ENGINEERING FOR A BETTER WORLD
FEEZOR
ENGINEERING, INC.

BRIDGETON LANDFILL, LLC.

PHASE 1 NORTH QUARRY EVOH COVER SYSTEM

CONSTRUCTION QUALITY ASSURANCE ACCEPTANCE REPORT

BRIDGETON, ST. LOUIS COUNTY, MISSOURI

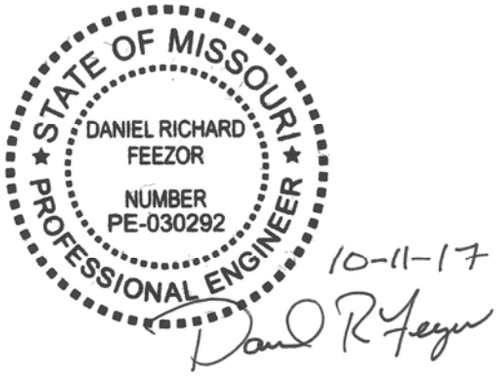
Prepared For:

Bridgeton Landfill, LLC.
13570 St. Charles Rock Road
Bridgeton, MO 63044

October 2017

Prepared By:

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044



BRIDGETON LANDFILL, LLC

CONSTRUCTION QUALITY ASSURANCE ACCEPTANCE REPORT

PHASE 1
NORTH QUARRY EVOH COVER SYSTEM

BRIDGETON, ST. LOUIS COUNTY, MISSOURI

Prepared for:

Bridgeton Landfill, LLC

October 2017

Prepared by:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Project No.: BT-125

CONTENTS

LIST OF APPENDICES AND SUB-APPENDICES

1 INTRODUCTION

1.1 Overview of Project

During the late 2016 and 2017 construction season, Bridgeton Landfill, LLC (BLL) initiated and completed construction of Phase 1 North Quarry Ethylene Vinyl Alcohol (EVOH) Cover System. This report documents the construction of the EVOH Cover System Components, and provides the as-built record drawings, all sealed by a Missouri Registered Professional Engineer. Construction of the North Quarry EVOH Cover System was in general conformance with the October 2016 EVOH Cover System Work Plan developed by Cornerstone Environmental of Farmington Hills, MI.

Bridgeton Landfill, LLC retained Feezor Engineering, Inc. (FEI) of Bridgeton, MO to provide Construction Quality Assurance (CQA) services for the construction of the Phase 1 EVOH Cover System. Bridgeton Landfill, LLC also selected American Environmental Group, LTD (AEG) of Richfield, OH and Fusion Solutions, Inc. (FSI) of Carlinville, IL to construct / install the components of Phase 1 North Quarry EVOH Cover System including:

- General fill,
- Subsurface collection systems and cushioning geotextiles,
- EVOH liner installations,
- Cushion geocomposite road construction,
- Storm water drainage systems, and
- Landfill gas, leachate, and air supply piping.

1.2 Background

The North Quarry EVOH Work Plan was prepared in accordance with Section 35b of the Administrative Settlement Agreement and Order on Consent (AOC) between the U.S. Environmental Protection Agency (U.S. EPA) and Bridgeton Landfill, LLC, dated April 28, 2016. Section 35b of the AOC requires: Within 60 days of the Effective Date, Respondent shall submit to EPA and MDNR for review and approval a Work Plan for the placement of an EVOH Cover over the North Quarry. The Work Plan shall include the steps and associated timeframes necessary to install the EVOH Cover. Consistent with an EPA approved Work Plan, installation of the EVOH Cover shall proceed to be placed over the North Quarry, starting from the location of the existing EVOH Cover moving north such that the EVOH is continuous up to and covering a line of existing TMPs including TMP-16, 17, 18, 21, 22, 23, 25, 27, 28 and 29. The Work Plan shall also describe measures for operations and maintenance of the EVOH Cover.

The North Quarry EVOH Work Plan was approved by the U.S. EPA on October 19, 2016 and the final draft was submitted to the U.S. EPA on October 24, 2016. The U.S. EPA approved the final submitted North Quarry EVOH Work Plan on November 4, 2016.

The Phase 1 EVOH work completed the EVOH installation on a portion previously described as Phase 1A and Phase 1B (now considered one phase – i.e. Phase 1). The Phase 1A boundary was based on the AOC issued by U.S. EPA dated April 28, 2016. The Phase 1B EVOH cover boundary was based on the ridgeline of the North Quarry and captured the area on the south side of the ridgeline and outside of the area that could be affected by a potential thermal isolation barrier.

2 SUBGRADE PREPARATION

2.1 Soil Fill and Infrastructure Modifications

Before commencement of the installation of the geosynthetic portions of this project, subgrade amendments were made. Vertical landfill gas and liquid removal infrastructure heights were adjusted accordingly to accommodate proposed fill soils. This work was performed by FSI prior to the initiation of fill operations. Next vegetation was stripped from the proposed project area. Following the removal of vegetation, fill soil was placed in accordance with the proposed grades in the project work plan developed by Cornerstone. This fill was placed to allow for the proper shedding of storm water that came into contact with the project area to the storm water controls. Upon completion of the placement of fill soils, FSI removed any rocks or foreign debris that could potentially damage the geosynthetics. A representation of the final project contours can be found on **Drawing 003** in **Appendix F**.

2.2 Strip Drains

After preparation of the sub-base, a series of strip drains were installed in conformance to the locations specified in the project work plan. All strip drains were manufactured by American Wick (identified as model #6012). All drains were installed by AEG and joined using manufacturer's recommendations.

Strip drains that were installed uphill of the previously installed (by others) perimeter toe drain system terminated into the gravel backfill of the toe drain. This liquid will be managed through the perimeter toe drain sumps (PS sumps) already in place. Two separate sumps (CS-1 and CS-2) were installed at the toe of the slope to handle liquids that are collected by strip drains downhill of the perimeter toe drain. Four-inch risers were also installed at proposed locations if BLL decides in the future to utilize the strip drains as gas extraction locations. Locations of strip drains, strip drain risers and liquid extraction sumps CS-1 and CS-2 are depicted on **Drawing 004** in **Appendix F**.

2.3 Geocomposite Road Underlay

Prior to the installation of the non-woven geotextile cushion fabric, a surveyor laid out the proposed locations of the access roads that were proposed to be installed on top of the finished geosynthetic liner system in conformance with the Cornerstone work plan. AEG then installed a 220-mil double-sided geocomposite with 6-ounce per square yard non-woven geotextile backing in the locations of the proposed access roads. This material was joined together by affixing the inside geogrid using cable ties. After the geogrid of adjacent panels were joined, the geotextile on the edge of panels was continuously sewn together in accordance with the CQA Plan contained within the work plan. Following installation, a surveyor performed a record survey of the geocomposite to ensure that any slight

deviations were modified in the final roads on top of the geomembrane. Results of manufacturer's quality control testing for the double-sided geocomposite can be found in **Appendix B.3**.

2.4 Non-Woven Cushion Fabric

A combination of 6-ounce per square yard and 8-ounce per square yard non-woven cushion geotextile material was acquired from SKAPS Industries. AEG deployed this material over the entirety of the project area to be covered with the EVOH geomembrane material. This material was deployed by a skid steer with a spreader bar. All adjacent panels of cushion geotextile were overlapped a minimum of six-inches. After the material was deployed and overlapped, it was seamed together by a heat tacking method with a Leister hot air tool. Results of manufacturer's quality control testing for the non-woven cushion geotextile can be found in **Appendix B.2**.

3 FLEXIBLE MEMBRANE LINER INSTALLATION

3.1 Pre - Installation Activities

Once the sub-base was prepared, strip drain system installed, cushion geotextile placed and the geocomposite road underlayment was installed, activities commenced to prepare for the installation of the 50-mil EVOH geomembrane. A subgrade acceptance form was jointly completed by FEI and AEG for the project area state the subgrade was suitable to the engineer and installer's representative for geomembrane placement. Subgrade Acceptance Forms may be found in **Appendix C.1**.

3.2 Flexible Membrane Liner Properties

The installed material consists of 50-mil Ethylene Vinyl Alcohol (EVOH) geomembrane. Raven Industries (Raven) provided manufacturer's certifications and test results for the 50-mil geomembrane which are included in **Appendix B.1**.

3.2.1 Quality Control Testing

All rolls of EVOH geomembrane supplied for this project by Raven were CQA tested in the manufacturing facility. The rolls were evaluated for tensile characteristics that included stress at break and elongation at break. Additional testing performed included average thickness and asperity height along with tear and puncture resistance. Lastly, material was tested at a frequency of once per every 200,000 pounds for standard oxidative induction time. The reported values of each roll tested exceed the requirements of the CQA Plan. The test methods, minimum values and testing frequency conform with that established in the CQA Plan included within the project work plan.

3.3 Product Delivery, Storage, and Handling

Flexible membrane liner (FML) rolls were delivered on site by tractor-trailer. The rolls were stacked three high on a level dry surface west of the working area. Each roll's identification number, roll number, and dimensions were documented.

3.4 Installation Procedures

3.4.1 Deployment

AEG installed all FML panels. Rolls were supported by a spreader bar attached to skid steer and were deployed by AEG employees across the length of the closure area. Panels were placed in a manner that minimized seams. Unbound edges of the FML panels were temporarily loaded with sandbags prior to seaming.

As it was deployed, each panel was assigned a unique field identification number by FEI. The FML was continuously examined for damage and manufacturing defects beginning with placement on the subgrade through the completion of the project. Observed defects were marked by FEI and repaired by AEG. The panel placement diagram showing liner panels and repairs is included on the construction record drawings on **Drawing 005** in **Appendix F**.

3.4.2 Seaming Procedures

3.4.2.1 Trial Welds

Prior to field seaming, trial weld samples were prepared and tested in the field using a field tensiometer to qualify welders for seaming activities. The tensiometer calibration certificate is included in **Appendix C.3**. Trial weld samples were made from excess FML and were prepared using the same procedures and under the same conditions the welder expected during field welding. Three 1-inch samples were tested for peel and three 1-inch samples were tested for shear. FEI personnel observed the trial weld preparation and testing. The minimum strength criterion required for peel testing was 60 pounds per inch (ppi) for fusion and 52 ppi for extrusion welds. For shear testing, the minimum strength criterion was 80 ppi for both fusion and extrusion welds. The failure mode was required to be a film tear bond or a partial adhesion failure as described in section 6.1 and Table 1(a) of The Geosynthetics Research Institute specification GM-19 and the welds were to show no more than 25% delamination into the weld. A failure mode of Separation in Plane (SIP) is also deemed acceptable in accordance with literature from the Manufacturer and the CQA Plan contained within the work plan.

If all samples passed these criteria, the equipment and operator were allowed to proceed. If a sample failed, the reason for failure was investigated and a new sample was prepared and tested. This process was performed at the start of the day, after lunch, after extended delays without seaming and after any equipment shutdowns.

The various procedures associated with both fusion and extrusion seaming operations were observed by FEI. These observations included: seam preparation, weather conditions, general seaming procedures, overlap of geomembrane panels, and temporary bonding procedures. Seams were monitored throughout their length for quality and seam completion. Visually detected imperfections were marked by FEI and subsequently repaired by AEG. Panel placement and seaming records are presented in **Appendix C.2** and **Appendix C.5**, respectively. Results of trial weld testing are presented in **Appendix C.4**.

3.4.2.2 Fusion Welding Procedures

Most production seams were made using a dual hot wedge fusion welder (commonly called a “mouse” or “wedge”). The unit heated the two overlapped panels above the geomembrane’s melting point. The panels then passed through a set of preset pressure wheels that compress the two panels together to form a weld. This device created an air

channel between the fused seams that was pressurized with air and non-destructively tested throughout the welds entire length.

3.4.2.3 Extrusion Welding Procedures

Repairs, patches and other necessary areas were performed with an extrusion welder. The unit introduced a bead of molten resin along the edge of the seam of the two FML sheets were welded. The top sheet was heat-tacked down to the bottom sheet and was ground with an abrasive disk immediately prior to the extrusion process. The continuity of the extrusion welds were non-destructively verified by vacuum testing at all locations except where the liner was welded to penetrations. At those locations, welds were inspected visually.

3.4.3 Defects and Repairs

Flexible membrane liner panels were monitored for damage during deployment. Additionally, FEI personnel observed the FML panels and seams on an on-going basis throughout the installation process until the completion of the project.

Each repair was documented by FEI and repaired by AEG. Repairs were made by seaming a piece of geomembrane over the affected area with an extrusion-welding machine. All patches exceeded damaged areas by a minimum of 6 inches. Extrusion welded repairs were non-destructively tested using a vacuum box apparatus.

The vacuum box testing process consisted of placing a sealed box with a glass cover for viewing over a seam that had been bathed with a water / soap solution. The vacuum box was energized and created a vacuum of 5 psi for 10-15 seconds. If no air bubbles were observed coming from the seam, the test was considered to be a passing test. Documentation of FML repairs and testing is included in **Appendix C.8**.

3.5 Construction Quality Assurance

3.5.1 Oversight

All production and repair fusion and extrusion welds completed by AEG personnel were 100 percent non-destructively tested by either vacuum box or air channel testing in addition to regular destructive test samples along seams.

3.5.2 Testing

3.5.2.1 Non-Destructive testing

Non-destructive testing of geomembrane liner seams consisted of air channel pressure testing or vacuum testing. Extrusion welded repairs were vacuum tested and double wedge seams were air-pressure tested. Seams and repairs failing non-destructive testing were repaired and retested until passing results were obtained.

Air channel testing consisted of pressurizing the channels between the double wedge seams with air to a minimum pressure of 30 pounds per square inch (psi). The channels were kept pressurized for a minimum of 5 minutes. Passing tests were those with no more than a 3-psi drop over the 5-minute period. Results of non-destructive testing of FML seams are presented in **Appendix C.6**.

3.5.2.2 Destructive testing

Destructive geomembrane seam samples were obtained at a minimum frequency of one per 500 linear feet of seam. Destructive seam testing was performed at TRI/Environmental Laboratory. The pass / fail criteria were as follows:

Peel Adhesion (ASTM D6392)

- Four out of the five-test specimens meet the strength requirements discussed in section 3.4.2.1.

- Failure mode is a film-tear bond or partial adhesion failure as described in section 6.1 and Table 1(a) of the GRI specification GM-19 and the welds were to show no more than 25% separation into the weld. A failure mode of Separation in Plane (SIP) is also deemed acceptable in accordance with literature from the Manufacturer and the CQA Plan contained within the work plan.

Shear Strength (ASTM D 6392)

- Four out of the five-test specimens meet the strength requirements discussed in section 3.4.2.1.

- Failure mode is a film-tear bond or partial adhesion failure as described in section 6.1 and Table 1(a) of the GRI specification GM-19 and the welds were to show no more than 25% separation into the weld.

Destructive samples were obtained and were labeled. A summary log of destructive samples is presented in **Appendix C.7.1**. Results of laboratory testing of destructive seam samples are included as **Appendix C.7.2**.

A memorandum concerning the bounding of failed destructive samples is presented in **Appendix C.7.3**.

4 ACCESS ROAD CONSTRUCTION

4.1 Access Road Construction Methods

4.1.1 Geocomposite Cushion Layer

As described above in section 2.4, a 220-mil double sided geocomposite with 6-ounce per square yard non-woven geotextile back was installed below and above the EVOH geomembrane and the locations of proposed access roads. Prior to installation, a FEI surveyor laid out the locations of the previously installed road underlayment geocomposite that was installed below the EVOH geomembrane. Then material was installed with a 4-inch overlap along long seams and a 12-inch overlap on short seams. This material was joined together by affixing the inside geogrid using cable ties. After the geogrid of adjacent panels were jointed, the geotextile on the edge of panels was continuously sewn together. Results of manufacturer's quality control testing for the double-sided geocomposite can be found in **Appendix B.3**.

4.1.2 Access Road Construction

Following installation of the geocomposite cushion layer, gravel access roads were installed in conformance to the approved work plan. AEG proceeded to install the aggregate for the access road. This consisted of placing an 18-inch layer of 2-inch to 4-inch of crushed limestone topped by a 6-inch layer of MODOT type V dense graded aggregate. Locations of installed access roads are depicted on **Drawing 006** of **Appendix F**.

5 LANDFILL GAS AND LIQUIDS RECOVERY INFRASTRUCTURE

5.1 Landfill Gas and Liquids Recovery Infrastructure

Following installation of the geosynthetic liner system, reconfiguration of the project area's landfill gas and liquids recovery infrastructure was performed by AEG.

5.1.1 Landfill Gas Collection

Four header access risers were installed in the existing North Quarry perimeter landfill gas header to bring vacuum above ground. From these locations, landfill gas collection headers and laterals were installed above-ground to provide vacuum to the wells within the project area. This installation included:

- Approximately 410 feet of 4-inch diameter landfill gas collection piping,
- Approximately 1,870 feet of 6-inch diameter landfill gas collection piping,
- Approximately 230 feet of 8-inch diameter landfill gas collection piping,
- Approximately 1,870 feet of 12-inch diameter landfill gas collection piping, and
- Approximately 13 feet of 18-inch diameter landfill gas collection piping.

All gas collection piping was constructed of high density polyethylene (HDPE) pipe made from PE 3408 resin meeting ASTM D3350 requirements. All pipe materials were field inspected to verify conformance with design plans. HDPE pipe was joined by butt fusion methods according to standard procedures and manufacturer's recommendations. Gas collection piping was installed in the locations and to the required lines and grades as shown on **Drawing 006** of **Appendix F**.

5.1.2 Liquids Recovery and Conveyance

In addition to the installation of landfill gas conveyance infrastructure, liquids (leachate and condensate) recovery piping infrastructure was also installed at the locations depicted on **Drawing 006** of **Appendix F**. A 3-inch by 6-inch dual-contained HDPE forcemain was constructed and installed to various liquid extraction points (wells, sumps, etc.) within the North Quarry. This infrastructure facilitates the removal of liquids and their conveyance to the onsite leachate pre-treatment system. In addition to the installation of the liquid forcemain, air supply piping was installed within the project footprint to provide compressed air to extraction pumps that are utilized throughout the project area. This installation included:

- Approximately 6,735 feet of 3-inch x 6-inch dual-contained forcemain, and
- Approximately 4,515 feet of 2-inch air supply piping.

