 | HM - Highway Modification - Construction | 40 days | 9/27/19 8:00 AM | 11/21/19 5:00 PM |



## APPENDIX F

## EMNRD Correspondence

F.2. Conformation of Compliance: OWL Landfill Services, Inc. Surface Waste Management Facility; Major Milestone Schedule and Liner Installation Notification; November 18, 2019

**OWL Landfill Services, LLC**
**8201 Preston Rd. Suite 520**
**Dallas, Texas 75225**
**(214) 292-2011**

Date: November 18, 2019

Mr. Jim Griswold
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 84805

**RE: Major Milestone Schedule / Liner Install Notification**
**OWL Landfill Services, LLC, Lea County, New Mexico**
**Commercial Surface Waste Management Facility Permit NM1-63. Section 23, Township 24 South, Range 33 East NMPM, Lea County, New Mexico dated 08/17/2017**

Dear Mr. Griswold:

In accordance with the conditions of the above referenced permit, specifically 6.C., which states in part that "***The major milestone schedule shall be regularly updated throughout construction activities.***" this letter serves as notice that the major milestone schedule has been updated and submitted to the Oil Conservation Division (attached).

Additionally, as stated in Volume II of OWL's Permit Application dated October 2016, specifically Table II.1.8, Landfill Development Sequence, Item 3,c which states that OWL will "Notify OCD via a milestone schedule and at least 72 hours prior to liner installation." Please be advised that the liner installation will begin on December 3, 2019 as per the updated milestone schedule (attached).

All other parts of the Surface Waste Management Facility Permit Conditions 6.C, of the above referenced permit; plans for the landfill, evaporation pond(s), stabilization and solidification area and process area plans were previously submitted to the Oil and Gas Division and substantially comply with the engineering design provided with the application and provide a detailed description of processes and equipment for the process area.

If you have any further questions or feel the need to contact me directly, please do so at (281) 802-2038 or by e-mail at tshreve@oilfieldwaterlogistics.com.

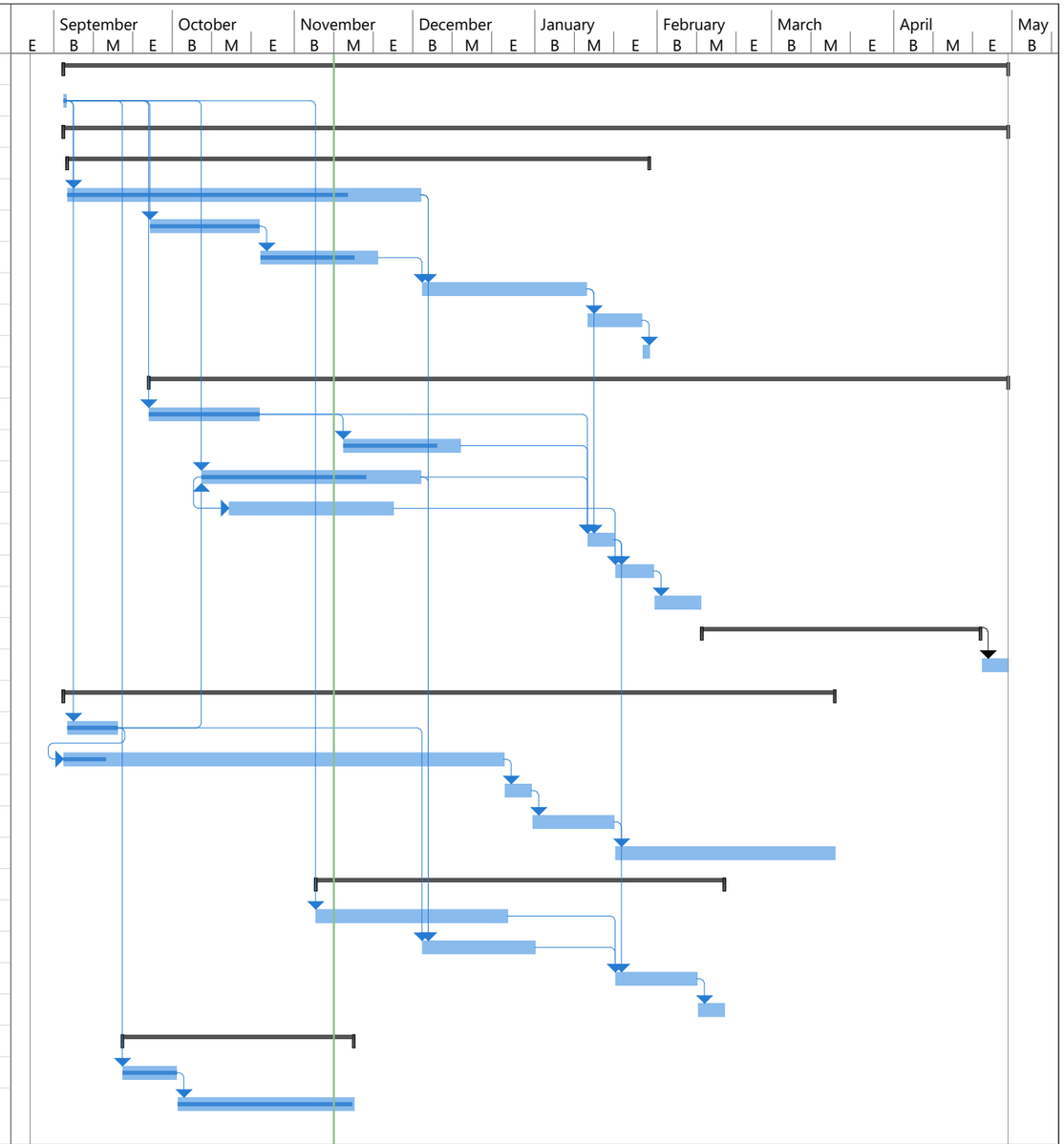
On behalf of OWL Landfill Services, LLC, I wish to thank you in advance for your continued support of this facility.

Sincerely,

Timothy Shreve

Tim Shreve
Director of Landfill Operations
OWL Landfill Services, LLC

| ID | Task Mode | Task Name | Duration | Start | Finish | % Complete |
|---|---|---|---|---|---|---|
| 1 | | **OWL Project Construction** | **172 days** | **Tue 9/3/19** | **Wed 4/29/20** | **35%** |
| 2 | | Contract Finalization | 1 day | Tue 9/3/19 | Tue 9/3/19 | 100% |
| 3 | | **OnSite Construction** | **172 days** | **Tue 9/3/19** | **Wed 4/29/20** | **35%** |
| 4 | | **LF - Land Fill Scope** | **106 days** | **Wed 9/4/19** | **Wed 1/29/20** | **60%** |
| 5 | | LF - Subgrade Excavation / Prep | 64 days | Wed 9/4/19 | Mon 12/2/19 | 80% |
| 6 | | LF - Liner Manufacturing | 20 days | Wed 9/25/19 | Tue 10/22/19 | 100% |
| 7 | | LF - Liner Testing | 22 days | Wed 10/23/19 | Thu 11/21/19 | 80% |
| 8 | | LF - Liner Installation | 30 days | Tue 12/3/19 | Mon 1/13/20 | 0% |
| 9 | | LF - Protective Soil Layer | 10 days | Tue 1/14/20 | Mon 1/27/20 | 0% |
| 10 | | LF - Soil Backfill | 2 days | Tue 1/28/20 | Wed 1/29/20 | 0% |
| 11 | | **DP - Drying Pit** | **156 days** | **Wed 9/25/19** | **Wed 4/29/20** | **34%** |
| 12 | | DP - Liner Manufacturing | 20 days | Wed 9/25/19 | Tue 10/22/19 | 100% |
| 13 | | DP - Liner Testing | 22 days | Wed 11/13/19 | Thu 12/12/19 | 80% |
| 14 | | DP - Subgrade Excavation / Prep | 40 days | Tue 10/8/19 | Mon 12/2/19 | 75% |
| 15 | | DP - Fine Sand Screening | 30 days | Tue 10/15/19 | Mon 11/25/19 | 0% |
| 16 | | DP - Liner Installation | 5 days | Tue 1/14/20 | Mon 1/20/20 | 0% |
| 17 | | DP - High Permeability Sand Install | 8 days | Tue 1/21/20 | Thu 1/30/20 | 0% |
| 18 | | DP - Structural Fill Install | 8 days | Fri 1/31/20 | Tue 2/11/20 | 0% |
| 19 | | **DP - Concrete Installation** | **51 days** | **Wed 2/12/20** | **Wed 4/22/20** | **0%** |
| 40 | | DP - Soil Backfill | 5 days | Thu 4/23/20 | Wed 4/29/20 | 0% |
| 41 | | **LP - Liquids Processing Facility** | **140 days** | **Tue 9/3/19** | **Mon 3/16/20** | **12%** |
| 42 | | LP - Subgrade Excavation / Prep | 9 days | Wed 9/4/19 | Mon 9/16/19 | 100% |
| 43 | | LP - Concrete Installation | 80 days | Tue 9/3/19 | Mon 12/23/19 | 11% |
| 44 | | LP - Soil Backfill | 5 days | Tue 12/24/19 | Mon 12/30/19 | 0% |
| 45 | | LP - Equipment Installation | 15 days | Tue 12/31/19 | Mon 1/20/20 | 0% |
| 46 | | LP - Piping / Elec / Inst Installation | 40 days | Tue 1/21/20 | Mon 3/16/20 | 0% |
| 47 | | **EP - Evaporation Pond** | **74 days** | **Wed 11/6/19** | **Mon 2/17/20** | **0%** |
| 48 | | DP - Liner Purchase | 35 days | Wed 11/6/19 | Tue 12/24/19 | 0% |
| 49 | | DP - Subgrade Excavation / Prep | 21 days | Tue 12/3/19 | Tue 12/31/19 | 0% |
| 50 | | EP - Liner & Leak Detection  Install | 15 days | Tue 1/21/20 | Mon 2/10/20 | 0% |
| 51 | | EP - Soil Backfill | 5 days | Tue 2/11/20 | Mon 2/17/20 | 0% |
| 52 | | **HM - Highway Modification** | **43 days** | **Wed 9/18/19** | **Fri 11/15/19** | **98%** |
| 53 | | HM - Highway Modification - SWPPP | 10 days | Wed 9/18/19 | Tue 10/1/19 | 100% |
| 54 | | HM - Highway Modification - Construction | 33 days | Wed 10/2/19 | Fri 11/15/19 | 98% |