All liquids recovery piping was constructed of HDPE pipe made from PE 3408 resin meeting ASTM D3350 requirements. All pipe materials were field inspected to verify conformance

with design plans. HDPE pipe was joined by butt fusion methods according to standard procedures and manufacturer's recommendations.

5.2 Construction Quality Assurance

5.2.1 Construction Oversight

The CQA representative inspected all materials for the landfill gas collection and liquids recovery systems. This included piping, valves and fittings to ensure that these materials were acceptable and consistent with construction plans. The CQA representative inspected the materials to be constructed of HDPE pipe to determine if the materials met the following requirements:

- All HDPE pipe was new, or first quality, and was furnished at lengths as indicated on the approved design plans. All HDPE piping was straight throughout its length and free from imperfections.

- The HDPE pipe and fittings had a minimum Standard Dimension Ratio (SDR) as noted on the design plans.

During installation of the landfill gas collection and liquids recovery systems, the CQA representative ensured that the construction adhered to the plans and specifications. This included:

- Pipe and appurtenances were installed true to line, grade and location with the pipe supported and restrained against movement with all valve stems plumb.

- The pipe joints, except where flanged were butt fused as recommended by the pipe manufacturer. All shavings from the preparation of pipe ends for fusion were removed from the pipe prior to installation.

5.2.2 Testing

Field-testing of the landfill gas collection and liquids recovery systems consisted of pressure testing system infrastructure in accordance with the Republic Services SOP. The pressure testing was performed by AEG and documented by FEI.

The pressure testing was performed after completion of a portion of the piping system. All pressure testing for landfill gas collection and liquid forcemain systems was conducted at a minimum of 10 psig as well as the containment piping for the liquid forcemain system. Carrier piping for the liquid forcemain system and air supply piping testing was conducted at a minimum of 100 psig. All pressure testing data is included in **Appendix D.2**.

6 STORM WATER MANAGEMENT

6.1 Storm Water Drainage Systems

Storm water management considerations were also included into the Phase 1 EVOH cover system construction. The portion of the project area with drainage to the west utilizes existing storm water management features in the South Quarry and ultimately drains to Outfall #003. A storm water terrace and culvert were constructed at the toe of the south slope of the project area. Drainage from this culvert flows to an existing culvert in the South Quarry which ultimately drains to Outfall #004.

The existing perimeter ditch at the toe of the east slope of the project area was re-graded and lined with EVOH geomembrane. This drainage area covers the vast majority of the project area and ultimately drains to the existing lined retention basin known as Outfall #006. Two culverts were installed to convey storm water from the ditch to the retention basin with gate valves installed to allow for control of the release of storm water if necessary.

A storm water letdown was installed at the northeast corner of the project area that receives runoff from two storm water terraces on the north slope of the North Quarry. Storm water from this letdown is ultimately discharged through Oufall #006.

7 CERTIFICATION

I, Daniel R. Feezor, P.E., do hereby certify to my best knowledge and belief that the Phase 1 North Quarry EVOH Cover System was constructed in accordance with Cornerstone Environmental's approved EVOH Cover System Work Plan dated October 19, 2016 and the CQA Plan included within.

APPENDIX A

DAILY FIELD SUMMARY REPORTS

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	11/21/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	1
Weather:	AM P. Cloudy	PM P. Cloudy	
Temperature:	AM 26	PM 49	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0730 – I arrived on site.
0800 – Pre-Construction Meeting held with Nick Bauer (BLL EM), Mike Lambrich (BLL Site Manager), Matt Cunningham (Fusion PM), Arron Weber (FEI) and myself. We discussed project scope and schedule. After the initial discussion, we performed a walkthrough of the project area. Existing infrastructure needing to be relocated prior and during grading activaties were identified. BLL also requested FEI layout the project boundary and cut/fill stakes in preparation for grading activities to begin later this week or beginning of next depending on weather conditions.
1030 – Walkthrough Complete.
1045 – Arron Weber and I are performing initial project stake out.
1200 – Lunch
1230 – Layout work continues.
1400 – FEI completed initial stakeout.

Copies To: Dan Feezor, Erin Fanning

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	11/29/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	2

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	44	PM	63

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0800 – Fusion arrives onsite and moves their trailer into the work area.
0900 – Fusion begins moving concrete blocks and other materials from the grading area.
1300 – Fusion leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	11/30/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	3

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	34	PM	46

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion arrives onsite and prepares to begin hauling in grading layer soil.
0745 – Fusion begins hauling and placement of grading layer soil in the Phase 1A cap area. Komatsu PC300 Excavator is loading a single Komatsu HM300 haul truck with soil material from stockpile north of the construction area. Material is being hauled and unloaded in the Phase 1A area. CAT D6N w/ GPS is grading placed material to subgrade elevations.
Existing landfill leachate forcemain and airline piping in the current work area are being removed this morning. Piping will be replaced after grading activities are completed for the day. All GCCS piping is remaining active during the project.
These processes are ongoing.
1200 - Lunch
1300 – Work Resumes with same process as morning
1615 – Fusion begins reconnecting infrastructure removed this morning to allow for grading activities.
1700 – Fusion has reconnected all infrastructure items. Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	12/1/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	4

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	31	PM	45

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion continues hauling and placement of grading layer soil in the Phase 1A cap area. Komatsu PC300 Excavator is loading a single Komatsu HM300 haul truck with soil material from stockpile north of the construction area. Material is being hauled and unloaded in the Phase 1A area. CAT D6N w/ GPS is grading placed material to subgrade elevations.
Existing landfill leachate forcemain and airline piping in the current work area are being removed this morning. Piping will be replaced after grading activities are completed for the day. All GCCS piping is remaining active during the project.
These processes are ongoing.
1030 – KB electrician is on site to review the electrical and control connections to LCS-5A. Existing control building will be relocated just outside of the Phase 1A area until EVOH Cap is completed. Temporary power and control wire will be ran to allow LCS-5A to remain active throughout the construction project.
1200 - Lunch
1300 – Work Resumes with same process as morning
1615 – Fusion is reconnecting infrastructure removed this morning to allow for grading activities.
1700 – Fusion has reconnected all infrastructure items. Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	12/2/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	5

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	27	PM	48

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion continues hauling and placement of grading layer soil in the Phase 1A cap area. Komatsu PC300 Excavator is loading a single Komatsu HM300 haul truck with soil material from stockpile north of the construction area. Material is being hauled and unloaded in the Phase 1A area. CAT D6N w/ GPS is grading placed material to subgrade elevations.
Existing landfill leachate forcemain and airline piping in the current work area are being removed this morning. Piping will be replaced after grading activities are completed for the day. All GCCS piping is remaining active during the project.
These processes are ongoing.
0815 – KB electricians is onsite to remove the electrical and control connections to LCS-5A. Once power and control is disconnected, Fusion will relocate the existing control building just outside of the Phase 1A area.
0845 – Fusion has relocated the control building for LCS-5A. Temporary power and control wire is being ran inside separate PVC conduit.
1015 – KB Electric has reconnected the power and control to LCS-5A and it is back online.
1200 - Lunch
1300 – Work Resumes with same process as morning
1615 – Fusion is reconnecting infrastructure removed this morning to allow for grading activities.
1700 – Fusion has reconnected all infrastructure items. Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	12/3/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	6

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	31	PM	44

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion continues hauling and placement of grading layer soil in the Phase 1A cap area. Komatsu PC300 Excavator is loading a single Komatsu HM300 haul truck with soil material from stock pile north of the construction area. Material is being hauled and unloaded in the Phase 1A area. CAT D6N w/ GPS is grading placed material to subgrade elevations.
Existing landfill leachate forcemain and airline piping in the current work area are being removed this morning. Piping will be replaced after grading activities are completed for the day. All GCCS piping is remaining active during the project.
These processes are ongoing.
1015 – FEI is performing survey layout of eastern ditch.
1200 - Lunch
1300 – Work Resumes with same process as morning
1515 – Fusion is reconnecting infrastructure removed this morning to allow for grading activities.
1600 – Fusion has reconnected all infrastructure items. Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	12/6/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	7

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	32	PM	43

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion continues hauling and placement of grading layer soil in the Phase 1A cap area. Komatsu PC300 Excavator is loading a single Komatsu HM300 haul truck with soil material from stock pile north of the construction area. Material is being hauled and unloaded in the Phase 1A area. CAT D6N w/ GPS is grading placed material to subgrade elevations.
Existing landfill leachate forcemain and airline piping in the current work area are being removed this morning. Piping will be replaced after grading activities are completed for the day. All GCCS piping is remaining active during the project. Two workers from fusion begin adding extensions onto wells.
These processes are ongoing.
1200 - Lunch
1300 – Work Resumes with same process as morning. Paynecrest arrives onsite and examines a TMP to determine the best method for raising it above the proposed grade.
1400 – Fusion finished raising their second well and begins capping the underground air and force main lines at the PEWs.
1515 – Fusion begins reconnecting infrastructure removed this morning to allow for grading activities.
1600 – Fusion has reconnected all infrastructure items. Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1A	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	12/7/2016
Contractor(s):	Fusion Solution Inc.	**Report No.:**	8

Weather:	AM	P. Cloudy	PM	P. Cloudy
Temperature:	AM	32	PM	43

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion continues hauling and placement of rock for the drainage trench.
1100 – Fusion continues hauling and placement of grading layer soil in the Phase 1A cap area. Komat su PC300 Excavator is loading a single Komatsu HM300 haul truck with soil material from stockpile north of the construction area. Material is being hauled and unloaded in the Phase 1A area. CAT D6N w/ GPS is grading placed material to subgrade elevations.
Existing landfill leachate forcemain and airline piping in the current work area are being removed this morning. Piping will be replaced after grading activities are completed for the day. All GCCS piping is remaining active during the project. Two workers from fusion begin adding extensions onto wells.
These processes are ongoing.
1200 - Lunch
1400 – I begin south ditch stakeout. Fusion has raised 3 wells and begins to cap more of the underground air and forcemain lines.
1600 - Fusion begins reconnecting infrastructure removed this morning to allow for grading activities
1700 – Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	03/20/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	9

Weather:	AM	P. Cloudy	PM	Sunny
Temperature:	AM	50	PM	86

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion is onsite with 6 workers, equipment onsite is a Cat 315D Excavator, a Komatsu HM300 Haul Truck, a Cat 330C Excavator, a Cat D6n GPS Dozer, a TakeuchiTL240 Skid steer, and various fusion welding equipment. They begin to strip the vegetation off of the Phase 1B area, and to cut and cap abandoned infrastructure below grade.
1200 - Lunch
1300 – Fusion resumes previous activities
1700 – Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	03/21/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	10

Weather:	AM	P. Cloudy	PM	P. Sunny
Temperature:	AM	45	PM	66

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion is onsite with 6 workers, equipment onsite is a Cat 315D Excavator, a Komatsu HM300 Haul Truck, a Cat 330C Excavator, a Cat D6N GPS Dozer, a Takeuchi TL240 Skid steer, and various fusion welding equipment. They continue to strip and grade Phase 1B, using soil from the North Quarry stockpile, they also begin to remove the rock pads used for the TMP installations.
1200 - Lunch
1300 – Fusion resumes previous activities
1700 – Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	03/22/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	11

Weather:	AM	P. Cloudy	PM	P. Sunny
Temperature:	AM	36	PM	52

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion is onsite with 6 workers, equipment onsite is a Cat 315D Excavator, a Komatsu HM300 Haul Truck, a Cat 330C Excavator, a Cat D6N GPS Dozer, a Takeuchi TL240 Skid steer, and various fusion welding equipment. They continue to grade Phase 1B, using soil from the North Quarry stock pile, they also continue to cut and cap abandoned infrastructure below the subgrade.
1200 - Lunch
1300 – Fusion resumes previous activities
1430 – The North Quarry stockpile is depleted and Fusion begins to haul soil from the Borrow Area to continue grading.
1700 – Left site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	03/23/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	12

Weather:	AM	P. Cloudy	PM	Showers
Temperature:	AM	39	PM	62

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion is onsite with 6 workers, equipment onsite is a Cat 315D Excavator, a Komatsu HM300 Haul Truck, a Cat 330C Excavator, a Cat D6N GPS Dozer, a Takeuchi TL240 Skid steer, and various fusion welding equipment. They continue to grade Phase 1B, using soil from the North Quarry stock pile, they also continue to cut and cap abandoned infrastructure below the subgrade.
1200 – Fusion Leaves the site due to rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	03/24/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	13

Weather:	AM	P. Cloudy	PM	Sunny
Temperature:	AM	54	PM	81

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – I arrived on site.
0700 – Fusion is onsite with 6 workers, equipment onsite is a Cat 315D Excavator, a Komatsu HM300 Haul Truck, a Cat 330C Excavator, a Cat D6N GPS Dozer, a Takeuchi TL240 Skid steer, and various fusion welding equipment. They continue to grade Phase 1B, using soil from the North Quarry stock pile, they also continue to cut and cap abandoned infrastructure below the subgrade.
1200 - Lunch
1300 – Fusion resumes previous activities
1700 – Fusion leaves the site for day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	03/27/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	14

Weather:	AM	Rain	PM	Rain
Temperature:	AM	52	PM	58

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

No work from 3/27/17 thru 4/9/17 due to continuing rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/10/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	15

Weather:	AM	Showers	PM	Showers
Temperature:	AM	58	PM	81

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 2 workers, they begin to relocate pipe onto the PS trench so the surrounding area can be graded.
1200 – Lunch
1300 – Fusion begins to strip Phase 1B.
1600 – Fusion Left the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/11/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	16

Weather:	AM	Cloudy	PM	Cloudy
Temperature:	AM	48	PM	62

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 2 workers, they continue to strip Phase 1B
1100 – Fusion begins to add rock to the PS trench to bring it up to grade.
1200 – They begin to remove soil below the PS trench to bring it to grade and blend it in around the PS trench.
1500 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/12/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	17
Weather:	AM P Sunny	PM P Sunny	
Temperature:	AM 45	PM 73	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 2 workers, they begin removal of the 3 culverts feeding into the retention pond from the Phase 1B ditch.
1200 – Lunch
1600 – Fusion leaves the site for the day, all 3 culverts were removed.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/13/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	18

Weather:	AM	P Sunny	PM	Sunny
Temperature:	AM	54	PM	84

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite, they begin to cut out the east ditch for phase 1B.
1200 – Lunch
1400 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/14/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	19

Weather:	AM	P Sunny	PM	P Sunny
Temperature:	AM	65	PM	85

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite, they continue to cut out the east ditch for phase 1B.
1200 – Lunch
1400 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/17/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	20

Weather:	AM	P Sunny	PM	P Sunny
Temperature:	AM	54	PM	71

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 3 workers, they continue excavation of the south ditch for phase 1B.
1200 – Lunch
1300 – Fusion begins to haul in dirt for the Phase 1B down chute from the borrow area.
1600 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/18/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	21

Weather:	AM	P Sunny	PM	P Sunny
Temperature:	AM	52	PM	79

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 2 workers, they continue to bring in dirt for the down chute and construct it according to design.
1200 – Lunch
1600 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/19/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	22

Weather:	AM	P Sunny	PM	Sunny
Temperature:	AM	65	PM	88

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 2 workers, they continue construction of the down chute.
0900 – Fusion begins construction of the berm below the down chute
1200 – Lunch
1300 – Fusion begins to fill in additional areas within the project footprint.
1600 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/20/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	23

Weather:	AM	P Sunny	PM	Sunny
Temperature:	AM	58	PM	83

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite, they continue adding fill and grading within the project area with a CAT D6N w/ GPS.
1200 – Lunch
1600 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/21/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	24

Weather:	AM	Rain	PM	Rain
Temperature:	AM	52	PM	58

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

No work from today due to rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/24/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	25
Weather:	AM P Sunny	PM P Sunny	
Temperature:	AM 44	PM 77	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite. They begin to clean up Phase 1A from the rain and begin to construct a catchall around the culvert at the southeast corner of phase 1A that was added to the design.
1200 – Lunch
1300 – Fusion begins remove the rock road through the fill area and haul in dirt
1700 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/25/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	26

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	58	PM	82

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite with 2 workers. They continue removing rock from the primary access road and replacing with fill soils and grade.
1200 – Lunch
1700 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/26/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	27
Weather:	AM Rain	PM Rain	
Temperature:	AM 50	PM 72	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – Fusion is onsite. The continue the removal of rock from the primary access road over the top of the north quarry. They continue replacing the rock will fill soil and grading. They are also checking and re-establishing any necessary erosion control devices for the forecasted rain.
1200 – Lunch
1600 – Fusion leaves the site for the day.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	04/27/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	28

Weather:	AM	Rain	PM	Rain
Temperature:	AM	52	PM	58

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

No work from 4/27/17 thru 4/30/17 due to continuing rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/01/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	29

Weather:	AM	Rain	PM	Rain
Temperature:	AM	49	PM	58

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. They go through the site safety class.
0900 – AEG begins to setup their trailer and get their equipment ready.
1200 – AEG begins to weld together pipe strings.
1700 – AEG demobilizes and plans on returning the 15th after the upcoming forecasted rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/15/2017
Contractor(s):	Fusion Solution Inc.; AEG	**Report No.:**	30

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	62	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. They go through the site safety class. Fusion is onsite, the begin to groom the project area ahead of FML installation.
0900 – AEG begins to setup their trailer and get their equipment ready. They also fill sand bags.
1200 – Lunch
1300 - AEG begins to weld together pipe strings.
1700 – AEG and Fusion leave site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/16/2017
Contractor(s):	AEG	**Report No.:**	31

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	71	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. They begin to clean dirt off the PS trench and stage materials in the work area.
1200 – Lunch
1400 – AEG begins to install strip drains at proposed locations and deploy cushion geotextile in the project area. They also install geocomposite at the locations where proposed roads are to be installed.
1800 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/17/2017
Contractor(s):	AEG	**Report No.:**	32

Weather:	AM	Cloudy	PM	Showers
Temperature:	AM	74	PM	84

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. They begin to deploy liner over the west slope.
1200 – Lunch
1300 – AEG fills sandbags and brings more liner to the work area.
1700 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/18/2017
Contractor(s):	AEG	**Report No.:**	33

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	72	PM	91

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. They continue to deploy liner over the west slope.
1200 – Lunch
1900 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/19/2017
Contractor(s):	Fusion Solution Inc.; AEG	**Report No.:**	34

Weather:	AM	Rain	PM	Rain
Temperature:	AM	58	PM	85

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

No work due to rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/22/2017
Contractor(s):	AEG	**Report No.:**	35

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	54	PM	79

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. They begin to install strip drains, cushion geotextile and road underlayment geocomposite on the next section of the cap. They also begin to deploy geocomposite on top of the previously installed EVOH liner so the main haul road can be put back in place.
1200 – Lunch
1400 – AEG resumes deployment of EVOH geomembrane.
1900 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/23/2017
Contractor(s):	AEG	**Report No.:**	36
Weather:	AM Cloudy	PM ShowRainers	
Temperature:	AM 59	PM 73	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The continue to install strip drains, deploy cushion geotextile and install road road underlayment geocomposite where necessary. Afterwards, they resume the installation of EVOH geomembrane over the west slope. The pipe crew continues fabricating pipe sections.
1030 – AEG shuts due due to rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/24/2017
Contractor(s):	AEG	**Report No.:**	37
Weather:	AM Cloudy	PM Cloudy	
Temperature:	AM 53	PM 71	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The continue installing geocomposite above previously installed liner where the proposed access road is to be installed. Then they begin to deploy liner while their pipe crew begins placing gravel for the construction of the main access road in accordance with the project design.
1200 – Lunch
1900 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/25/2017
Contractor(s):	AEG	**Report No.:**	38

Weather:	AM	Cloudy	PM	Cloudy
Temperature:	AM	55	PM	78

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The pipe crew continues construction of the main access road including the installation of the proposed deflector pipes. The liner crew continues with the installation of EVOH geomembrane.
1200 – Lunch
1900 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/26/2017
Contractor(s):	AEG	**Report No.:**	39

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	63	PM	87

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The pipe crew continues cleanup of the PS trench, while the liner crew deploys more geocomposite above previously installed EVOH geomembrane then resume the installation of EVOH geomembrane.
1200 – Lunch
1900 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1B	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/27/2017
Contractor(s):	Fusion Solution Inc.	**Report No.:**	40

Weather:	AM	Cloudy	PM	Showers
Temperature:	AM	66	PM	84

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The pipe crew continues the construction of the main access road per design while the liner crew works on the west tie in.
1300 - AEG leaves the site due to rain.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/30/2017
Contractor(s):	AEG	**Report No.:**	41

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	60	PM	83

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The pipe crew begins to excavate to install Header Access Riser 3, the liner crew continues work on the west tie in.
1200 – Lunch
1700 – AEG leaves the site.

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Welch

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	North Quarry Phase 1	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	05/31/2017
Contractor(s):	AEG	**Report No.:**	42

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	61	PM	84

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG is onsite. The pipe crew continues building the main access road. The liner crew continues to install EVOH geomembrane.
1200 – Lunch
1800 – AEG leaves the site

Copies To: Dan Feezor, Erin Fanning

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

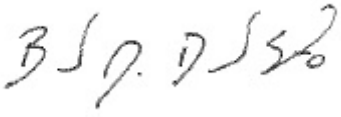
Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/1/2017
Contractor(s):	AEG	**Report No.:**	43

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	70	PM	85

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – Meet Dan at Hollenburg Rd office. Mobilize to the landfill for job detail.
0800 – Complete Bridgeton Landfill safety orientation
0830 – AEG crew is deploying EVOH geomembrane on the slope of the North Quarry to the existing PS trench. Data collection of panel placement, welding, destructs, and non-destructive testing is ongoing. Bridgeton Landfill personnel cut power to the area to allow AEG to work around components in the area.
1200 – Lunch
1230 – Work resumes in the same manner as the morning.
2000 – AEG stops for the day. Approximately 22,576 square feet of liner deployed.

Copies To: Erin Fanning,Dan Feezor

FEI Representative: 

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/2/2017
Contractor(s):	AEG	**Report No.:**	44

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	75	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – Arrive on site.
0700 – AEG crew is continuing liner work on the slope of the North Quarry to the existing PS trench. Extrusion welding to the PS trench is ongoing as well as repairs, air testing, and destructive sampling.
1200 – Lunch
1230 – Work resumes in the same manner as the morning.
1400 – AEG begins to deploy strip drain, cushion geotextile and road underlayment geocomposite on the eastern side of the north quarry in preparation of EVOH liner deployment on 6/3/2017.
1800 – AEG stops for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: BSG DSG

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/3/2017
Contractor(s):	AEG	**Report No.:**	45

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	80	PM	92

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0655 – Arrive on site.
0700 – AEG crew begins to deploy EVOH liner on the south side of the north quarry from the existing PS trench to the future anchor trench. AEG simultaneously commences seeming, and non-destructive testing. Data collection for all activities is ongoing. Marking destructive samples as they become necessary.
1200 – Lunch
1230 – Work resumes in the same manner as the morning.
1800 – AEG stops for the day. Approximately 29,218 square feet of EVOH liner deployed.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: BSG DSG

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/5/2017
Contractor(s):	AEG	**Report No.:**	46

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	70	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG foreman and personnel assess the condition of the work site after overnight rain in the area. AEG foreman determines that the condition of the work area is unsuitable for liner work.
0800 – AEG demobs to allow Site to dry.
0800 – Continue to collect data from previous liner deployment including seaming, non-destruct air tests, repairs, destructive testing.
1500 – Complete collecting liner data at the Site. Demobilize.

Copies To: Erin Fanning, Dan Feezor

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/6/2017
Contractor(s):	AEG	**Report No.:**	47

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	66	PM	82

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0655 – Arrive on site.
0700 – AEG works to deploy strip drains, cushion geotextile and road underlayment geocomposite along the cap of the north quarry.
1200 – AEG takes lunch.
1230 – AEG works to deploy EVOH liner on the cap of the north quarry. Deployment work includes seaming, non-destructive air tests, repairs, destructive sampling.
1800 – Work stops for the day. Approximately 20,102 square feet of liner placed.

Copies To: Erin Fanning, Dan Feezor

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/7/2017
Contractor(s):	AEG	**Report No.:**	48

Weather:	AM	Sunny	PM	Partly Cloudy
Temperature:	AM	64	PM	80

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works to install strip drains, cushion geotextile and road underlayment geocomposite along the cap of the north quarry.
1200 – AEG takes lunch.
1230 – AEG works to deploy EVOH liner on the cap of the north quarry. Deployment work includes seaming, non-destructive air tests, repairs, destructive sampling.
1800 – Work stops for the day. Approximately 21,072 square feet of liner placed.

Copies To: Erin Fanning, Dan Feezor

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/8/2017
Contractor(s):	AEG	**Report No.:**	49

Weather:	AM	P. Cloudy	PM	M. Cloudy
Temperature:	AM	61	PM	83

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0645 – Arrive on site.
0700 – AEG works to install strip drains, cushion geotextile and road underlayment geocomposite along the cap of the north quarry.
1200 – AEG takes lunch.
1230 – AEG works to deploy EVOH liner on the cap of the north quarry. Deployment work includes seaming, non-destructive air tests, repairs, destructive sampling.
1800 – Work stops for the day. Approximately 25,672 square feet of liner placed.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: BJ. DJS

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/9/2017
Contractor(s):	AEG	**Report No.:**	50

Weather:	AM	Clear	PM	Clear
Temperature:	AM	68	PM	88

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0653 – Arrive on site.
0700 – AEG works to install strip drains, cushion geotextile and road underlayment geocomposite along the cap of the north quarry.
1220 – AEG takes lunch.
1250 – AEG works to deploy EVOH liner on the cap of the north quarry. Deployment work includes seaming, non-destructive air tests, repairs, destructive testing.
1830 – Work stops for the day. Approximately 39,592 square feet of liner placed.

Copies To: Erin Fanning, Dan Feezor

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/10/2017
Contractor(s):	AEG	**Report No.:**	51

Weather:	AM	Clear	PM	Clear
Temperature:	AM	71	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0653 – Arrive on site.
0700 – AEG works to install strip drains, cushion geotextile and road underlayment geocomposite as well as EVOH liner along the cap of the north quarry.
1100 – High winds force AEG to stop deploying liner. The AEG crew works to complete detail work such as repairs and tie-ins across the entire North Quarry cap area.
1200 – AEG takes lunch.
1230 – AEG continues detail work in the same manner as before.
1700 – Work stops for the day. Approximately 12,448 square feet of liner placed.

Copies To: Erin Fanning, Dan Feezor

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/12/2017
Contractor(s):	AEG	**Report No.:**	52
Weather:	AM Clear	PM Clear	
Temperature:	AM 72	PM 95	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0653 – Arrive on site.
0700 – AEG works to deploy cushion geotextile and EVOH liner along the cap of the north quarry.
0945 – AEG stops deploying liner to allow for PS trench grading. AEG crew works to complete detail work such as repairs and tie-ins across the entire North Quarry cap area.
1200 – AEG takes lunch.
1230 – AEG continues detail/tie-in work in the same manner as before.
1500 – AEG begins to prep a new area of the North Quarry cap for geotextile placement.
1800 – Work stops for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative:

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/13/2017
Contractor(s):	AEG	**Report No.:**	53

Weather:	AM	Clear	PM	Clear
Temperature:	AM	80	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0653 – Arrive on site.
0700 – AEG works to deploy EVOH liner along the cap of the north quarry to the anchor trench.
1200 – AEG takes lunch.
1230 – AEG continues work in the same manner as before.
1500 – AEG stops the deployment of EVOH and works to install strip drains, cushion geotextile and road underlayment geocomposite on all areas of the North Quarry cap that have exposed subgrade. Additional crew members are working on fusion/extrusion welding the panels placed in the morning and making repairs/air testing.
1800 – Work stops for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: BSG DSG

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/14/2017
Contractor(s):	AEG	**Report No.:**	54

Weather:	AM	P. Cloudy	PM	Rain
Temperature:	AM	80	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works to deploy EVOH liner along the cap of the north quarry to the anchor trench. Additional crew members are working on fusion/extrusion welding the panels and making repairs/air testing.
1130 – AEG preps the work site for rain as storms are entering the area.
1205 – AEG takes lunch.
1315 – Significant rain accumulation has forced AEG to stop work for the day in an effort to allow the storm water to evacuate and evaporate from the work area.
1330 – Demobilize to Hollenberg Rd. office.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: BJ. DJS

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/16/2017
Contractor(s):	AEG	**Report No.:**	55

Weather:	AM	P. Cloudy	PM	Cloudy
Temperature:	AM	74	PM	92

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works on patches to the EVOH liner due to the subgrade being too muddy to deploy liner on. Additional crew members are working on fusion/extrusion welding the panels and making repairs/air testing.
1205 – AEG takes lunch.
1315 –AEG returns and continues repairs.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/19/2017
Contractor(s):	AEG	**Report No.:**	56

Weather:	AM	P. Cloudy	PM	Cloudy
Temperature:	AM	67	PM	88

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works fusion/extrusion welding the panels and making repairs/air testing of previously installed geomembrane.
1205 – AEG takes lunch.
1315 –AEG returns and continues performing detail work on EVOH geomembrane.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/20/2017
Contractor(s):	AEG	**Report No.:**	57

Weather:	AM	P. Cloudy	PM	Sunny
Temperature:	AM	66	PM	92

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG is working on detail work for previously installed EVOH geomembrane due to the subgrade being too wet to deploy.
1205 – AEG takes lunch.
1315 –AEG returns and continues repairs.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/21/2017
Contractor(s):	AEG	**Report No.:**	58

Weather:	AM	Sunny	PM	Cloudy
Temperature:	AM	76	PM	97

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG resumes installation of EVOH geomembrane. All strip drain, cushion geotextile and road underlay ment geocomposite has already been installed.
1205 – AEG takes lunch.
1315 –AEG returns and continues laying out liner.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/22/2017
Contractor(s):	AEG	**Report No.:**	59

Weather:	AM	Sunny	PM	Sunny
Temperature:	AM	76	PM	87

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG continues installation of EVOH geomembrane.
1205 – AEG takes lunch.
1315 –AEG returns and continues installing geomembrane.
1900 – All geomembrane is deployed. AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/23/2017
Contractor(s):	AEG	**Report No.:**	60
Weather:	AM P. Sunny	PM Cloudy	
Temperature:	AM 70	PM 88	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works on extrusion welding repairs on previously installed EVOH geomembrane.
1205 – AEG takes lunch.
1315 –AEG returns and continues performing detail work on previously installed geomembrane.
1800 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/24/2017
Contractor(s):	AEG	**Report No.:**	61
Weather:	AM P. Sunny	PM Cloudy	
Temperature:	AM 64	PM 81	

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works on repairs on previously installed EVOH geomembrane.
1205 – AEG takes lunch.
1315 –AEG returns and continues previous activities.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/26/2017
Contractor(s):	AEG	**Report No.:**	62

Weather:	AM	P. Sunny	PM	Cloudy
Temperature:	AM	58	PM	81

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG continues working on repairs on previously installed geomembrane. AEG pipe crew begins the excavation of the anchor trench along the project boundary.
1205 – AEG takes lunch.
1315 –AEG returns and continues previous activities.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/27/2017
Contractor(s):	AEG	**Report No.:**	63

Weather:	AM	P. Sunny	PM	Cloudy
Temperature:	AM	58	PM	83

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG continues working on repairs to previously installed geomembrane. AEG pipe crew continues the excavation of the anchor trench. After a portion of trench is excavated, EVOH geomembrane is placed in the trench and then it is backfilled.
1205 – AEG takes lunch.
1315 –AEG returns and continues previous activities.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/28/2017
Contractor(s):	AEG	**Report No.:**	64

Weather:	AM	P. Sunny	PM	Sunny
Temperature:	AM	69	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG continue making repairs to previously installed EVOH geomembrane along with installing the strip drain risers. They also continue excavation of the anchor trench along the east boundary and sealing pipe boots.
1205 – AEG takes lunch.
1315 –AEG returns and continues previous activities.
1700 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/29/2017
Contractor(s):	AEG	**Report No.:**	65

Weather:	AM	P. Sunny	PM	Sunny
Temperature:	AM	74	PM	93

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG continues making repairs to previously installed EVOH geomembrane along with installing the strip drain risers. They also excavate the last of the anchor trench along the east boundary and seal pipe boots.
1205 – AEG takes lunch.
1315 –AEG returns and continues previous activities.
1800 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	6/30/2017
Contractor(s):	AEG	**Report No.:**	66

Weather:	AM	P. Sunny	PM	Sunny
Temperature:	AM	70	PM	87

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG works on making repairs and sealing pipe boots.
1205 – AEG takes lunch.
1315 –AEG returns and continues previous activities.
1800 – AEG leaves the site for the day.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
406 E. Walnut St.
Chatham, IL 62629
(217) 483-3118

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1 North Quarry EVOH Liner	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/01/2017
Contractor(s):	AEG	**Report No.:**	67

Weather:	AM	P. Sunny	PM	Sunny
Temperature:	AM	71	PM	90

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0650 – Arrive on site.
0700 – AEG finishes repairs and pipe boots.
1100 – AEG liner crew demobilizes.

Copies To: Erin Fanning, Dan Feezor

FEI Representative: Aaron Weber

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/10/2017
Contractor(s):	AEG	**Report No.:**	68

Weather: **AM** Sunny **PM** Sunny, windy

Temperature: **AM** 82 °F **PM** 97 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0900 – One AEG crew fusing 3x6 perimeter forcemain sections and cleanouts in NE corner of Phase 1B, another crew fusing sections/fittings of 12-in gas pipe near LCS-5B.

1524 – AEG crews continue fusion work on perimeter forcemain and begin road building/extension work in Phase 1A.

1659 – AEG crews continue road building/extension activities using excavator, small dump truck, and bulldozer.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/11/2017
Contractor(s):	AEG	**Report No.:**	69

Weather: **AM** Sunny **PM** Sunny

Temperature: **AM** 83 °F **PM** 99 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0711 – AEG crews resume fusing 3x6 perimeter forcemain sections and cleanouts along east side of Phase 1B. McElroy 618 fusion machine being prepped to ship to Ohio for repair of hydraulic system.

0839 – Additional rock for road building/extension work being delivered.

1430 – AEG crew continues road building/extension activities using excavator, small dump truck, and bulldozer. Bulldozer has to pull dump truck up the hill occasionally due to steepness of slope.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/12/2017
Contractor(s):	AEG	**Report No.:**	70

Weather: **AM** Sunny **PM** Sunny

Temperature: **AM** 82 °F **PM** 99 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0708 – AEG setting up to fuse flanges onto 30-in and 36-in sections of HDPE culvert using large trailer-mounted fusion machine.

1422 – AEG crew continues road building/extension activities using excavator and bulldozer. Small dump truck replaced with Terramac crawler given previous issue (bulldozer had to pull dump truck up the hill due to steepness of slope).

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/13/2017
Contractor(s):	AEG	**Report No.:**	71

Weather: **AM** Sunny **PM** Cloudy, light rain

Temperature: **AM** 84 °F **PM** 88 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0708 – Discuss day's agenda with AEG. AEG to continue road building/extension activities in order to get Terramac crawler off-rent. Also plan to fabricate HDPE fittings since new McElroy 618 arrived.

1004 – AEG crew working in South Quarry.

1531 – Pop-up thunderstorm threatening. Everyone off the hill.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/14/2017
Contractor(s):	AEG	**Report No.:**	72

Weather:	**AM**	Cloudy	**PM**	Partly cloudy, humid
Temperature:	**AM**	76 °F	**PM**	90 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0734 – AEG to continue road building/extension activities using Terramac, excavator, and bulldozer.

1140 – AEG lunch.

1420 – AEG road building/extension efforts continue.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/17/2017
Contractor(s):	AEG	**Report No.:**	73

Weather: **AM** Mostly sunny **PM** Mostly sunny

Temperature: **AM** 76 °F **PM** 90 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1307 – AEG performing road building/extension activities at base of road above PEW-50 using small excavator. Fusing sections of perimeter forcemain together, installing valve box on forcemain.