Project: OWL Project Schedule
Date: Mon 11/11/19

| | | | | | |
|---|---|---|---|---|---|
| Task | Project Summary | Manual Task | Start-only | Deadline | |
| Split | Inactive Task | Duration-only | Finish-only | Progress | |
| Milestone | Inactive Milestone | Manual Summary Rollup | External Tasks | Manual Progress | |
| Summary | Inactive Summary | Manual Summary | External Milestone | | |

# APPENDIX G

## Resumés

G.1. Charles W. Fiedler, P.E., Principal, Gordon/PSC

# CHARLES W. FIEDLER, P.E., LEED AP

Principal

## Fields of Expertise

Environmental and Civil Engineering;
Solid Waste Facility Siting, Design, Permitting, Construction
Solid Waste Facility Community Involvement
Solid Waste Landfill Cell Design and Construction
Solid Waste Gatehouse and Maintenance Facilities
Solid Waste Municipal and Regional Planning
Landfill Gas Collection System Design, Development, Permit
Landfill Gas Collection System Construction/Commissioning
Landfill Gas Beneficial Use; Composting System Design
Transfer/Collection Station and Material Recovery Facilities
Oilfield Waste Processing and Disposal Facilities
Regulatory Compliance and Litigation Support
Expert Witness for Solid Waste Issues

## Registrations

Professional Engineer: New Mexico 19731
Professional Engineer: Texas 52247
LEED Accredited Professional-USGBC

## Education

Bachelors of Science Civil Engineering
Texas A&M University, 1978
Master of Science Civil Engineering
Texas A&M University, 1982

## Professional Summary

A proven record of leadership in the management of solid waste projects. Significant experiences bridging between the technical issues of a consultant's design and the practical implementation of that design in a landfill. Routinely responsible for interacting between consultants, owners, employees and contractors, translating between different levels of technical competency in the successful implementation of the project. Highly motivated and creative problem solver. Natural ability to manage relationships with all levels of an organization, as well as with the project community.

## Professional Affiliations

National Society of Professional Engineers
New Mexico Society of Professional Engineers
Solid Waste Association of North America
Landfill and Landfill Gas Divisions
SWANA-NM Roadrunner Chapter
National Waste & Recycling Association-NM
New Mexico Recycling Coalition
US Green Building Council-New Mexico Chapter

## Selected Project Experiences

**Sundance West**
**Lea County, NM 2018**
Developed construction documents/plans and managed construction for ten evaporation ponds (20-acres) designed with a double composite liner composed of a secondary 60-mil HDPE FML overlain with a 200-mil Geonet leak detection layer and a primary 60-mil HDPE FML. In addition, also developed construction documents/plans and managed construction for the initial two landfill cells (10-acres) that utilized a double composite liner composed of a Geosynthetic Clay Liner (GCL) overlain with a 60-mil HDPE Flexible Membrane Liner (FML), a 200-mil HDPE Geonet leak detection layer, a primary 60-mil HDPE FML, a 200-mil HDPE Geonet leachate collection layer and two feet of protective soil.

**City of Tucumcari Landfill**
**Tucumcari, NM 2016**
Developed plans, specifications and procurement documents for Cell 2C, a 4-acre GCL/FML composite lined excavation on a compacted subgrade. Managed procurement to select a contractor. Oversaw the construction that included the liner and the installation of a leachate collection and temporary sump. Managed the CQA and compiled the documentation required for approval by the State.

**Lea County Landfill**
**Eunice, NM 2016**
Developed plans, specifications and procurement documents for the construction of Cell 5, a 13-acre excavation with a GCL/FML composite liner on a compacted subgrade. Managed procurement to select a contractor. Oversaw construction that included the liner and a leachate collection system with sump and pump. Managed the CQA and compiled documentation required for approval by the State.