1528 – Survey of perimeter forcemain indicates continuous run in place from PEW-46 in southeast corner of North Quarry to point above CT-8B and below GEW-9 in amphitheater. Cleanouts still need to be capped with blind flanges and wellhead/lateral connections need to be made. Pressure testing likely to start mid- to late-week next week.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/18/2017
Contractor(s):	AEG	**Report No.:**	74

Weather: **AM** Sunny **PM** Sunny

Temperature: **AM** 80 °F **PM** 98 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0727 – AEG performing road building/extension activities at base of road north of PEW-50 using small excavator. Butt fusing fittings onto forcemain connections at wellheads along northeast ditch.

1413 – AEG continues fusion work.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/19/2017
Contractor(s):	AEG	**Report No.:**	75

Weather: **AM** Sunny **PM** Partly cloudy

Temperature: **AM** 81 °F **PM** 96 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1303 – AEG installing valve boxes on connections near PEW-48, -49, and -50, continuing other fittings fusion work.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/20/2017
Contractor(s):	AEG	**Report No.:**	76

Weather: **AM** Sunny **PM** Partly cloudy

Temperature: **AM** 86 °F **PM** 92 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0820 – AEG crew working in South Quarry along south perimeter road. No activities taking place in North Quarry. Additional rock being delivered for road work.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/21/2017
Contractor(s):	AEG	**Report No.:**	77

Weather: **AM** Sunny **PM** Sunny

Temperature: **AM** 94 °F **PM** 98 °F

Description of field activities (include labor, equipment, site conditions, sampling,etc.)

1015 – AEG working on road extensions in southeastern portion of North Quarry.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/24/2017
Contractor(s):	AEG	**Report No.:**	78

Weather: **AM** Sunny **PM** Sunny

Temperature: **AM** 79 °F **PM** 90 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0830 – AEG working on dual-contained Y fittings and 12-in HDPE sections.

1410 – AEG working on road extensions.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/25/2017
Contractor(s):	AEG	**Report No.:**	79

Weather: **AM** Partly cloudy **PM** Sunny
Temperature: **AM** 78 °F **PM** 91 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0820 – AEG excavating across perimeter road to install 36-in culvert. To maintain grade they'll need to construct a hump in the road over the pipe instead of deepening the trench across the road.

1548 – AEG continuing culvert work.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/26/2017
Contractor(s):	AEG	**Report No.:**	80

Weather: **AM** Cloudy **PM** Mostly cloudy

Temperature: **AM** 85 °F **PM** 95 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0900 – AEG performing fusion work (clean-out fittings) on forcemain near LCS-5A. Also air/gas fittings on headers and laterals in the area near LCS-5A.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/27/2017
Contractor(s):	AEG	**Report No.:**	81

Weather: **AM** Light rain **PM** Cloudy

Temperature: **AM** 78 °F **PM** 85 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1200 – AEG crew begin road building/extension work for the day. Start delayed by rain. Jason Carter new AEG project supervisor starting today. Pressure testing to begin next week.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/28/2017
Contractor(s):	AEG	**Report No.:**	82

Weather: **AM** Partly sunny **PM** Mostly cloudy

Temperature: **AM** 75 °F **PM** 87 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0820 – AEG crew is working on culverts.

1610 – AEG crew is still working on the installation of storm water culverts.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	7/31/2017
Contractor(s):	AEG	**Report No.:**	83

Weather: **AM** Mostly cloudy **PM** Mostly cloudy

Temperature: **AM** 73 °F **PM** 86 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0810 – AEG crew continues working on storm water culverts between perimeter ditch and retention basing. Jason indicates limited crew today. Plan is to remove soil from perimeter road surface, place rock on road, then complete road work from bottom of slope using single-axle dump trucks. Ditch culverts ordered.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/1/2017
Contractor(s):	AEG	**Report No.:**	84

Weather: **AM** Mostly cloudy **PM** Mostly cloudy

Temperature: **AM** 76 °F **PM** 88 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0750 – AEG crew continues working on the installation of storm water culverts between the perimeter ditch and the retention basin.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/2/2017
Contractor(s):	AEG	**Report No.:**	85

Weather: **AM** Partly cloudy **PM** Partly cloudy
Temperature: **AM** 76 °F **PM** 89 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0920 – AEG using dozer to backfill soil around culverts and scrape top layer of soil and rubble off of perimeter road. Also placing more rock on top of hill using single-axle dump truck (constructing pad for Layne pump removal work tomorrow).

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/3/2017
Contractor(s):	AEG	**Report No.:**	86

Weather: **AM** Sunny **PM** Mostly sunny

Temperature: **AM** 78 °F **PM** 92 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0820 – AEG crew working in South Quarry on raising/relocating infrastructure.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/4/2017
Contractor(s):	AEG	**Report No.:**	87

Weather: **AM** Partly cloudy **PM** Mostly sunny

Temperature: **AM** 65 °F **PM** 78 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0912 – AEG crew continues working in South Quarry on raising/relocating infrastructure.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/7/2017
Contractor(s):	AEG	**Report No.:**	88

Weather: **AM** Foggy **PM** Mostly cloudy

Temperature: **AM** 67 °F **PM** 79 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0733 – AEG crew continue working in South Quarry on raising/relocating infrastructure. Working on the last of the 18-in wells in the SQ, then will resume road work in NQ and work on 12-in pipe.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/14/2017
Contractor(s):	AEG	**Report No.:**	89

Weather: **AM** Mostly cloudy **PM** Cloudy

Temperature: **AM** 71 °F **PM** 82 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0748 – AEG crew working on pipe fittings and line connections near north access road. Air testing to begin tomorrow.

1410 – FEI prepping to resume TMP installations. AEG crew continues pipe work on west side of north access road. Move fusion machine off of TMP-28R drill pad.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/15/2017
Contractor(s):	AEG	**Report No.:**	90

Weather: **AM** Mostly cloudy **PM** Partly cloudy

Temperature: **AM** 80 °F **PM** 89 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0930 – AEG performing air test on 12-in, 8-in, and 6-in lateral and header lines associated with gas extraction wells GEW-201, -40, -40R, -203, -202, -55, -55R, -204, -53, -53R, -207, -41R, -41R2, -43R, -43R2, -205, -206, -44, -51, -211, -214, -49, -212, -54, and -54R, and leachate collection sump LCS-5B. 10psi pressure applied to lines and maintained for 1 hour. Initial/ending ambient temps = 65 and 70 degrees F.

1053 – FEI passes air test.

1704 – AEG begins additional testing (6-in lateral lines associated with gas extraction wells GEW-42R and -200. 10psi pressure applied to lines and maintained for 1 hour. Initial/ending ambient temps = 81 and 81 degrees F.

1808 – FEI passes air test.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/16/2017
Contractor(s):	AEG	**Report No.:**	91

Weather: **AM** Mostly cloudy **PM** Mostly cloudy

Temperature: **AM** 80 °F **PM** 88 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1136 – AEG performing air test on 6-in laterals associated with gas extraction wells GEW-2, -3, -4, and -46R. 10psi pressure applied to lines and maintained for 1 hour. Initial/ending ambient temps = 79 and 81 degrees F.

1308 – FEI passes air test.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/17/2017
Contractor(s):	AEG	**Report No.:**	92

Weather: **AM** Mostly cloudy **PM** Mostly sunny

Temperature: **AM** 76 °F **PM** 87 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0712 – AEG performing air test on 3-in x 6-in dual containment forcemain around north side of North Quarry. Pressurized to 100psi but test failed due to cleanout gasket leak.

0943 – AEG performing air test on 12-in header and 6-in laterals associated with gas extraction wells GEW-45 and -47R. 10psi pressure applied to lines and maintained for 1 hour. Initial/ending ambient temps = 77 and 81 degrees F.

1107 – AEG has repaired gasket and restarts forcemain test.

1358 – FEI passes air test for GEW-45/-47R header & laterals.

1604 – AEG has repaired leaking valves on forcemain laterals and restarts the forcemain test again.

1752 – FEI fails forcemain test due to pressure loss. AEG to re-address tomorrow.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/18/2017
Contractor(s):	AEG	**Report No.:**	93

Weather: **AM** Partly cloudy **PM** Overcast

Temperature: **AM** 75 °F **PM** 86 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1030: AEG performing air test on 3-inch inner diameter pipe of 3x6 forcemain beginning @ PZ-109-SS, running clockwise around north quarry, past CT-10, past GEW-2S, then splitting at tee located immediately downhill of GEW-2. One part of pipe extends from tee, past GEW-2, past GEW-3, and ends near GEW-4. Other part of pipe extends from tee and follows surface water trench to end near PZ-104R-SS. Initial pressure: 100 psi; ambient temp = 81 °F

1200: Final pressure: 100 psi; ambient temp = 81 °F. Section passes test.

1500: AEG begins air test on 3x6 forcemain beginning @ PZ-102R-SS, running along anchor trench to end adjacent to flare station. Initial pressure: 100 psi inner & 10 psi outer; ambient temp = 89 °F

1605: Final pressure: 100 psi inner & 10 psi outer; ambient temp = 90 °F. Section passes test.

Copies to: Dan Feezor

FEI Representative: Jonathan E Wilkinson, P.E.

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client: Bridgeton Landfill
Project: Phase 1A/B North Quarry EVOH/LFG CQA
Location: Bridgeton, MO
Job No.: BT-125
Task No.: -
Date: 8/19/2017
Contractor(s): AEG
Report No.: 94

Weather: **AM** Mostly Sunny **PM** Mostly Sunny
Temperature: **AM** 72 °F **PM** 91 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700: AEG begins pressure test of 2-inch diameter pipe beginning @ GEW-47R to near LCS-6B, then splitting at tee near LCS-6B. One part of pipe extends from tee to GEW-4. Other part of pipe extends from tee to unlabeled CT near PEW-53 and PEW-52. Initial pressure: 100 psi; ambient temp = 71 °F

0800: Final pressure: 100 psi; ambient temp = 75 °F. Section passes test.

0830: AEG begins pressure test of 3x6 forcemain beginning at PEW-52 / PEW-53, then going uphill past GEW-49, past GEW-214, then to blind flange near TMP-44. From blind flange, the forcemain continues past GEW-211, past GEW-207, past GEW-54/54R, to anchor trench downhill of GEW-41/41R2, then uphill to GEW-40R, past GEW-55/55R, and terminating at GEW-53/53R. Initial pressure: 100 psi inner & 10 psi outer; ambient temp = 78 °F

0900: 3x6 forcemain test failed due to faulty gasket on cleanout near GEW-211. AEG replaces gasket and restarts test. Initial pressure: 100 psi inner & 10 psi outer; ambient temp = 78 °F

1000: Final pressure of 3x6 forcemain: 100 psi inner & 10 psi outer; ambient temp = 81 °F. Section passes test.

1045: AEG begins pressure test of 3x6 forcemain beginning at TMP-47 / TMP-48, runs past LCS-6B, splits into “y”. One line from y terminates at GEW-47R. Other line from y terminates

Copies to: Dan Feezor

FEI Representative: Jonathan E Wilkinson, P.E.

at unlabeled CT near PEW-53 and PEW-52. Initial pressure: 100 psi inner & 10 psi outer; ambient temp = 82 °F

1115: AEG begins pressure test of 2-inch diameter air line beginning at GEW-4 and passes GEW-3, GEW-2, then proceeds downhill to perimeter access road. The line splits at a tee. The pipe from one side of the tee leads to CT-11. The other pipe from the tee splits into another tee a few feet away. One side of the pipe from the second tee leads to GEW-46R. The other pipe from the second tee leads clockwise around the perimeter access road to Road Crossing 4, near CT-12. Initial pressure: 100 psi inner; ambient temp = 86 °F

1215: Final pressure of 3x6 forcemain: 100 psi inner & 10 psi outer; ambient temp = 88 °F. 3x6 forcemain section passes test. Final pressure of 2-inch air line: 100 psi. 2-inch air line section passes test.

1309: AEG begins pressure test on 6-inch outer diameter pipe of 3x6 forcemain beginning @ PZ-109-SS, running clockwise around north quarry, past CT-10, past GEW-2S, then splitting at tee located immediately downhill of GEW-2. One part of pipe extends from tee, past GEW-2, past GEW-3, and ends near GEW-4. Other part of pipe extends from tee and follows surface water trench to end near PZ-104R-SS. The inner pipe was tested yesterday. For outer pipe, initial pressure: 10 psi; ambient temp = 81 °F

1325: AEG begins pressure test of 2-inch diameter air line beginning at PEW-48 and leading uphill to GEW-42R / 42R2: 100 psi; ambient temp = 89 °F

1410: Final pressure of 6-inch outer diameter pipe of 3x6 forcemain: 10 psi; ambient temp = 89 °F. Section passes test.

1415: Pressure of 2-inch diameter air line for test started @ 1325 is 96 psi and falling. AEG identifies and fixes leak in line.

1420: Restart pressure test of 2-inch diameter air line beginning at PEW-48 and leading to GEW-42R / 42R2: 100 psi; ambient temp = 89 °F

1420: AEG begins pressure test of 6-inch diameter outer pipe of 3x6 forcemain leading from GEW-42R to box near PEW-48. Starting pressure: 10 psi; ambient temp = 89 °F

1520: Pressure of 6-inch diameter outer pipe of 3x6 forcemain from GEW-42R to box: 9.5 psi. Section fails test.

1525: Final pressure of 2-inch diameter air line: 100 psi; ambient temp = 88 °F. Section passes test.

1536: Restart pressure test of 6-inch diameter outer pipe of 3x6 forcemain from GEW-42R to box. Initial pressure: 10.5 psi; ambient temp = 88 °F

1636: Pressure of 6-inch diameter outer pipe of 3x6 forcemain from GEW-42R to box: 10.25 psi.

Section fails test. AEG will retest tomorrow (8/21).

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/21/2017
Contractor(s):	AEG	**Report No.:**	95

Weather: **AM** Partly cloudy **PM** Light rain

Temperature: **AM** 88 °F **PM** 87 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0700 – AEG performing air test on 6-in containment forcemain lateral associated with gas extraction wells GEW-42 and -200. 10psi pressure applied to lines and maintained for 1 hour. Initial/ ending ambient temps = 82 and 82 degrees F.

0848 – FEI passes air test. Last air test for project.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/22/2017
Contractor(s):	AEG	**Report No.:**	96

Weather: **AM** Light rain **PM** Mostly cloudy

Temperature: **AM** 71 °F **PM** 81 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0746 – AEG reconnecting wellheads to new forcemain and gas extraction laterals. Remaining work includes abandoning old 2-in horizontal piping, abandoning old risers next to the extraction wells, and performing additional work on roads and the two culverts that flow into the northeast pond. Still waiting to install culverts in the perimeter ditch to allow for road crossings.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/23/2017
Contractor(s):	AEG	**Report No.:**	97

Weather: **AM** Partly cloudy **PM** Partly cloudy

Temperature: **AM** 69 °F **PM** 78 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

0752 – AEG working on 2-in pipe abandonments and dressing up roads.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	8/24/2017
Contractor(s):	AEG	**Report No.:**	98

Weather: **AM** Partly cloudy **PM** Mostly sunny

Temperature: **AM** 71 °F **PM** 81 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1243 – AEG continues working on road extensions/repairs, and installing perimeter ditch culverts and piping crossings.

Copies to: Dan Feezor

FEI Representative: William J Abernathy, RG

Feezor Engineering, Inc.
3377 Hollenberg Drive
Bridgeton, MO 63044

Daily Field Summary Report

Client:	Bridgeton Landfill	**Job No.:**	BT-125
Project:	Phase 1A/B North Quarry EVOH/LFG CQA	**Task No.:**	-
Location:	Bridgeton, MO	**Date:**	9/27/2017
Contractor(s):		**Report No.:**	99

Weather: **AM** Mostly cloudy **PM** Mostly sunny

Temperature: **AM** 65 °F **PM** 74 °F

Description of field activities (include labor, equipment, site conditions, sampling, etc.)

1130 – I arrive onsite to perform survey of miscellaneous items for project record drawings and to evaluate the completion of the perimeter access road. All project work is complete.
1530 – I left the site.

Copies to: Dan Feezor

FEI Representative: Bradley Vos

APPENDIX B

GEOSYNTHETIC CONFORMANCE TESTING

Sub-Appendices

B.1 EVOH Geomembrane Manufacturer's Quality Control Data
B.2 Geotextile Manufacturer's Quality Control Data
B.3 Geocomposite Manufacturer's Quality Control Data

Sub-Appendix B.1

EVOH Geomembrane Manufacturer's Quality Control Data

RAVEN
INDUSTRIES

Product Certification

Product Name: X60FC1 **Sales Order # 201039** **Size of product: 16 x 550**

Absolute Barrier ™ X-Series X60FC1 are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications.

Roll #	Thickness ASTM D5994	Asperity GM 12	Tensile (ppi) ASTM D 6693	Elongation(%)	Elongation(%)	Tear (lbs.) ASTM D1004	Puncture (lbs.) ASTM D 4833	OIT Oxidative Induction Time ASTM D3895
Specification	50 mil min. avg	10 mil min avg.	75 lb/in. min avg.	MD 200 % min avg.	TD 30 % min avg.	27 min. avg.	55 min avg	100 min.
7080198	57	G 18.9 B 22.2	155	303%	91%	50	127	188
7080303	58	G 20.2 B 22.0	155	303%	91%	50	127	188
7080358	57	G 19.2 B 20.4	155	303%	91%	50	127	188
7080392	57	G 19.2 B 22.2	155	303%	91%	50	127	188
7080474	56	G 17.0 B 21.1	155	303%	91%	50	127	188
7080533	57	G 22.0 B 20.0	155	303%	91%	50	127	188
7080628	56	G 17.6 B 23.0	155	303%	91%	50	127	188
7080866	58	G 17.1 B 18.4	155	303%	91%	50	127	188
7081034	57	G 15.2 B 17.8	155	405%	449%	49	125	188
7081252	55	G 19.3 B 21.1	155	405%	449%	49	125	188
7081551	55	G 16.1 B 18.5	155	405%	449%	49	125	188
7081930	58	G 27.4 B 20.0	155	405%	449%	49	125	188
7172029	51	G 20.5 B 26.8	150	334%	309%	47	119	175
7172035	52	G 17.2 B 16.1	150	334%	309%	47	119	175
7172216	54	G 20.3 B 21.3	150	334%	309%	47	119	175

Note: Any resins used to make this product have met suppliers' certifications.

Customer: Republic Services **Date: November 15, 2013**

Pamela Weiler

Pamela Weiler
Quality Assurance Technician II
Raven Industries – Engineered Films Division
Raven Industries, Inc. • Engineered Films Division • 821 W Algonquin St. • Sioux Falls, SD 57104
Ph: 605.335.0174 • Fax: 605.331.0331 • ravenefd.com

RAVEN
INDUSTRIES

Product Certification

Product Name: X60FC1 **Sales Order # 201040** **Size of product: 16 x 550**

Absolute Barrier ™ X-Series X60FC1 are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications.

Roll #	Thickness ASTM D5994	Asperity GM 12	Tensile (ppi) ASTM D 6693	Elongation(%)	Elongation(%)	Tear (lbs.) ASTM D1004	Puncture (lbs.) ASTM D 4833	OIT Oxidative Induction Time ASTM D3895
Specification	50 mil min. avg	10 mil min avg.	75 lb/in. min avg.	MD 200 % min avg.	TD 30 % min avg.	27 min. avg.	55 min avg	100 min.
7172809	54.42	G 18.7 B 16.8	150	334%	284%	47	119	175
7174542	53.07	G 17.8 B 16.8	163	456%	359%	48	125	175
7174569	53.49	G 18.3 B 16.4	163	456%	359%	48	125	175
7174621	54.43	G 18.0 B 15.4	163	456%	359%	48	125	175
7175851	53.72	G 17.0 B 19.2	160	506%	473%	48	125	175
7175973	53.90	G 16.1 B 15.3	160	506%	473%	48	125	175
7176122	53.90	G 16.8 B 14.8	160	506%	473%	48	125	175
7176173	55.35	G 17.8 B 15.4	160	506%	473%	48	125	175
7176218	59.80	G 15.6 B 16.1	160	506%	473%	48	125	175
7176308	53.86	G 16.6 B 15.2	163	486%	391%	47	126	175
7176326	51.45	G 18.9 B 18.5	163	486%	391%	47	126	175
7176347	53.27	G 18.3 B 15.7	163	486%	391%	47	126	175
7176368	53.58	G 19.3 B 15.6	163	486%	391%	47	126	175
7176384	53.95	G 17.7 B 17.5	163	486%	391%	47	126	175
7176434	55.06	G 17.3 B 16.1	163	486%	391%	47	126	175

Note: Any resins used to make this product have met suppliers' certifications.

Customer: Republic Services **Date: November 20, 2013**

Pamela Weiler

Pamela Weiler
Quality Assurance Technician II
Raven Industries – Engineered Films Division
Raven Industries, Inc. • Engineered Films Division • 821 W Algonquin St. • Sioux Falls, SD 57104

Ph: 605.335.0174 • Fax: 605.331.0331 • ravenefd.com

RAVEN
INDUSTRIES

Product Certification

Product Name: X60FC1 **Sales Order # 201041** **Size of product: 16 x 550**

Absolute Barrier ™ X-Series X60FC1 are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications.

Roll #	Thickness ASTM D5994	Asperity GM 12	Tensile (ppi) ASTM D 6693	Elongation(%)	Elongation(%)	Tear (lbs.) ASTM D1004	Puncture (lbs.) ASTM D 4833	OIT Oxidative Induction Time ASTM D3895
Specification	50 mil min. avg	10 mil min avg.	75 lb/in. min avg.	MD 200 % min avg.	TD 30 % min avg.	27 min. avg.	55 min avg	100 min.
7171890	51.8	G 20.5 B 26.8	155	334%	309%	50	127	188
7173331	54.4	G 16.3 B 16.1	150	599%	536%	47	119	175
7173374	53.9	G 15.4 B 15.3	150	599%	536%	47	119	175
7175501	56.1	G 15.9 B 13.1	160	505%	472%	47	119	175
7176598	54.7	G 14.5 B 14.1	163	486%	296%	47	126	175
7177308	55.6	G 14.5 B 14.3	154	322%	265%	47	127	175
7177336	56.0	G 15.4 B 17.5	154	322%	265%	47	127	175
7177661	55.8	G 18.1 B 12.0	163	517%	381%	48	123	175
7177758	54.2	G 16.6 B 14.2	163	517%	381%	48	123	175
7177955	55.7	G 15.4 B 14.8	163	517%	381%	48	123	175
7178175	56.6	G 16.3 B 14.1	163	517%	381%	48	123	175
7178363	54.0	G 13.3 B 13.8	163	517%	381%	48	123	175
7178638	55.5	G 17.4 B 15.7	163	517%	381%	48	123	175
7178776	56.0	G 17.7 B 14.5	163	517%	381%	48	123	175
7178843	54.3	G 17.0 B 13.7	163	517%	381%	48	123	175

Note: Any resins used to make this product have met suppliers' certifications.

Customer: Republic Services **Date: November 21, 2013**

Clint Boerhave

Clint Boerhave
Quality Manager
Raven Industries – Engineered Films Division

Raven Industries, Inc. • Engineered Films Division • 821 W Algonquin St. • Sioux Falls, SD 57104

Ph: 605.335.0174 • Fax: 605.331.0331 • ravenefd.com

RAVEN
INDUSTRIES

Product Certification

Product Name: X60FC1 **Sales Order # 201042** **Size of product: 16 x 550**

Absolute Barrier ™ X-Series X60FC1 are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications.

Roll #	Thickness ASTM D5994	Asperity GM 12	Tensile (ppi) ASTM D 6693	Elongation(%)	Elongation(%)	Tear (lbs.) ASTM D1004	Puncture (lbs.) ASTM D 4833	OIT Oxidative Induction Time ASTM D3895
Specification	50 mil min. avg	10 mil min avg.	75 lb/in. min avg.	MD 200 % min avg.	TD 30 % min avg.	27 min. avg.	55 min avg	100 min.
7175605	54.8	G 15.9 B 15.5	160	505%	472%	47	119	175
7177361	56.3	G 15.8 B 14.8	154	322%	265%	47	127	175
7177400	55.5	G 15.7 B 15.3	154	322%	265%	47	127	175
7177406	55.3	G 16.9 B 15.8	154	322%	265%	47	127	175
7177460	55.8	G 15.9 B 16.3	154	322%	265%	47	127	175
7177494	55.7	G 16.3 B 22.3	154	322%	265%	47	127	175
7177524	55.3	G 18.7 B 15.7	154	322%	265%	47	127	175
7177602	55.7	G 15.8 B 16.0	163	517%	381%	48	123	175
7178492	53.9	G 16.5 B 13.7	163	517%	381%	48	123	175
7178919	55.2	G 20.9 B 17.2	163	482%	467%	48	123	175
7179003	58.1	G 16.1 B 17.8	163	482%	467%	48	123	175
7179075	54.4	G 17.9 B 16.7	163	482%	467%	48	123	175
7179145	56.4	G 17.5 B 16.1	163	482%	467%	48	123	175
7179173	54.5	G 17.3 B 15.2	163	482%	467%	48	123	175
7179242	55.5	G 19.2 B 17.4	163	482%	467%	48	123	175

Note: Any resins used to make this product have met suppliers' certifications.

Customer: Republic Services **Date: November 21, 2013**

Clint Boerhave

Clint Boerhave
Quality Manager
Raven Industries – Engineered Films Division

Raven Industries, Inc. • Engineered Films Division • 821 W Algonquin St. • Sioux Falls, SD 57104

Ph: 605.335.0174 • Fax: 605.331.0331 • ravenefd.com

RAVEN
INDUSTRIES

Product Certification

Product Name: X60FC1 **Sales Order # 201044** **Size of product: 16 x 550**

Absolute Barrier ™ X-Series X60FC1 are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications.

Roll #	Thickness ASTM D5994	Asperity GM 12	Tensile (ppi) ASTM D 6693	Elongation(%)	Elongation(%)	Tear (lbs.) ASTM D1004	Puncture (lbs.) ASTM D 4833	OIT Oxidative Induction Time ASTM D3895
Specification	50 mil min. avg	10 mil min avg.	75 lb/in. min avg.	MD 200 % min avg.	TD 30 % min avg.	27 min. avg.	55 min avg	100 min.
7171929	51.1	G 24.1 B 19.4	150	309%	118%	47	119	175
7173290	54.7	G 15.2 B 15.7	178	529%	536%	47	119	175
7173504	54.0	G 13.9 B 12.6	178	529%	536%	47	119	175
7173687	55.1	G 14.7 B 13.7	178	529%	536%	47	119	175
7174446	54.7	G 15.9 B 15.8	163	456%	359%	48	125	175
7188820	55.5	G 15.3 B 14.4	155	463%	484%	49	124	175
7188997	60.0	G 11.3 B 11.9	155	463%	484%	49	124	175
7189137	53.9	G 14.6 B 16.2	155	463%	484%	49	124	175
7189388	54.9	G 15.5 B 13.9	155	463%	484%	49	124	175
7189562	53.1	G 13.8 B 11.6	155	463%	484%	49	124	175
7189739	54.7	G 14.6 B 14.4	155	463%	484%	49	124	175
7189991	53.1	G 14.8 B 14.7	155	463%	484%	49	124	175
7190194	54.5	G17.1 B 13.6	168	447%	451%	49	127	175
7190775	55.8	G 15.1 B 13.6	168	447%	451%	49	127	175
7190889	55.7	G 14.9 B 13.8	168	447%	451%	49	127	175

Note: Any resins used to make this product have met suppliers' certifications.

Customer: Republic Services **Date: November 30, 2013**

Pamela Weiler

Pamela Weiler
Quality Assurance Technician II
Raven Industries – Engineered Films Division

RAVEN
INDUSTRIES

Product Certification

Product Name: X60FC1 **Sales Order # 201045** **Size of product: 16 x 550**

Absolute Barrier ™ X-Series X60FC1 are a seven layer, co-extruded membrane consisting of high density polyethylene (HDPE) with an effective barrier core-layer to provide superior resistance to gas transmission. HDPE provides excellent chemical resistance and durability for long term applications.

Roll #	Thickness ASTM D5994	Asperity GM 12	Tensile (ppi) ASTM D 6693	Elongation(%)	Elongation(%)	Tear (lbs.) ASTM D1004	Puncture (lbs.) ASTM D 4833	OIT Oxidative Induction Time ASTM D3895
Specification	50 mil min. avg	10 mil min avg.	75 lb/in. min avg.	MD 200 % min avg.	TD 30 % min avg.	27 min. avg.	55 min avg	100 min.
7174686	55.6	G 16.3 B 16.1	163	456%	359%	48	125	175
7179682	56.9	G 18.0 B 15.0	160	506%	472%	48	125	175
7190290	54.5	G 13.4 B 14.1	168	447%	451%	49	127	175
7190332	55.6	G 13.7 B 13.8	168	447%	451%	49	127	175
7190412	54.1	G 14.7 B 13.8	168	447%	451%	49	127	175
7190496	55.2	G 13.6 B 15.5	168	447%	451%	49	127	175
7190540	55.6	G 15.2 B 14.3	168	447%	451%	49	127	175
7190619	55.1	G 18.1 B 15.5	168	447%	451%	49	127	175
7190734	54.4	G 16.8 B 14.4	168	447%	451%	49	127	175
7191049	54.8	G 16.6 B 15.4	169	508%	466%	49	127	175
7191181	55.0	G 14.7 B 14.7	169	508%	466%	49	127	175
7191358	53.7	G 16.6 B 13.1	169	508%	466%	49	127	175
7191477	55.8	G 15.6 B 17.2	169	508%	466%	49	127	175
7191661	54.4	G 14.2 B 12.7	169	508%	466%	49	127	175
7191859	54.9	G 16.5 B 13.8	168	514%	515%	50	129	175

Note: Any resins used to make this product have met suppliers' certifications.

Customer: Republic Services **Date: November 30, 2013**

Pamela Weiler

Pamela Weiler
Quality Assurance Technician II
Raven Industries – Engineered Films Division

Sub-Appendix B.2

Geotextile Manufacturer's Quality Control Data

SKAPS Industries (Nonwoven Division)
335, Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: contact@skaps.com

Sales Office:
Engineered Synthetic Product Inc.
Phone: (770)564-1857
Fax: (770)564-1818

December 27, 2016
Republic Waste Services

Ref : Bridgeton LF
PO : Bridgeton

Dear Sir/Madam:

This is to certify that SKAPS GE160 is a high quality needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, randomly networked to form a high strength dimensionally stable fabric. SKAPS GE160 resists ultraviolet deterioration, rotting, biological degradation. The fabric is inert to commonly encountered soil chemicals. Polypropylene is stable within a pH range of 2 to 13. SKAPS GE160 conforms to the property values listed below:

PROPERTY	TEST METHOD	UNITS	M.A.R.V. Minimum Average Roll Value
Weight	ASTM D 5261	oz/sy (g/m^2)	6.00 (203)
Grab Tensile	ASTM D 4632	lbs (kN)	160 (0.71)
CBR Puncture	ASTM D 6241	lbs (kN)	450 (2.00)
Permittivity*	ASTM D 4491	sec^{-1}	1.63
AOS*	ASTM D 4751	US Sieve (mm)	70 (0.21)
UV Resistance	ASTM D 4355	%/hrs	70/500

Notes:

* At the time of manufacturing. Handling may change these properties.

KOUROSH SABZEVARI
QUALITY CONTROL MANAGER

Product : GE160-180

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 6.00	MD TENSILE D4632 lbs. 160	XMD TENSILE D4632 lbs 160	CBR PUNCTURE D6241 lbs. 450	AOS D4751 US Sieve 70	PERMITTIVITY D4491 sec^{-1} 1.63
45619.1	6.59	166	177	498	70	1.77
45619.2	6.59	166	177	498	70	1.77
45619.3	6.59	166	177	498	70	1.77
45619.4	6.59	166	177	498	70	1.77
45619.5	6.35	161	173	498	70	1.77
45619.6	6.35	161	173	498	70	1.77
45619.7	6.35	161	173	498	70	1.77
45619.8	6.35	161	173	498	70	1.77
45619.9	6.35	161	173	498	70	1.77
45619.10	6.68	169	180	482	70	1.77
45619.11	6.68	169	180	482	70	1.77
45619.12	6.68	169	180	482	70	1.77
45619.13	6.68	169	180	482	70	1.77
45619.14	6.68	169	180	482	70	1.77
45619.15	6.24	164	170	482	70	1.77
45619.16	6.24	164	170	482	70	1.77
45619.17	6.24	164	170	482	70	1.77
45619.18	6.24	164	170	482	70	1.77
45619.19	6.24	164	170	482	70	1.77
45619.20	6.42	167	176	487	70	1.77
45619.21	6.42	167	176	487	70	1.77
45619.22	6.42	167	176	487	70	1.77
45619.23	6.42	167	176	487	70	1.77
45619.24	6.42	167	176	487	70	1.77
45619.25	6.39	160	174	487	70	1.77
45619.26	6.39	160	174	487	70	1.77
45619.27	6.39	160	174	487	70	1.77
45619.28	6.39	160	174	487	70	1.77

* All value are MARV.

SKAPS Industries (Nonwoven Division)
335, Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: info@skaps.com

Sales Office:
Engineered Synthetic Product Inc.
Phone: (770)564-1857
Fax: (770)564-1818

October 29, 2013
Republic Waste Services, Inc.

Ref : RWS Bridgeton Landfill
PO : Phase 2

Dear Sir/Madam:

This is to certify that SKAPS GE180 is a high quality needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, randomly networked to form a high strength dimensionally stable fabric.SKAPS GE180 resists ultraviolet deterioration, rotting, biological degradation. The fabric is inert to commonly encountered soil chemicals. Polypropylene is stable within a pH range of 2 to 13. SKAPS GE180 conforms to the property values listed below:

PROPERTY	TEST METHOD	UNITS	M.A.R.V. Minimum Average Roll Value
Weight	ASTM D 5261	oz/sy (g/m^2)	8.00 (271)
Thickness*	ASTM D 5199	mils (mm)	100 (2.54)
Grab Tensile	ASTM D 4632	lbs (kN)	225 (1.00)
Grab Elongation	ASTM D 4632	%	50
Trapezoidal Tear	ASTM D 4533	lbs (kN)	90 (0.40)
Puncture Resistance	ASTM D 4833	lbs (kN)	130 (0.58)
Mullen Burst Strength	ASTM D 3786	psi (kPa)	425 (2930)
Permittivity*	ASTM D 4491	sec^{-1}	1.26
Permeability*	ASTM D 4491	cm/sec	0.30
Water Flow*	ASTM D 4491	$gpm/ft^2(l/min/m^2)$	100 (4074)
AOS*	ASTM D 4751	US Sieve (mm)	80 (0.18)
UV Resistance	ASTM D 4355	%/hrs	70/500

Notes:
* At the time of manufacturing. Handling may change these properties.