**Sundance West**
**Lea County, NM 2015**
Developed permit documents and plans for an OCD Part 36 Surface Waste Management Facility. This project includes a 124-acre landfill design that utilized a double composite liner composed of a Geosynthetic Clay Liner (GCL) overlain with a 60-mil HDPE Flexible Membrane Liner (FML), a 200-mil HDPE Geonet leak detection layer, a primary 60-mil HDPE FML, a 200-mil HDPE Geonet leachate collection layer and two feet of protective soil. Additionally, this facility included a produced water management facility composed of ten, 2-acre ponds that were designed with a double composite liner composed of a secondary 60-mil HDPE FML overlain with a 200-mil Geonet leak detection layer and a primary 60-mil HDPE FML. Also designed for this facility was a 5-acre stabilization and solidification

facility that included a double composite liner system that utilized the landfill liner configuration.

**DNCS Environmental Services**
**Lea County, NM 2014**
Developed permit documents and plans for an OCD Part 36 Surface Waste Management Facility. This project includes a 318-acre landfill design that utilized a double composite liner composed of a Geosynthetic Clay Liner (GCL) overlain with a 60-mil HDPE Flexible Membrane Liner (FML), a 200-mil HDPE Geonet leak detection layer, a primary 60-mil HDPE FML, a 200-mil HDPE Geonet leachate collection layer and two feet of protective soil. Additionally, this facility included a produced water management facility composed of twelve, 2-acre ponds that were designed with a double composite liner composed of a secondary 60-mil HDPE FML overlain with a 200-mil Geonet leak detection layer and a primary 60-mil HDPE FML. Also designed for this facility was a 5-acre stabilization and solidification facility that included a double composite liner system that utilized the landfill liner configuration.

**Sandoval County Landfill**
**Rio Rancho, NM 2014**
Developed plans, specifications and procurement documents for the construction of Cell 4C, 5B, 6B and 7, comprising 32.3 acres lined with a GCL/FML composite liner on a compacted subgrade that included a geonet drainage layer. Managed procurement to select a contractor. Oversaw construction that included the liner and a leachate collection system with sump and pump. Managed the CQA and compiled documentation required for approval by the State.

**Camino Real Landfill**
**Sunland Park, NM 2014**
Developed plans, specifications and procurement documents for Cell 9BA, a 5-acre GCL/FML composite lined excavation on a compacted subgrade. Managed procurement to select a contractor. Project was placed on hold by the Owner due to capital issues within the company.

**Valencia Landfill and Recycling Facility**
**Valencia County, NM 2014**
Developed plans, specifications and procurement documents for Cell 5A, a 6-acre GCL/FML composite lined excavation on a compacted subgrade. Managed procurement to select a contractor. Oversaw the construction that included the liner and the development of the leachate collection system. Managed the CQA and compiled the documentation required for approval by the State.

**Lea County Landfill**
**Eunice, NM 2011**
Developed plans, specifications and procurement documents for the construction of Cell 4, a 9.5-acre excavation with a GCL/FML composite liner on a compacted subgrade. Managed procurement to select a contractor. Oversaw construction that included the liner and a leachate collection system with sump and pump. Managed the CQA and compiled documentation required for approval by the State.

**Camino Real Landfill**
**Sunland Park, NM 2010**
Developed plans, specifications and procurement documents for Cell 10A, a 6-acre GCL/FML composite lined excavation on a compacted subgrade. Managed procurement to select a contractor. Oversaw the construction that included the liner and the extension of the leachate collection from the previous cells. Managed the CQA and compiled the documentation required for approval by the State.

**City of Tucumcari Landfill**
**Tucumcari, NM 2010**
Developed plans, specifications and procurement documents for Cell 2B, a 4-acre GCL/FML composite lined excavation on a compacted subgrade. Managed procurement to select a contractor. Oversaw the construction that included the liner and the installation of a leachate collection and temporary sump. Managed the CQA and compiled the documentation required for approval by the State.

**Sandoval County Landfill**
**Rio Rancho, NM 2010**
Developed plans, specifications and procurement documents for the construction of Cell 5A, a 10-acre excavation with a GCL/FML composite liner on a compacted subgrade. Managed procurement to select a contractor. Oversaw construction that included the liner and a leachate collection system with sump and pump. Managed the CQA and compiled documentation required for approval by the State.

**City of Denton Landfill**
**Denton, Texas 2002 and 2004**
Managed the design and construction of the second and third FML composite lined cells (30-acres total), including bidding, CQA, survey control, leachate recirculation and documentation. The liner system consisted of a compacted clay subgrade overlain with a 60-mil HDPE FML, a 200-mil HDPE Geonet and a two-foot protective soli layer.

**Canyon Landfill**
**Canyon, Texas 1999**
Engineer of record and principal designer for this 10-acre waste disposal cell containing a GCL/FML composite liner on a compacted subgrade. Developed plans, specifications and procurement documents. Managed procurement to select a contractor. Oversaw construction that included the liner and a leachate collection system with sump and pump. Managed the CQA and compiled documentation required for approval by the State.