PALAK PATEL
QUALITY CONTROL MANAGER

Product : GE180-180

ROLL #	WEIGHT	THICKNESS	MD TENSILE	MD ELONG	XMD TENSILE	XMD ELONG	MD TRAP	XMD TRAP	PUNCTURE	MULLEN	AOS	WATER FLOW	PERMEABILITY	PERMITTIVITY
ASTM METHOD	D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786	D4751	D4491	D4491	D4491
UNITS	oz/sq yd	(mils)	lbs.	%	lbs	%	lbs.	lbs	lbs.	psi	US Sieve	gpm/ft^2	cm/sec	sec^{-1}
TARGET	8.00	100	225	50	225	50	90	90	130	425	80	100	0.30	1.26
31966.001	8.54	123	234	74	244	85	104	118	139	434	80	104	0.43	1.39
31966.002	8.54	123	234	74	244	85	104	118	139	434	80	104	0.43	1.39
31966.003	8.54	123	234	74	244	85	104	118	139	434	80	104	0.43	1.39
31966.004	8.54	123	234	74	244	85	104	118	139	434	80	104	0.43	1.39
31966.005	8.13	120	229	68	233	76	104	118	139	434	80	104	0.43	1.39
31966.006	8.13	120	229	68	233	76	104	118	139	434	80	104	0.43	1.39
31966.007	8.13	120	229	68	233	76	104	118	139	434	80	104	0.43	1.39
31966.008	8.13	120	229	68	233	76	104	118	139	434	80	104	0.43	1.39
31966.009	8.13	120	229	68	233	76	104	118	139	434	80	104	0.43	1.39
31966.010	8.36	125	231	71	240	82	96	107	135	429	80	104	0.43	1.39
31966.011	8.36	125	231	71	240	82	96	107	135	429	80	104	0.43	1.39
31966.012	8.36	125	231	71	240	82	96	107	135	429	80	104	0.43	1.39
31966.013	8.36	125	231	71	240	82	96	107	135	429	80	104	0.43	1.39
31966.014	8.36	125	231	71	240	82	96	107	135	429	80	104	0.43	1.39
31966.015	8.10	122	226	65	230	79	96	107	135	429	80	104	0.43	1.39
31966.016	8.10	122	226	65	230	79	96	107	135	429	80	104	0.43	1.39
31966.017	8.10	122	226	65	230	79	96	107	135	429	80	104	0.43	1.39
31966.018	8.10	122	226	65	230	79	96	107	135	429	80	104	0.43	1.39
31966.019	8.10	122	226	65	230	79	96	107	135	429	80	104	0.43	1.39
31966.020	8.42	124	235	73	242	84	101	110	137	431	80	104	0.43	1.39
31966.021	8.42	124	235	73	242	84	101	110	137	431	80	104	0.43	1.39
31966.022	8.42	124	235	73	242	84	101	110	137	431	80	104	0.43	1.39
31966.023	8.42	124	235	73	242	84	101	110	137	431	80	104	0.43	1.39
31966.024	8.42	124	235	73	242	84	101	110	137	431	80	104	0.43	1.39
31966.025	8.21	120	228	67	236	75	101	110	137	431	80	104	0.43	1.39
31966.026	8.21	120	228	67	236	75	101	110	137	431	80	104	0.43	1.39
31966.027	8.21	120	228	67	236	75	101	110	137	431	80	104	0.43	1.39
31966.028	8.21	120	228	67	236	75	101	110	137	431	80	104	0.43	1.39
31966.029	8.21	120	228	67	236	75	101	110	137	431	80	104	0.43	1.39
31966.030	8.40	123	233	75	238	81	99	104	132	426	80	104	0.43	1.39
31966.031	8.40	123	233	75	238	81	99	104	132	426	80	104	0.43	1.39
31966.032	8.40	123	233	75	238	81	99	104	132	426	80	104	0.43	1.39
31966.033	8.40	123	233	75	238	81	99	104	132	426	80	104	0.43	1.39
31966.034	8.40	123	233	75	238	81	99	104	132	426	80	104	0.43	1.39
31966.035	8.17	121	225	69	231	77	99	104	132	426	80	104	0.43	1.39
31966.036	8.17	121	225	69	231	77	99	104	132	426	80	104	0.43	1.39
31966.037	8.17	121	225	69	231	77	99	104	132	426	80	104	0.43	1.39
31966.038	8.17	121	225	69	231	77	99	104	132	426	80	104	0.43	1.39
31966.039	8.17	121	225	69	231	77	99	104	132	426	80	104	0.43	1.39
31966.040	8.56	125	231	72	243	83	103	114	140	433	80	104	0.43	1.39

*All Values are MARV.

Product : GE180-180

ROLL #	WEIGHT	THICKNESS	MD TENSILE	MD ELONG	XMD TENSILE	XMD ELONG	MD TRAP	XMD TRAP	PUNCTURE	MULLEN	AOS	WATER FLOW	PERMEABILITY	PERMITTIVITY
ASTM METHOD	D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786	D4751	D4491	D4491	D4491
UNITS	oz/sq yd	(mils)	lbs.	%	lbs	%	lbs.	lbs	lbs.	psi	US Sieve	gpm/ft^2	cm/sec	sec^{-1}
TARGET	8.00	100	225	50	225	50	90	90	130	425	80	100	0.30	1.26
31966.041	8.56	125	231	72	243	83	103	114	140	433	80	104	0.43	1.39
31966.042	8.56	125	231	72	243	83	103	114	140	433	80	104	0.43	1.39
31966.043	8.56	125	231	72	243	83	103	114	140	433	80	104	0.43	1.39
31966.044	8.56	125	231	72	243	83	103	114	140	433	80	104	0.43	1.39
31966.045	8.34	120	229	66	235	79	103	114	140	433	80	104	0.43	1.39
31966.046	8.34	120	229	66	235	79	103	114	140	433	80	104	0.43	1.39
31966.047	8.34	120	229	66	235	79	103	114	140	433	80	104	0.43	1.39
31966.048	8.34	120	229	66	235	79	103	114	140	433	80	104	0.43	1.39
31966.049	8.34	120	229	66	235	79	103	114	140	433	80	104	0.43	1.39
31966.050	8.44	124	234	74	239	85	97	102	130	428	80	100	0.42	1.33
31966.051	8.44	124	234	74	239	85	97	102	130	428	80	100	0.42	1.33
31966.052	8.44	124	234	74	239	85	97	102	130	428	80	100	0.42	1.33
31966.053	8.44	124	234	74	239	85	97	102	130	428	80	100	0.42	1.33
31966.054	8.44	124	234	74	239	85	97	102	130	428	80	100	0.42	1.33
31966.055	8.11	121	227	68	237	76	97	102	130	428	80	100	0.42	1.33
31966.056	8.11	121	227	68	237	76	97	102	130	428	80	100	0.42	1.33
31966.057	8.11	121	227	68	237	76	97	102	130	428	80	100	0.42	1.33
31966.058	8.11	121	227	68	237	76	97	102	130	428	80	100	0.42	1.33
31966.059	8.11	121	227	68	237	76	97	102	130	428	80	100	0.42	1.33
31966.060	8.51	125	232	71	241	82	105	112	138	435	80	100	0.42	1.33
31966.061	8.51	125	232	71	241	82	105	112	138	435	80	100	0.42	1.33
31966.062	8.51	125	232	71	241	82	105	112	138	435	80	100	0.42	1.33
31966.063	8.51	125	232	71	241	82	105	112	138	435	80	100	0.42	1.33
31966.064	8.51	125	232	71	241	82	105	112	138	435	80	100	0.42	1.33
31966.065	8.35	122	230	65	233	78	105	112	138	435	80	100	0.42	1.33
31966.066	8.35	122	230	65	233	78	105	112	138	435	80	100	0.42	1.33
31966.067	8.35	122	230	65	233	78	105	112	138	435	80	100	0.42	1.33
31966.068	8.35	122	230	65	233	78	105	112	138	435	80	100	0.42	1.33
31966.069	8.35	122	230	65	233	78	105	112	138	435	80	100	0.42	1.33
31966.070	8.38	124	235	73	244	84	95	106	133	430	80	100	0.42	1.33
31966.071	8.38	124	235	73	244	84	95	106	133	430	80	100	0.42	1.33
31966.072	8.38	124	235	73	244	84	95	106	133	430	80	100	0.42	1.33
31966.073	8.38	124	235	73	244	84	95	106	133	430	80	100	0.42	1.33
31966.074	8.38	124	235	73	244	84	95	106	133	430	80	100	0.42	1.33
31966.075	8.27	121	226	70	230	76	95	106	133	430	80	100	0.42	1.33
31966.076	8.27	121	226	70	230	76	95	106	133	430	80	100	0.42	1.33
31966.077	8.27	121	226	70	230	76	95	106	133	430	80	100	0.42	1.33
31966.078	8.27	121	226	70	230	76	95	106	133	430	80	100	0.42	1.33
31966.079	8.27	121	226	70	230	76	95	106	133	430	80	100	0.42	1.33
31966.080	8.59	123	230	75	240	81	102	115	136	432	80	100	0.42	1.33

*All Values are MARV.

Product : GE180-180

ROLL #	WEIGHT	THICKNESS	MD TENSILE	MD ELONG	XMD TENSILE	XMD ELONG	MD TRAP	XMD TRAP	PUNCTURE	MULLEN	AOS	WATER FLOW	PERMEABILITY	PERMITTIVITY
ASTM METHOD	D5261	D5199	D4632	D4632	D4632	D4632	D4533	D4533	D4833	D3786	D4751	D4491	D4491	D4491
UNITS	oz/sq yd	(mils)	lbs.	%	lbs	%	lbs.	lbs	lbs.	psi	US Sieve	gpm/ft^2	cm/sec	sec^{-1}
TARGET	8.00	100	225	50	225	50	90	90	130	425	80	100	0.30	1.26
31966.081	8.59	123	230	75	240	81	102	115	136	432	80	100	0.42	1.33
31966.082	8.59	123	230	75	240	81	102	115	136	432	80	100	0.42	1.33
31966.083	8.59	123	230	75	240	81	102	115	136	432	80	100	0.42	1.33
31966.084	8.59	123	230	75	240	81	102	115	136	432	80	100	0.42	1.33
31966.085	8.13	120	228	67	232	79	102	115	136	432	80	100	0.42	1.33
31966.086	8.13	120	228	67	232	79	102	115	136	432	80	100	0.42	1.33
31966.087	8.13	120	228	67	232	79	102	115	136	432	80	100	0.42	1.33
31966.088	8.13	120	228	67	232	79	102	115	136	432	80	100	0.42	1.33
31966.089	8.13	120	228	67	232	79	102	115	136	432	80	100	0.42	1.33
31966.090	8.45	125	233	72	242	83	98	103	131	427	80	100	0.42	1.33
31966.091	8.45	125	233	72	242	83	98	103	131	427	80	100	0.42	1.33
31966.092	8.45	125	233	72	242	83	98	103	131	427	80	100	0.42	1.33
31966.093	8.45	125	233	72	242	83	98	103	131	427	80	100	0.42	1.33
31966.094	8.45	125	233	72	242	83	98	103	131	427	80	100	0.42	1.33
31966.095	8.30	122	225	69	234	77	98	103	131	427	80	100	0.42	1.33
31966.096	8.30	122	225	69	234	77	98	103	131	427	80	100	0.42	1.33
31966.097	8.30	122	225	69	234	77	98	103	131	427	80	100	0.42	1.33
31966.098	8.30	122	225	69	234	77	98	103	131	427	80	100	0.42	1.33
31966.099	8.30	122	225	69	234	77	98	103	131	427	80	100	0.42	1.33
31966.100	8.36	124	231	74	238	80	100	113	140	434	80	102	0.43	1.36
31966.101	8.36	124	231	74	238	80	100	113	140	434	80	102	0.43	1.36
31966.102	8.36	124	231	74	238	80	100	113	140	434	80	102	0.43	1.36
31966.103	8.36	124	231	74	238	80	100	113	140	434	80	102	0.43	1.36
31966.104	8.36	124	231	74	238	80	100	113	140	434	80	102	0.43	1.36
31966.105	8.26	121	229	66	231	75	100	113	140	434	80	102	0.43	1.36
31966.106	8.26	121	229	66	231	75	100	113	140	434	80	102	0.43	1.36
31966.107	8.26	121	229	66	231	75	100	113	140	434	80	102	0.43	1.36
31966.108	8.26	121	229	66	231	75	100	113	140	434	80	102	0.43	1.36
31966.109	8.26	121	229	66	231	75	100	113	140	434	80	102	0.43	1.36
31966.110	8.52	123	234	71	243	82	96	105	134	429	80	102	0.43	1.36
31966.111	8.52	123	234	71	243	82	96	105	134	429	80	102	0.43	1.36
31966.112	8.52	123	234	71	243	82	96	105	134	429	80	102	0.43	1.36
31966.113	8.52	123	234	71	243	82	96	105	134	429	80	102	0.43	1.36
31966.114	8.52	123	234	71	243	82	96	105	134	429	80	102	0.43	1.36
31966.115	8.15	120	226	68	237	78	96	105	134	429	80	102	0.43	1.36
31966.116	8.15	120	226	68	237	78	96	105	134	429	80	102	0.43	1.36
31966.117	8.15	120	226	68	237	78	96	105	134	429	80	102	0.43	1.36
31966.118	8.15	120	226	68	237	78	96	105	134	429	80	102	0.43	1.36
31966.119	8.15	120	226	68	237	78	96	105	134	429	80	102	0.43	1.36
31966.120	8.46	125	230	73	239	84	103	111	137	431	80	102	0.43	1.36

*All Values are MARV.

SKAPS Industries (Nonwoven Division)
335 Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: info @skaps.com

Sales Office:
Engineered Synthetics Products Inc.
Phone: (770) 564-1857
Fax: (770) 564-1818

Date: May 1st, 2017

Republic Waste Services
Bridgeton Landfill - Phase 1A and 1B Cover
PO#: PO6472936

SUBJECT: Annual UV Resistance Testing for SKAPS Industries Products

To whom it may concern,

This letter is to inform that SKAPS Industries certifies UV Resistance based on third party testing annually. SKAPS Industries certifies its products to retain at least 70% of its strength after being exposed to direct UV for five-hundred (500) hours (ASTM D 4355). SKAPS Industries nonwoven geotextiles are composed of one-hundred percent virgin raw polypropylene material. Therefore, all GT and GE products are composed of identical raw polypropylene fibers.

Attached to this document is the third party annual testing result for UV Resistance performed in 2017 for SKAPS Industries' GT131. SKAPS Industries' GE160 and GE180 supplied are heavier and thicker fabrics, therefore, will retain a greater amount of strength after exposed in the UV Resistance chamber in comparison to SKAPS GT131. SKAPS Industries certifies that the GE160 and GE180 supplied to this project will meet or exceed the requirements of UV Resistance.

Please feel free to contact SKAPS Industries if you have any questions.

Regards,

Kourosh Sabzevari
Quality Control Manager

2/15/2017

Mail To:

Kourosh R. Sabzevari
SKAPS Industries
335 Athena Drive
Athens, Georgia 30601

email: kourosh@skaps.com
email: anurag@skaps.com

Bill To:

<= Same

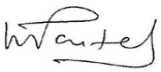
Dear Mr. Sabzevari:

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:	**Third Party Testing - GT131 UV Resistance**
TRI Job Reference Number:	26543
Material(s) Tested:	One, Skaps GT 131 Geotextile
Test(s) Requested:	UV Resistance (ASTM D 4355)

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
www.GeosyntheticTesting.com

*Signature is on file

GEOTEXTILE TEST RESULTS
TRI Client: SKAPS Industries
Project: Third Party Testing - GT131 UV Resistance

Material: Skaps GT 131 Geotextile
Sample Identification: GT131
TRI Log #: 26543

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
UV Resistance (ASTM D 4355)													
Strength Retained measured via strip tensile (ASTM D 5035)													PERCENT RETAINED
MD - Tensile Strength (lbs) - B	80	97	101	97	101						**95**	9	9.15
MD - Tensile Strength (ppi) - B	40	49	51	49	51						**48**	4	
MD - Tensile Strength (N) - B	356	432	449	432	449						**424**	39	
MD - Tensile Strength (kN/m) - B	7.0	8.5	8.8	8.5	8.8						**8.3**	0.8	
MD - Tensile Strength (lbs) - E	80	69	95	95	72						**82**	12	15.03
MD - Tensile Strength (ppi) - E	40	35	48	48	36						**41**	6	
MD - Tensile Strength (N) - E	356	307	423	423	320						**366**	55	
MD - Tensile Strength (kN/m) - E	7.0	6.0	8.3	8.3	6.3						**7.2**	1.1	**86**
TD - Tensile Strength (lbs) - B	105	123	100	113	116						**111**	9	8.14
TD - Tensile Strength (ppi) - B	53	62	50	57	58						**56**	5	
TD - Tensile Strength (N) - B	467	547	445	503	516						**496**	40	
TD - Tensile Strength (kN/m) - B	9.2	10.8	8.8	9.9	10.2						**9.8**	0.8	
TD - Tensile Strength (lbs) - E	104	88	101	100	86						**96**	8	8.56
TD - Tensile Strength (ppi) - E	52	44	51	50	43						**48**	4	
TD - Tensile Strength (N) - E	463	392	449	445	383						**426**	36	
TD - Tensile Strength (kN/m) - E	9.1	7.7	8.8	8.8	7.5						**8.4**	0.7	**86**
MD - Elong. @ Max. Load (%) - B	69	72	69	69	74						**71**	2	
MD - Elong. @ Max. Load (%) - E	63	43	67	62	57						**58**	9	**83**
TD - Elong. @ Max. Load (%) - B	86	91	85	87	89						**88**	2	
TD - Elong. @ Max. Load (%) - E	72	65	77	73	65						**70**	5	**80**

B - Baseline Unexposed
E - Exposed for 500 hours of ASTM D 4355 Cycle

MD Machine Direction TD Transverse Direction

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

May 15, 2017

Mail To:

Brad Vits
Feezor Engineering Inc.
406 East Walnut
Chatham, IL 62258

email: bvits@feezorengineering.com

Bill To:

<= Same (P.O. # BT-125)

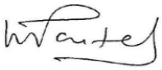
Dear Mr. Vits:

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:	**North Quarry Phase 1 EVOH Cover**
TRI Job Reference Number:	28750
Material(s) Tested:	One, SKAPS 6 oz Nonwoven Geotextile(s)
Test(s) Requested:	CBR Puncture Strength (ASTM D 6241)

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
www.GeosyntheticTesting.com

*Signature is on file

GEOTEXTILE TEST RESULTS
TRI Client: Feezor Engineering Inc.
Project: North Quarry Phase 1 EVOH Cover

Material: SKAPS 6 oz Nonwoven Geotextile
Sample Identification: 45619.28
TRI Log #: 28750

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
CBR Puncture Strength (ASTM D 6241)												
Puncture Resistance (lbs)	587	476	560	561	377	521	575	595	542	611	**541**	69

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

Sub-Appendix B.3

Geocomposite Manufacturer's Quality Control Data

December 27, 2016
Republic Waste Services

Ref. : RWS Bridgeton Landfill, MO
Customer P.O. #
Product : TN 220-2-6

We hereby certify that the TN 220-2-6 drainage geocomposite, meets or exceeds the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Value	Qualifier
Geonet[3]				
Thickness	ASTM D 5199	mil	200	MAV[6]
Carbon Black	ASTM D 4218	%	2.0	MAV
Tensile Strength	ASTM D 7179	lbs/in	45	MAV
Melt Flow	ASTM D 1238[2]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.94	MAV
Transmissivity[1a]	ASTM D 4716	m^2/sec	2.0×10^{-3}	MAV
Composite				
Ply Adhesion	ASTM D 7005	lb/in	1.0	MAV
Transmissivity[1b]	ASTM D 4716	m^2/sec	1.0×10^{-4}	MAV
Geotextile[3 & 4]				
Fabric Weight	ASTM D 5261	oz/yd^2	6.0	MARV[5]
Grab Strength	ASTM D 4632	lbs	160	MARV
Grab Elongation	ASTM D 4632	%	50	MARV
Trap Tear Strength	ASTM D 4533	lbs	65	MARV
CBR Puncture	ASTM D 6241	lbs	450	MARV
Permittivity	ASTM D 4491	sec^{-1}	1.63	MARV
Permeability	ASTM D 4491	cm/sec	0.30	MARV
AOS	ASTM D 4751	US Sieve	70	MaxARV
UV Resistance	ASTM D 4355	%/hrs	70/500	MARV

Notes:

1a. Transmissivity measured using water at 21 ± 2 ° C (70 ± 4 ° F) with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes.

1b. Transmissivity measured using water at 21 ± 2 ° C (70 ± 4 ° F) with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes.

2. Condition 190/2.16

3. Geotextile and Geonet properties are prior to lamination.

4. Geotextile data is provided by the supplier.

5. MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

6. Minium average value

Sincerely,
Rajesh Patel
Rajesh Patel
QA Manager

APPROVED 5 QA

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Product: TN 220-2-6
Project : RWS Bridgeton Landfill, MO

We hereby certify the following test results for the above referenced product/project :

Geocomposite				Geonet					
Roll Number	Ply Adhesion (lb/in)		Transmissivity (m^2/sec)	Resin Lot Number	Density (g/cm^3)	Thickness (mils)	Carbon Black (%)	Tensile Strength MD (lb/in)	Transmissivity (m^2/sec)
	Side "A"	Side "B"							
73681010001	1.86	2.33	3.03×10^{-4}	SHOX 004234	0.9531	224	2.28	59	3.31×10^{-3}
73681010002				SHOX 004234	0.9531				
73681010003				SHOX 004234	0.9531				
73681010004				SHOX 004234	0.9531				
73681010005				SHOX 004234	0.9531				
73681010006				SHOX 004234	0.9531				
73681010007				SHOX 004234	0.9531				
73681010008				SHOX 004234	0.9531				
73681010009				SHOX 004234	0.9531				
73681010010	2.21	1.67		SHOX 004234	0.9531	227	2.22	52	
73681010011				SHOX 004234	0.9531				
73681010012				SHOX 004234	0.9531				
73681010013				SHOX 004234	0.9531				
73681010014				SHOX 004234	0.9531				
73681010015				SHOX 004234	0.9531				
73681010016				SHOX 004234	0.9531				
73681010017				SHOX 004234	0.9531				
73681010018				SHOX 004234	0.9531				
73681010019				SHOX 004234	0.9531				
73681010020	1.50	1.84		SHOX 004234	0.9531	223	2.51	56	
73681010021				SHOX 004234	0.9531				
73681010022				SHOX 004234	0.9531				
73681010023				SHOX 004234	0.9531				
73681010024				SHOX 004234	0.9531				

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Product: **TN 220-2-6**
Project : **RWS Bridgeton Landfill, MO**

We hereby certify the following test results for the above referenced product/project :

Geocomposite				Geonet					
Roll Number	Ply Adhesion (lb/in)		Transmissivity (m^2/sec)	Resin Lot Number	Density (g/cm^3)	Thickness (mils)	Carbon Black (%)	Tensile Strength MD (lb/in)	Transmissivity (m^2/sec)
	Side "A"	Side "B"							
73681010025				SHOX 004234	0.9531				
73681010026				SHOX 004234	0.9531				
73681010027				SHOX 004234	0.9531				

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

POLYETHYLENE RESIN CERTIFICATION

Customer Name : Republic Waste Services
Project Name : RWS Bridgeton Landfill, MO
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN 220-2-6

We hereby certify the following test results for the above referenced product/project:

Resin Manufacturer	Resin Lot Number	Property	Test Method	Units	Resin Manufacturer Value	Tested Value*
Osterman and Company	SHOX 004234	Density	ASTM D1505	g/cm^3	0.9480	0.9482
		Melt flow Index	ASTM D1238[(a)]	g/10 min	0.11	0.14

(a) Condition 190/2.16

* Data from SKAPS Quality Control

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Geotextile Certification

Product: TN 220-2-6
Project : RWS Bridgeton Landfill, MO

We hereby certify the following test results for the above referenced product/project :

GEOCOMP ROLL#	FABRIC SIDE	WEIGHT oz/yd^2	GRAB lbs. (MD)	GRAB ELG % (MD)	GRAB lbs. (XMD)	GRAB ELG % (XMD)	TRAP lbs. (MD)	TRAP lbs. (XMD)	CBR PUNCTURE lbs	AOS us sieve	PERM-ABL cm/sec	PERM-ITY sec^{-1}
73681010001	Side A	6.31	160	74	173	84	71	87	465	70	0.52	1.82
	Side B	6.60	162	69	179	82	80	84	462	70	0.52	1.82
73681010020	Side A	6.31	160	74	173	84	71	87	465	70	0.52	1.82
	Side B	6.67	168	72	177	80	75	80	477	70	0.52	1.82

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Product GE 160 Project: RWS Bridgeton Landfill, MO

GT ROLL # ASTM METHOD UNITS	WEIGHT* D5261 oz/sq yd	MD GRAB D4632 lbs.	MD ELONG D4632 %	XMD GRAB D4632 lbs	XMD ELONG D4632 %	MD TRAP D4533 lbs.	XMD TRAP D4533 lbs	CBR PUNCTURE D6241 lbs.	AOS D4751 US Sieve	PERMEABILITY D4491 cm/sec	PERMITTIVITY D4491 sec^{-1}
7368.001	6.31	160	74	173	84	71	87	465	70	0.52	1.82
7368.002	6.31	160	74	173	84	71	87	465	70	0.52	1.82
7368.003	6.31	160	74	173	84	71	87	465	70	0.52	1.82
7368.004	6.60	162	69	179	82	80	84	462	70	0.52	1.82
7368.005	6.60	162	69	179	82	80	84	462	70	0.52	1.82
7368.006	6.60	162	69	179	82	80	84	462	70	0.52	1.82
7368.007	6.60	162	69	179	82	80	84	462	70	0.52	1.82
7368.008	6.67	168	72	177	80	75	80	477	70	0.52	1.82
7368.009	6.67	168	72	177	80	75	80	477	70	0.52	1.82
7368.010	6.67	168	72	177	80	75	80	477	70	0.52	1.82

Geocomposite - Side A	Geotextile - Side A	Geocomposite - Side B	Geotextile - Side B
73681010001	7368.003	73681010001	7368.006
73681010007	7368.008	73681010007	7368.002
73681010013	7368.005	73681010013	7368.004
73681010019	7368.001	73681010019	7368.009
73681010025	7368.010	73681010025	7368.007

March 29, 2017
Republic Waste Services

Ref. : RWS Bridgeton Landfill, MO
Customer P.O. # PO6472936
Product : TN 220-2-6

We hereby certify that the TN 220-2-6 drainage geocomposite, meets or exceeds the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Value	Qualifier
Geonet[3]				
Thickness	ASTM D 5199	mil	200	MAV[6]
Carbon Black	ASTM D 4218	%	2.0	MAV
Tensile Strength	ASTM D 7179	lbs/in	45	MAV
Melt Flow	ASTM D 1238[2]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.94	MAV
Transmissivity[1a]	ASTM D 4716	m^2/sec	2.0×10^{-3}	MAV
Composite				
Ply Adhesion	ASTM D 7005	lb/in	1.0	MAV
Transmissivity[1b]	ASTM D 4716	m^2/sec	1.0×10^{-4}	MAV
Geotextile[3 & 4]				
Fabric Weight	ASTM D 5261	oz/yd^2	6.0	MARV[5]
Grab Strength	ASTM D 4632	lbs	160	MARV
Grab Elongation	ASTM D 4632	%	50	MARV
Trap Tear Strength	ASTM D 4533	lbs	65	MARV
CBR Puncture	ASTM D 6241	lbs	450	MARV
Permittivity	ASTM D 4491	sec^{-1}	1.63	MARV
Permeability	ASTM D 4491	cm/sec	0.30	MARV
AOS	ASTM D 4751	US Sieve	70	MaxARV
UV Resistance	ASTM D 4355	%/hrs	70/500	MARV

Notes:

1a. Transmissivity measured using water at 21 ± 2 ° C (70 ± 4 ° F) with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes.

1b. Transmissivity measured using water at 21 ± 2 ° C (70 ± 4 ° F) with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes.

2. Condition 190/2.16

3. Geotextile and Geonet properties are prior to lamination.

4. Geotextile data is provided by the supplier.

5. MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

6. Minium average value

Sincerely,
Rajesh Patel
Rajesh Patel
QA Manager

APPROVED 5 QA

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Product: **TN 220-2-6**
Project : **RWS Bridgeton Landfill, MO**

We hereby certify the following test results for the above referenced product/project :

Geocomposite				Geonet					
Roll Number	Ply Adhesion (lb/in)		Transmissivity (m^2/sec)	Resin Lot Number	Density (g/cm^3)	Thickness (mils)	Carbon Black (%)	Tensile Strength MD (lb/in)	Transmissivity (m^2/sec)
	Side "A"	Side "B"							
74881010001	1.49	1.96	3.02×10^{-4}	NAHX 610271	0.9511	228	2.27	59	3.07×10^{-3}
74881010002				NAHX 610271	0.9511				
74881010003				NAHX 610271	0.9511				

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

POLYETHYLENE RESIN CERTIFICATION

Customer Name : Republic Waste Services
Project Name : RWS Bridgeton Landfill, MO
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN 220-2-6

We hereby certify the following test results for the above referenced product/project:

Resin Manufacturer	Resin Lot Number	Property	Test Method	Units	Resin Manufacturer Value	Tested Value*
Chevron Phillips Chemical Company	NAHX 610271	Density	ASTM D1505	g/cm^3	0.9460	0.9463
		Melt flow Index	ASTM D1238[(a)]	g/10 min	0.16	0.17

(a) Condition 190/2.16

* Data from SKAPS Quality Control

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Geotextile Certification

Product: TN 220-2-6
Project : RWS Bridgeton Landfill, MO

We hereby certify the following test results for the above referenced product/project :

GEOCOMP ROLL#	FABRIC SIDE	WEIGHT oz/yd^2	GRAB lbs. (MD)	GRAB ELG % (MD)	GRAB lbs. (XMD)	GRAB ELG % (XMD)	TRAP lbs. (MD)	TRAP lbs. (XMD)	CBR PUNCTURE lbs	AOS us sieve	PERM-ABL cm/sec	PERM-ITY sec^{-1}
74881010001	Side A	6.62	169	65	177	84	77	81	496	70	0.50	1.79
	Side B	6.62	169	65	177	84	77	81	496	70	0.50	1.79

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

June 29, 2017
Republic Waste Services

Ref. : RWS Bridgeton Landfill, MO
Customer P.O. # PO6666316
Product : TN 220-2-6

We hereby certify that the TN 220-2-6 drainage geocomposite, meets or exceeds the project requirements as stated in the specifications. The properties listed in this section are:

Property	Test Method	Unit	Value	Qualifier
Geonet[3]				
Thickness	ASTM D 5199	mil	200	MAV[6]
Carbon Black	ASTM D 4218	%	2.0	MAV
Tensile Strength	ASTM D 7179	lbs/in	45	MAV
Melt Flow	ASTM D 1238[2]	g/10 min	1.0	Maximum
Density	ASTM D 1505	g/cm^3	0.94	MAV
Transmissivity[1a]	ASTM D 4716	m^2/sec	2.0×10^{-3}	MAV
Composite				
Ply Adhesion	ASTM D 7005	lb/in	1.0	MAV
Transmissivity[1b]	ASTM D 4716	m^2/sec	1.0×10^{-4}	MAV
Geotextile[3 & 4]				
Fabric Weight	ASTM D 5261	oz/yd^2	6.0	MARV[5]
Grab Strength	ASTM D 4632	lbs	160	MARV
Grab Elongation	ASTM D 4632	%	50	MARV
Trap Tear Strength	ASTM D 4533	lbs	65	MARV
CBR Puncture	ASTM D 6241	lbs	450	MARV
Permittivity	ASTM D 4491	sec^{-1}	1.63	MARV
Permeability	ASTM D 4491	cm/sec	0.30	MARV
AOS	ASTM D 4751	US Sieve	70	MaxARV
UV Resistance	ASTM D 4355	%/hrs	70/500	MARV

Notes:

1a. *Transmissivity measured using water at 21 ± 2 ° C (70 ± 4 ° F) with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes.*
1b. *Transmissivity measured using water at 21 ± 2 ° C (70 ± 4 ° F) with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes.*
2. *Condition 190/2.16*
3. *Geotextile and Geonet properties are prior to lamination.*
4. *Geotextile data is provided by the supplier.*
5. *MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.*
6. *Minium average value*

Sincerely,
Rajesh Patel
Rajesh Patel
QA Manager

APPROVED 5 QA

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Product: **TN 220-2-6**
Project : **RWS Bridgeton Landfill, MO**

We hereby certify the following test results for the above referenced product/project :

Geocomposite				Geonet					
Roll Number	Ply Adhesion (lb/in)		Transmissivity (m^2/sec)	Resin Lot Number	Density (g/cm^3)	Thickness (mils)	Carbon Black (%)	Tensile Strength MD (lb/in)	Transmissivity (m^2/sec)
	Side "A"	Side "B"							
76911010001	1.64	1.97	2.78×10^{-4}	AMCX 004619	0.9526	222	2.65	54	2.65×10^{-3}
76911010002				AMCX 004619	0.9526				
76911010003				AMCX 004619	0.9526				
76911010004				AMCX 004619	0.9526				
76911010005				AMCX 004619	0.9526				
76911010006				AMCX 004619	0.9526				
76911010007				AMCX 004619	0.9526				
76911010008				AMCX 004619	0.9526				
76911010009				AMCX 004619	0.9526				
76911010010	2.14	1.76		AMCX 004619	0.9526	221	2.63	58	

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

POLYETHYLENE RESIN CERTIFICATION

Customer Name : Republic Waste Services
Project Name : RWS Bridgeton Landfill, MO
Geocomposite Manufacturer : SKAPS Industries
Geocomposite Production Plant : Commerce, GA
Geocomposite Brand Name : TN 220-2-6

We hereby certify the following test results for the above referenced product/project:

Resin Manufacturer	Resin Lot Number	Property	Test Method	Units	Resin Manufacturer Value	Tested Value*
INEOS USA	AMCX 004619	Density	ASTM D1505	g/cm^3	0.9480	0.9478
		Melt flow Index	ASTM D1238[(a)]	g/10 min	0.27	0.29

(a) Condition 190/2.16

* Data from SKAPS Quality Control

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

Geotextile Certification

Product: **TN 220-2-6**
Project : **RWS Bridgeton Landfill, MO**

We hereby certify the following test results for the above referenced product/project :

GEOCOMP ROLL#	FABRIC SIDE	WEIGHT oz/yd^2	GRAB lbs. (MD)	GRAB ELG % (MD)	GRAB lbs. (XMD)	GRAB ELG % (XMD)	TRAP lbs. (MD)	TRAP lbs. (XMD)	CBR PUNCTURE lbs	AOS us sieve	PERM-ABL cm/sec	PERM-ITY sec^{-1}
76911010001	Side A	6.27	162	75	174	80	71	84	488	70	0.51	1.81
	Side B	6.39	163	67	172	77	78	81	499	70	0.51	1.81

*571 Industrial Parkway, Commerce, GA 30529 * Ph : 706-336-7000 * Fax : 706-336-7007 * Email : contact@skaps.com*

SKAPS Industries (Nonwoven Division)
335 Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: info @skaps.com

Sales Office:
Engineered Synthetics Products Inc.
Phone: (770) 564-1857
Fax: (770) 564-1818

Date: May 1st, 2017

Republic Waste Services
Bridgeton Landfill - Phase 1A and 1B Cover
PO#: PO6472936

SUBJECT: Annual UV Resistance Testing for SKAPS Industries Products

To whom it may concern,

This letter is to inform that SKAPS Industries certifies UV Resistance based on third party testing annually. SKAPS Industries certifies its products to retain at least 70% of its strength after being exposed to direct UV for five-hundred (500) hours (ASTM D 4355). SKAPS Industries nonwoven geotextiles are composed of one-hundred percent virgin raw polypropylene material. Therefore, all GT and GE products are composed of identical raw polypropylene fibers.

Attached to this document is the third party annual testing result for UV Resistance performed in 2017 for SKAPS Industries' GT131. SKAPS Industries' GE160 and GE180 supplied are heavier and thicker fabrics, therefore, will retain a greater amount of strength after exposed in the UV Resistance chamber in comparison to SKAPS GT131. SKAPS Industries certifies that the GE160 and GE180 supplied to this project will meet or exceed the requirements of UV Resistance.

Please feel free to contact SKAPS Industries if you have any questions.