**West Texas Region Landfill**
**Lubbock, Texas 1997**
Engineer of record and principal designer for this 1,200 acre disposal facility for the City of Lubbock, Texas. Challenges included how and where to start the active development of this large a facility to minimize impact on the surrounding landowners. Once successfully permitted, developed construction plans and specifications to construct the initial infrastructure including gate house/offices with scales, heavy equipment maintenance and crew facilities, access roads and initial 20-acre cell excavation and GCL/FML composite liner. The facilities cost $450,000 to design and $6.5 million to construct.

**Covel Gardens Landfill**
**San Antonio, Texas 1992**
Manager responsible for the design and development of the earthwork, composite lined cell, roads and environmental controls relating to the initial construction of this facility. This was the first composite lined municipal solid waste landfill cell in Texas, utilizing a 60-mil HDPE FML for the initial 20-acre cell. Planned development, negotiated construction contracts, coordinated consultants, orchestrated community relations, formulated schedules and budgeted expenditures. Intimately involved in delicate negotiations with City officials. Developed a significant knowledge of the market conditions and influences, including the significant individuals involved. This $5 million project was completed ahead of schedule and within budget.

# APPENDIX G

## Resumés

G.2. Carl R. King, P.E., Senior Project Manager, Gordon/PSC Site CQA Engineer

# CARL R. KING, P.E.

Senior Project Manager

## Fields of Expertise

Solid Waste Facility Siting, Design, Permitting
Solid Waste Landill Cell Design and Construction
Solid Waste Landfill Site Characterization
Solid Waste Facility Remediation and Closure
Transfer/Collection Station and Material Recovery Facilities
Waste-to-Energy Facilities
Acquisition review
Construction Quality Assurance and Quality Control
Regulatory Compliance and Litigation Support

## Education

Bachlor of Arts Engineering Management
Hiram College, Ohio 1980
Master of Science Environmental Engineering
Cleveland State University, Ohio 1984

## Registrations

Professional Engineer: Texas 67157
Professional Engineer: Nebraska E-7584

## Professional Summary

Mr. King is a Senior Project Manager with Gordon Environmental/PSC. He has over 47 years of experience in environmental, mechanical and civil engineering and is well versed with regulations and guidelines in a number of states. His responsibilities include landfill permitting and design, construction specification writing, compliance reporting, environmental construction management and construction quality assurance.

## Select Project Experience

Mr. King provided design services and served as Construction Quality Assurance (CQA) Manager Sundance West Cells 1A and 1B; Valencia Regional Landfill Cell 5B; Northeastern New Mexico Regional Landfill Unit 1B; City of Tucumcari Landfill Cell 3, in New Mexico. Implemented compliance efforts to new federal rules for waste disposal. Provided HELP model support and sized leachate collection piping for the Butterfield Station Landfill in Arizona, developed design details for assuring protection of composite liner components from piping penetrations, sized the excavation and requirements for the anticipated daily capacity, prepared specifications for utility extensions, developed criteria for maintenance and operational facilities, and developed traffic flow, road layouts and signage requirements. Design included channelization of runoff waters with discharge into an existing natural wash. The discharge capacities and velocities required a complicated settling basin and energy dissipation system before final release.

Directed the complete siting, permitting and detail design for a combined recycling center and transfer station serving the community of Fremont, Nebraska. Design included an integrated process conveyor with picking stations and an automatic unloading system to discharge and load bypass waste streams directly into 100 cubic yard capacity transfer trailers.

Provided compliance review to Subtitle D regulations criteria and developed the technical component of state implementation programs. Project locations included NE, MO, AZ, NY, TX, AR, LA, GA, and NM (Otero County and Taos Municipal landfills) and involved existing landfills, expansions, and new facility evaluations. Responsibilities included permit application preparation, consent decree negotiations, design criteria and details, economic evaluations, alternative evaluations, and multi-municipality teaming agreements.

Responsible for site selection, drainage plans, waste characterization determination, heat balances, and power production estimates for the licensed Volund waste-to-energy technology. Responsible for permitting processes, public hearing preparation and support and power sales agreements. Projects include Broward County, FL, and Dakota County, MN. Responsibilities expanded to include landfill gas (methane) to energy projects throughout the country. Selected and appointed to the Florida Department of Environmental Regulations Rule Development Committee Roundtable Board by the director of that agency.

Responsible for environmental and remedial projects involving design and construction management efforts for both new construction and corrective action efforts; regulatory agency interface and negotiations; risk assessments; remedial designs; contract administration and documentation; and field verification. Projects include Subtitle C and D composite liner designs, providing QAQC efforts and construction management for preparation of soil and synthetic liner evaluation reports.

Provide construction management implementation and engineer of record services for two cell expansions of the McCommas Road Landfill, Dallas, TX and new cell development of the Denton County Landfill, Denton, TX. Scope included final regulatory agency approvals; record design plans test report evaluations, and oversight of construction management and materials testing teams.

Provided engineer of record and material testing services for an expansion of a Subtitle D (hazardous materials) disposal cell of the Lone Mountain facility in Northwest OK.

Provide design and construction management implementation of the Hunter-Ferrell Road Municipal Landfill in Irving Texas. The multi phased expansion project included permit modifications and regulatory approvals through multiple agencies.

# APPENDIX G

## Resumés

G.3. Braden Belliveau, EIT, Gordon/PSC Site CQA Engineer/Manager

# BRADEN S. BELLIVEAU

Environmental Engineer in Training

## Fields of Expertise

Environmental engineering, site characterization and plan development, construction observation, waste classification, geosynthetic liner applications and testing, field sampling, remediation, quality assurance and quality control, environmental sampling and monitoring, landfill engineering design calculations, solid waste facility permitting, and soil mechanics

## Certifications

Geosynthetic Institute Inspectors Certification, 12/1/2018

OSHA Hazardous Waste Site Operations and Emergency Response Training (40-Hour), 06/13/2019

Nuclear Gauge Safety Certification: 07/21/2016

Radiation Safety Officer: 04/03/2019

## Education

B.S., Environmental Engineering, The State University of New York at Buffalo, 2016

## Professional Summary

Mr. Belliveau serves as a Project Engineer for Gordon Environmental/PSC. His assignments typically focus on landfill liner CQA, landfill excavation monitoring, environmental sampling (groundwater, landfill gas, soils), Solid Waste Facility Permits and Regulatory compliance.

## Select Project Experience

***Landfill/Pond Liner CQA, Sundance West, Oilfield Water Logistics Services, and Valencia County Regional Landfill:*** Construction Quality Assurance and project oversight for the installation of geosynthetic liner on multiple landfills and oil wastewater ponds. Installations included subgrade density testing, granular material thickness and sieve analysis testing, material quality assurance documentation, installation observation and repair record keeping. A post-installation CQA Report was also prepared for each project.

***Landfill Excavation Monitoring:*** Field representative for excavation of both active and closed landfills in New Mexico. Supervised the construction of underground utilities on the former Nazareth Landfill site. Responsibilities included methane and hydrogen sulfide monitoring, health and safety oversight, waste identification, and excavation observation during waste removal.

***Solid Waste Facility Permitting, Multiple Facilities in New Mexico:*** Participate in developing permit, permit renewals, and permit modifications for municipal solid waste, construction & demolition, and special waste landfills. Responsibilities include calculations demonstrating compliance with NMED regulations (i.e., erosion control, slope stability, tensile stresses), regulatory agency communications, research, and site visits.

***Landfill Gas Monitoring and Control, Multiple Locations, New Mexico:*** Field Technician for landfill gas monitoring at 12 active or closed landfills throughout the state of New Mexico. Responsibilities include site inspection for the presence of LFG at the landfill boundary, surface expressions of settling, slumping, or erosion that has the potential to expose waste on the final cover, and lead to the potential release of LFG off of the landfill site.

***Groundwater Sampling and Field Parameter Testing, Various Locations, New Mexico:*** Field Technician for groundwater sample collection at 15 different ongoing project locations throughout the State of New Mexico. Use of dedicated and portable pumps driven by air or electricity, as well as no-purge and low-impact discrete interval sampling devices, resulting in a unique familiarity with varying sample collection techniques. Field services include depth to water measurements, recording of field measurements, pump trouble shooting and repair, and preparation of chain-of-custody documentation. Inter- and/or intra-well statistical analyses performed as necessary to fulfill Permit and regulatory requirements.

***Stormwater Pollution Prevention Plans and Spill Prevention Control and Countermeasure Plans, Various Locations, New Mexico:*** Preparation of stormwater pollution prevention (SWPPP) plans and spill prevention, control, and countermeasures (SPCC) plans for multiple airports and landfills throughout New Mexico.

***Geotechnical Analysis, Multiple Projects in New Mexico:*** Classification and determination engineering properties of soils to be used in landfill cell construction using ASTM test methods for soil classification, grain size analyses, and Standard Proctor moisture/density relationships.

***Hydraulic Conductivity Testing and Determination:*** Hydraulic conductivity testing using multiple methods including slug testing, pump testing, constant and falling head methods, and estimation from grain size.

# APPENDIX G

## Resumés

G.4. Don Gray., Engineering Technician, Gordon/PSC Project Technologist

# DON GRAY
Engineering Technician

## Fields of Expertise
Groundwater monitoring; site characterization and plan development; construction observation; geosynthetic liner applications and testing; field sampling; quality assurance and quality control; physical property testing; field analysis; Stormwater Pollution Prevention (SWPPP) Plans, Spill Prevention Control and Countermeasures (SPCC) Plans and the company wide drone operator.

## Certifications
OSHA Hazardous Waste Site Operations and Emergency Response Training (40-Hour), 2007.
Response Training (8-Hour refresher) 2008, 2009, 2015
HAZMAT Certification (DOT IATA) 2010, 2016
sUAS Certified 8-2016, re-certified 10-2018.

## Education
A.A.S., Engineering Design Technology
A.A., Liberal Arts
A.A., Technology Management and Training,
Central New Mexico Community College, 2007

## Professional Summary
Mr. Gray serves as Engineering Technician for Gordon Environmental/PSC. His assignments focus on environmental sampling (groundwater, landfill gas, soils), boring and monitoring well installation, CQA oversight for composite liner installation, and compliance reporting.

## Select Project Experience
***Landfill/Pond Liner CQA, Various Locations:*** Construction Quality Assurance and project oversight for the installation of over 4.7 million square feet of composite liner. Installation includes:

- pre-installation CQA
- subgrade density testing
- sieve analysis testing
- material quality assurance documentation
- installation observation
- repair record keeping.

He provided field CQA assisted with the compilation of the required Engineering Certification Report for various projects around the state. Below are the most recent projects:

- Lea County Landfill Cells 3A and 5
- Final Cover at Roswell Unit II, Clayton and T or C Landfills.
- Valencia Regional Landfill Cell 5B and 6B
- Sundance West Landfill Cells 1A and 2A
- Sundance West Evaporation Ponds 1-10
- OWL Landfill Cell 1A

***Surface Emissions Monitoring and Title V Operating Permit Compliance, Various Locations, New Mexico:*** Technician for field activities associated with the landfill gas collection and control system (GCCS), emissions controls, and fulfilling Title V Operating Permit requirements for two New Mexico Landfills.

***Landfill Gas Monitoring and Control, Various Locations, New Mexico:*** Field representative for methane monitoring as well as health and safety oversight.

***Groundwater/Vadose Zone Monitoring Well Installations, Various Locations, New Mexico:*** Oversight for the installation of numerous exploratory and sample collection wells for groundwater and landfill gas. Performed drilling observation and logging of drill cuttings. Made determinations as to appropriate screen and well installation depths, performed initial post-installation monitoring. Prepared as-built documentation and Summary Reports as needed.

***Groundwater Sampling and Field Parameter Testing, Various Locations, New Mexico:*** Field Technician for groundwater sample collection for monitoring wells at project locations throughout the State of New Mexico. Use of dedicated and submersible pumps driven by air or electricity, as well as hand and mechanical bailers, resulting in a unique familiarity with varying sample collection techniques. Field services include depth to water measurements, optimization of discharge flow rate, recording of field measurements, and preparation of chain-of-custody documentation. Inter- and/or intra-well statistical analyses performed as necessary to fulfill Permit and regulatory requirements.

***Construction oversite of large projects:*** Preparation of sites to include contour generation, working with various contractors, verification and CQA responsibilities for synthetic liner systems. As projects were completed oversaw CQA report generation to the Sate of New Mexico NMED Solid Waste Division or the Oil Concervation Division of the New Mexico Energy Minerals and Natural Resources Division.

***Drone Pilot and Survey Technician, Various Locations, New Mexico and Texas:*** Development of aerial survey program within Gordon/PSC to include ground survey, aerial survey, and processing of data to produce accurate contour mapping of various site including Landfills, Pre-Construction Surveys, Higway Right of Way, and Siting Surveys.

## Additional Professional Training
Nuclear Gauge Safety Training: June 2007,
Refresher 2015
Former A.S.E. Certified Mechanic in Transmissions and Transaxles.
Certified Bell and Howell mailstar inserter operator.

# APPENDIX G

## Resumés

G.5. Andy Yuhas., Engineering Technician, Gordon/PSC Project Technologist

# ANDREW N YUHAS

Engineering Technologist

## Fields of Expertise

GIS, Geology/Sedimentology, Mapping, Geophysics, Remote Sensing, Environmental Sampling and Monitoring, Solid Waste Facility Permitting, Air quality permitting and compliance.

## Training & Certifications

OSHA Hazardous Waste Operations and Emergency Response Training (40-Hour), 5/2011

OSHA Hazardous Waste Operations and Emergency Response Training (8-Hour refresher), 8/2019

US EPA Method 9 Opacity observation, 10/2019

Nuclear Moisture/Density Testing Training: 2005-2019

U.S. DOT HAZMAT Training, 8/2019

## Education

B.S., Geology, University of Montana, 2003 Emphasis in Geophysics, Mapping and Sedimentology

M.S., Earth and Planetary Sciences, University of New Mexico, 2008 Emphasis in Geomorphology, Remote Sensing, and GIS.

## Professional Summary

Mr. Yuhas serves as a Engineering Technologist for Gordon Environmental/PSC. His assignments focus on a wide variety of solid waste issues primarily associated with Regulatory Compliance, Applications for Solid Waste Facility Permits, and Air Quality Operating Permits, and Regulatory compliance. His responsibilities include the preparation of permit applications, groundwater/landfill gas monitoring/reporting, construction quality assurance testing, Landfill Management Plans, NPDES/NSPS permitting and reporting, Greenhouse Gas Reporting, and environmental monitoring/remediation system installation.

## Select Project Experience

***Groundwater Sampling and Field Parameter Testing, Various Locations, New Mexico:*** Field Technician for groundwater sample collection for numerous monitoring wells at multiple project locations throughout the State of New Mexico. Use of dedicated and portable submersible pumps driven by air or electricity, as well as no-purge and low-impact discrete interval sampling, and manual bailing devices, which has resulted in a familiarity with varying sample collection techniques and groundwater conditions. Field duties include well condition inspection, depth to water measurements, optimization of discharge flow rate, recording of field parameters, sample collection, and preparation of chain-of-custody documentation as necessary to fulfill Permit and regulatory requirements. Also responsible for on-site repair and troubleshooting of pumps and controllers.

***Landfill Gas Monitoring and Control, Various Locations, New Mexico:*** Field representative for the monitoring of the presence of landfill gas (LFG) at closed and active landfills throughout the state of New Mexico. Responsibilities include site inspection for surface expression of the presence of LFG, surface expressions of settling, slumping or erosion that has the potential to expose waste on the final cover, and lead to the potential release of LFG off of the landfill site. Also experienced in surface emissions monitoring, installation of passive LFG control systems, and adjustment and maintenance of active gas collection and control systems.

***Solid Waste Facility Permitting, Various Facilities in New Mexico and Nebraska:*** Responsible for proposed facility siting studies and preliminary fatal flaw analyses, permit application creation and editing. Participate in developing permit renewals and modifications for MSW, C&D, OCD, and special waste landfills; as well as MSW transfer stations, recycling centers, and related public notification requirements. Responsibilities include regulatory agency communications, research, site visits, and site mapping.

***40 CFR Part 70 (Title V) Operating Permit Renewals and Modifications:*** Writing and submittal of Operating Permit renewal/modifications for the Sandoval County, Camino Real, and San Juan County Regional landfills; and operating permit modifications for three regional landfills to incorporate equipment painting and increased petroleum contaminated soils remediation operations. Responsibilities included emissions calculations, sensitivity analyses, regulatory compliance determination, and pre-application meetings with the NMED Air Quality Bureau.

***Construction Quality Assurance (CQA) for landfill cell construction and liner installation: Lea County Landfill, Lea County, New Mexico and Valencia Regional Landfill. Valencia County, NM:*** Perform field activities associated with cell construction and subgrade preparation, GCL and HDPE Liner installation in Lea County Landfill Cell 4 (12-acres), Valencia Regional Landfill Cell 5A (7.2-acres), and the Sandoval County Landfill Cell 5B (5.8-acres). Responsible for density compliance testing of the subgrade, liner installation destructive and non-destructive test management and recording, and preparation of daily activity logs.

# APPENDIX G

## Resumés

G.6. Diego Ramirez, Gordon/PSC, Project Technologist

# DIEGO Y. RAMIREZ
Engineering Technician

## Fields of Expertise
Groundwater monitoring; site characterization and plan development; construction observation; geosynthetic liner applications and testing; field sampling; quality assurance and quality control; physical property testing; field analysis.

## Certifications
HAZMAT Certification (DOT IATA) 2019

## Education
Bachelors of Science Environmental Engineering
Texas Tech University, 2019
Master of Science Environmental Engineering
Texas Tech University, 2019

## Professional Summary
Mr. Ramirez serves as a Project Engineer for Gordon Environmental/PSC. His assignments focus on environmental sampling (groundwater, landfill gas, soils), boring and monitoring well installation, CQA oversight for composite liner installation, and compliance reporting.

## Select Project Experience

***Groundwater Sampling and Field Parameter Testing, Various Locations, New Mexico:*** Field Technician for groundwater sample collection for monitoring wells at project locations throughout the State of New Mexico. Use of dedicated and submersible pumps driven by air or electricity, as well as hand and mechanical bailers, resulting in a unique familiarity with varying sample collection techniques. Field services include depth to water measurements, optimization of discharge flow rate, recording of field measurements, and preparation of chain-of-custody documentation. Inter- and/or intra-well statistical analyses performed as necessary to fulfill Permit and regulatory requirements.

***Surface Emissions Monitoring and Title V Operating Permit Compliance, Various Locations, New Mexico:*** Technician for field activities associated with the landfill gas collection and control system (GCCS), emissions controls, and fulfilling Title V Operating Permit requirements for two New Mexico Landfills.

***Solid Waste Facility Permitting, Multiple Facilities in New Mexico:*** Participate in developing permit, permit renewals, and permit modifications for municipal solid waste, construction & demolition, and special waste landfills. Responsibilities include calculations demonstrating compliance with NMED regulations (i.e., erosion control, slope stability, tensile stresses), regulatory agency communications, research, and site visits.

***Landfill Gas Monitoring and Control, Various Locations, New Mexico:*** Field representative for methane monitoring as well as health and safety oversight.