Regards,

Kourosh Sabzevari
Quality Control Manager

2/15/2017

Mail To:

Kourosh R. Sabzevari
SKAPS Industries
335 Athena Drive
Athens, Georgia 30601

email: kourosh@skaps.com
email: anurag@skaps.com

Bill To:

<= Same

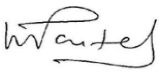
Dear Mr. Sabzevari:

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:	**Third Party Testing - GT131 UV Resistance**
TRI Job Reference Number:	26543
Material(s) Tested:	One, Skaps GT 131 Geotextile
Test(s) Requested:	UV Resistance (ASTM D 4355)

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
www.GeosyntheticTesting.com

*Signature is on file

GEOTEXTILE TEST RESULTS
TRI Client: SKAPS Industries
Project: Third Party Testing - GT131 UV Resistance

Material: Skaps GT 131 Geotextile
Sample Identification: GT131
TRI Log #: 26543

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.
	1	2	3	4	5	6	7	8	9	10			
UV Resistance (ASTM D 4355)													
Strength Retained measured via strip tensile (ASTM D 5035)													PERCENT RETAINED
MD - Tensile Strength (lbs) - B	80	97	101	97	101						**95**	9	9.15
MD - Tensile Strength (ppi) - B	40	49	51	49	51						**48**	4	
MD - Tensile Strength (N) - B	356	432	449	432	449						**424**	39	
MD - Tensile Strength (kN/m) - B	7.0	8.5	8.8	8.5	8.8						**8.3**	0.8	
MD - Tensile Strength (lbs) - E	80	69	95	95	72						**82**	12	15.03
MD - Tensile Strength (ppi) - E	40	35	48	48	36						**41**	6	
MD - Tensile Strength (N) - E	356	307	423	423	320						**366**	55	
MD - Tensile Strength (kN/m) - E	7.0	6.0	8.3	8.3	6.3						**7.2**	1.1	**86**
TD - Tensile Strength (lbs) - B	105	123	100	113	116						**111**	9	8.14
TD - Tensile Strength (ppi) - B	53	62	50	57	58						**56**	5	
TD - Tensile Strength (N) - B	467	547	445	503	516						**496**	40	
TD - Tensile Strength (kN/m) - B	9.2	10.8	8.8	9.9	10.2						**9.8**	0.8	
TD - Tensile Strength (lbs) - E	104	88	101	100	86						**96**	8	8.56
TD - Tensile Strength (ppi) - E	52	44	51	50	43						**48**	4	
TD - Tensile Strength (N) - E	463	392	449	445	383						**426**	36	
TD - Tensile Strength (kN/m) - E	9.1	7.7	8.8	8.8	7.5						**8.4**	0.7	**86**
MD - Elong. @ Max. Load (%) - B	69	72	69	69	74						**71**	2	
MD - Elong. @ Max. Load (%) - E	63	43	67	62	57						**58**	9	**83**
TD - Elong. @ Max. Load (%) - B	86	91	85	87	89						**88**	2	
TD - Elong. @ Max. Load (%) - E	72	65	77	73	65						**70**	5	**80**

B - Baseline Unexposed
E - Exposed for 500 hours of ASTM D 4355 Cycle

MD Machine Direction TD Transverse Direction

TRI ENVIRONMENTAL, INC.
9063 BEE CAVES RD. – AUSTIN, TX 78733 – USA | PH: 800.880.TEST OR 512.263.2101

APPENDIX C

GEOSYNTHETIC INSTALLATION DATA

Sub-Appendices

Sub-Appendix C.1

Installer's Subgrade Acceptance Forms

American Environmental Group Ltd.

CERTIFICATE OF SOIL SURFACE ACCEPTANCE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY:	American Environmental Group, Ltd.	OWNER:	Republic Services
ADDRESS:	3600 Brecksville Rd, Suite 100	PROJECT:	Bridgeton Closure
	Richfield, OH 44286	LOCATION:	Bridgeton, MO 63044
		PROJECT #:	30317130

I the Undersigned, a duly authorized representative of American Environmental Group, Ltd., do hereby accept the area of soil surface bounded by the secondary geomembrane liner as an acceptable surface to install geosynthetic materials.

Arron Weber	Arron Weber	CQA	6/08/17
NAME	SIGNATURE	TITLE	DATE

CERTIFICATE OF ACCEPTANCE RECEIVED BY CQA RESIDENT MANAGER

TRAN PHONG		QA	6.29.17
NAME	SIGNATURE	TITLE	DATE

CERTIFICATE OF ACCEPTANCE RECEIVED BY THE OWNER

NAME	SIGNATURE	TITLE	DATE

5-17-17 through 6-22-17

Panels 1-285

Sub-Appendix C.2

Panel Placement Forms

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
1	5/17/2017	7174686	7:15 AM	SLOPE	85	16	1,360	AAW	
2	5/17/2017	7174686	7:40 AM	SLOPE	89	16	1,424	AAW	
3	5/17/2017	7174686	7:55 AM	SLOPE	91	16	1,456	AAW	
4	5/17/2017	7174686	8:10 AM	SLOPE	92	16	1,472	AAW	
5	5/17/2017	7174686	8:15 AM	SLOPE	96	16	1,536	AAW	
6	5/17/2017	7174686	8:25 AM	SLOPE	98	16	1,568	AAW	
7	5/18/2017	7191049	7:20 AM	SLOPE	103	16	1,648	AAW	
8	5/18/2017	7191049	7:35 AM	SLOPE	109	16	1,744	AAW	
9	5/18/2017	7191049	7:42 AM	SLOPE	103	16	1,648	AAW	
10	5/18/2017	7191049	7:50 AM	SLOPE	108	16	1,728	AAW	
11	5/18/2017	7191049	8:00 AM	SLOPE	113	16	1,808	AAW	
12	5/18/2017	7191049	8:10 AM	SLOPE	32	16	512	AAW	
13	5/18/2017	7177494	8:20 AM	SLOPE	79	16	1,264	AAW	
14	5/18/2017	7177494	8:30 AM	SLOPE	109	16	1,744	AAW	
15	5/18/2017	7177494	8:40 AM	SLOPE	108	16	1,728	AAW	
16	5/18/2017	7177494	11:15 AM	SLOPE	108	16	1,728	AAW	
17	5/18/2017	7177494	11:20 AM	SLOPE	107	16	1,712	AAW	
18	5/18/2017	7177494	12:50 PM	SLOPE	60	16	960	AAW	
19	5/18/2017	7178919	1:00 PM	SLOPE	23	16	368	AAW	
20	5/18/2017	7178919	1:10 PM	SLOPE	107	16	1,712	AAW	
21	5/18/2017	7178919	1:20 PM	SLOPE	107	16	1,712	AAW	
22	5/18/2017	7178919	1:30 PM	SLOPE	106	16	1,696	AAW	
23	5/18/2017	7178919	1:40 PM	SLOPE	103	16	1,648	AAW	
24	5/18/2017	7178919	1:50 PM	SLOPE	99	16	1,584	AAW	
25	5/18/2017	7189137	2:15 PM	SLOPE	100	16	1,600	AAW	
26	5/18/2017	7189137	3:15 PM	SLOPE	45	15	675	AAW	
27	5/18/2017	7189137	3:20 PM	SLOPE	103	16	1,648	AAW	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
28	5/22/2017	7189137	2:55 PM	SLOPE	55	16	440	AAW	Triangle /2
29	5/22/2017	7189137	3:10 PM	SLOPE	117	16	1,872	AAW	
30	5/22/2017	7189137	3:30 PM	SLOPE	132	16	2,112	AAW	
31	5/22/2017	7173687	3:50 PM	SLOPE	13	16	208	AAW	
32	5/22/2017	7173687	4:10 PM	SLOPE	29	16	232	AAW	Triangle /2
33	5/22/2017	7173687	4:30 PM	SLOPE	135	16	2,160	AAW	
34	5/22/2017	7173687	4:40 PM	SLOPE	86	16	1,376	AAW	
35	5/22/2017	7173687	4:50 PM	SLOPE	56	16	896	AAW	
36	5/22/2017	7173687	5:25 PM	SLOPE	154	16	2,464	AAW	
37	5/23/2017	7173687	9:20 AM	SLOPE	75	16	1,200	AAW	
38	5/23/2017	7175605	9:30 AM	SLOPE	81	16	1,296	AAW	
39	5/23/2017	7175605	9:40 AM	SLOPE	151	16	2,416	AAW	
40	5/24/2017	7175605	8:40 AM	SLOPE	157	16	2,512	AAW	
41	5/24/2017	7175605	9:10 AM	SLOPE	157	16	2,512	AAW	
42	5/24/2017	7177400	9:20 AM	SLOPE	130	16	2,080	AAW	
43	5/24/2017	7177400	9:50 AM	SLOPE	26	16	416	AAW	
44	5/24/2017	7177400	10:15 AM	SLOPE	73	16	1,168	AAW	
45	5/24/2017	7177400	10:30 AM	SLOPE	57	16	456	AAW	Triangle /2
46	5/24/2017	7177400	10:40 AM	SLOPE	25	16	400	AAW	
47	5/24/2017	7177400	10:50 AM	SLOPE	130	16	2,080	AAW	
48	5/24/2017	7177400	11:05 AM	SLOPE	103	16	1,648	AAW	
49	5/24/2017	7177400	11:15 AM	SLOPE	52	16	832	AAW	
50	5/24/2017	7190332	12:35 PM	SLOPE	23	16	368	AAW	
51	5/24/2017	7190332	12:40 PM	SLOPE	38	16	608	AAW	
52	5/25/2017	7190332	6:40 AM	SLOPE	30	14	210	AAW	Triangle /2
53	5/25/2017	7190332	6:50 AM	SLOPE	51.5	16	824	AAW	Length is avg. of both sides
54	5/25/2017	7190332	7:00 AM	SLOPE	107	16	1,712	AAW	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
55	5/25/2017	7190332	7:20 AM	SLOPE	113	16	1,808	AAW	
56	5/25/2017	7190332	7:30 AM	SLOPE	116	16	1,856	AAW	
57	5/25/2017	7190332	7:40 AM	SLOPE	59	16	944	AAW	
58	5/25/2017	7189739	7:50 AM	SLOPE	59	16	944	AAW	
59	5/25/2017	7189739	8:00 AM	SLOPE	68	16	1,088	AAW	
60	5/25/2017	7189739	8:15 AM	SLOPE	126	16	2,016	AAW	
61	5/25/2017	7189739	8:25 AM	SLOPE	130	16	2,080	AAW	
62	5/25/2017	7189739	8:50 AM	SLOPE	125	16	2,000	AAW	
63	5/25/2017	7190194	9:00 AM	SLOPE	142	16	2,272	AAW	
64	5/25/2017	7190194	9:15 AM	SLOPE	138	16	2,208	AAW	
65	5/25/2017	7190194	9:25 AM	SLOPE	10	14	70	AAW	Triangle /2
66	5/25/2017	7190194	9:35 AM	SLOPE	138	16	2,208	AAW	
67	5/25/2017	7190194	9:50 AM	SLOPE	136	16	2,176	AAW	
68	5/25/2017	7190889	2:05 PM	SLOPE	35	16	560	AAW	
69	5/25/2017	7190889	2:20 PM	SLOPE	50	16	800	AAW	
70	5/25/2017	7190889	2:30 PM	SLOPE	54	16	864	AAW	
71	5/25/2017	7190889	2:40 PM	SLOPE	140	16	2,240	AAW	
72	5/25/2017	7190889	2:50 PM	SLOPE	52	16	832	AAW	
73	5/25/2017	7190889	3:00 PM	SLOPE	170	16	2,720	AAW	
74	5/25/2017	7190889	3:10 PM	SLOPE	63	16	1,008	AAW	
75	5/25/2017	7171929	3:20 PM	SLOPE	86	16	1,376	AAW	
76	5/25/2017	7171929	3:35 PM	SLOPE	124	16	1,984	AAW	
77	5/25/2017	7171929	3:50 PM	SLOPE	100	16	1,600	AAW	
78	5/26/2017	7190775	8:55 AM	SLOPE	77	16	1,232	AAW	
79	5/26/2017	7190775	9:15 AM	SLOPE	50	16	800	AAW	
80	5/26/2017	7190775	9:25 AM	SLOPE	15.5	16	248	AAW	Length is avg. of both sides
81	5/31/2017	7190775	9:45 AM	SLOPE	17	13	221	AAW	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
82	5/31/2017	7190775	9:50 AM	SLOPE	38	16	608	AAW	
83	5/31/2017	7190775	9:55 AM	SLOPE	49	16	784	AAW	
84	5/31/2017	7190775	10:05 AM	SLOPE	59	16	944	AAW	
85	5/31/2017	7190775	10:15 AM	SLOPE	65	16	1,040	AAW	
86	5/31/2017	7190775	10:25 AM	SLOPE	79	16	1,264	AAW	
87	5/31/2017	7190775	10:35 AM	SLOPE	87	16	1,392	AAW	
88	5/31/2017	7179682	10:45 AM	SLOPE	99	16	1,584	AAW	
89	5/31/2017	7179682	1:20 PM	SLOPE	113	16	1,808	AAW	
90	5/31/2017	7179682	1:35 PM	SLOPE	124	16	1,984	AAW	
91	5/31/2017	7179682	1:47 PM	SLOPE	132	16	2,112	AAW	
92	5/31/2017	7179682	2:30 PM	SLOPE	83	16	1,328	AAW	
93	5/31/2017	7171929	2:40 PM	SLOPE	62	16	992	AAW	
94	5/31/2017	7171929	2:50 PM	SLOPE	172	16	2,752	AAW	
95	5/31/2017	7173374	3:00 PM	SLOPE	172	16	2,752	AAW	
96	5/31/2017	7173374	3:10 PM	SLOPE	173	16	2,768	AAW	
97	6/1/2017	7173374	11:32 AM	SLOPE	170	16	2,720	BJD	
98	6/1/2017	7173374	11:40 AM	SLOPE	45	16	720	BJD	
99	6/1/2017	7176308	12:35 PM	SLOPE	126	16	2,016	BJD	
100	6/1/2017	7176308	3:15 PM	SLOPE	173	16	2,768	BJD	
101	6/1/2017	7176308	3:35 PM	SLOPE	174	16	2,784	BJD	
102	6/1/2017	7176308	3:45 PM	SLOPE	47	16	752	BJD	
103	6/1/2017	7176308	3:55 PM	SLOPE	43	16	688	BJD	
104	6/1/2017	7188997	4:30 PM	SLOPE	132	16	2,112	BJD	
105	6/1/2017	7188997	4:45 PM	SLOPE	140	16	2,240	BJD	
106	6/1/2017	7188997	4:50 PM	SLOPE	52	16	832	BJD	
107	6/1/2017	7188997	4:56 PM	SLOPE	52	16	832	BJD	
108	6/1/2017	7188997	5:04 PM	SLOPE	128	16	2,048	BJD	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
109	6/1/2017	7176368	5:25 PM	SLOPE	129	16	2,064	BJD	
110	6/3/2017	7189388	7:35 AM	SLOPE	83	16	1,328	BJD	
111	6/3/2017	7189388	7:42 AM	SLOPE	75	16	1,200	BJD	
112	6/3/2017	7189388	7:52 AM	SLOPE	66	16	1,056	BJD	
113	6/3/2017	7189388	8:04 AM	SLOPE	66	16	1,056	BJD	
114	6/3/2017	7189388	8:12 AM	SLOPE	64	16	1,024	BJD	
115	6/3/2017	7189388	8:15 AM	SLOPE	66	16	1,056	BJD	
116	6/3/2017	7189388	8:21 AM	SLOPE	67	16	1,072	BJD	
117	6/3/2017	7189388	8:27 AM	SLOPE	60	16	960	BJD	
118	6/3/2017	7173290	8:35 AM	SLOPE	7	16	112	BJD	
119	6/3/2017	7173290	8:42 AM	SLOPE	69	16	1,104	BJD	
120	6/3/2017	7173290	9:00 AM	SLOPE	69	16	1,104	BJD	
121	6/3/2017	7173290	9:10 AM	SLOPE	66	16	1,056	BJD	
122	6/3/2017	7173290	9:19 AM	SLOPE	66	16	1,056	BJD	
123	6/3/2017	7173290	9:27 AM	SLOPE	67	16	1,072	BJD	
124	6/3/2017	7173290	9:35 AM	SLOPE	64	16	1,024	BJD	
125	6/3/2017	7173290	9:45 AM	SLOPE	63	16	1,008	BJD	
126	6/3/2017	7173290	9:50 AM	SLOPE	58.19	16	931	BJD	
127	6/3/2017	7175973	10:18 AM	SLOPE	57	16	912	BJD	
128	6/3/2017	7173290	10:20 AM	SLOPE	22	6	66	BJD	Triangle /2
129	6/3/2017	7175973	10:25 AM	SLOPE	53	16	848	BJD	
130	6/3/2017	7175973	10:31 AM	SLOPE	56	16	896	BJD	
131	6/3/2017	7175973	10:44 AM	SLOPE	54	16	864	BJD	
132	6/3/2017	7175973	10:52 AM	SLOPE	51.88	16	830	BJD	
133	6/3/2017	7175973	10:56 AM	SLOPE	27	7	95	BJD	Triangle /2
134	6/3/2017	7175973	11:05 AM	SLOPE	34	16	544	BJD	
135	6/3/2017	7175973	11:15 AM	SLOPE	35	16	560	BJD	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
136	6/3/2017	7175973	1:00 PM	SLOPE	83	16	1,328	BJD	
137	6/3/2017	7175973	1:15 PM	SLOPE	86	16	1,376	BJD	
138	6/3/2017	7176326	1:25 PM	SLOPE	47	16	752	BJD	
139	6/3/2017	7176326	1:33 PM	SLOPE	46	16	736	BJD	
140	6/3/2017	7176326	1:41 PM	SLOPE	47	16	752	BJD	
141	6/3/2017	7176326	1:44 PM	SLOPE	47	16	752	BJD	
142	6/3/2017	7176326	1:59 PM	SLOPE	43	16	688	BJD	
143	6/6/2017	7176368	11:13 AM	SLOPE	176	16	2,816	BJD	
PE1	6/6/2017	7176368	12:00 PM	SLOPE	13	12	156	BJD	
PE2	6/6/2017	7176368	12:10 PM	SLOPE	13	12	156	BJD	
144	6/6/2017	7176368	1:26 PM	SLOPE	175	16	2,800	BJD	
145	6/6/2017	7176368	1:40 PM	SLOPE	38	16	608	BJD	
146	6/6/2017	7171890	1:57 PM	SLOPE	148	16	2,368	BJD	
147	6/6/2017	7176347	2:10 PM	SLOPE	55	16	880	BJD	
148	6/6/2017	7176347	2:15 PM	SLOPE	44	16	704	BJD	
149	6/6/2017	7176347	2:19 PM	SLOPE	22	13	286	BJD	
150	6/6/2017	7176347	2:26 PM	SLOPE	32	16	256	BJD	Triangle /2
151	6/6/2017	7176347	2:32 PM	SLOPE	72	16	1,152	BJD	
152	6/6/2017	7176347	2:36 PM	SLOPE	137	16	2,192	BJD	
153	6/6/2017	7176347	2:44 PM	SLOPE	141	16	2,256	BJD	
154	6/6/2017	7177308	3:00 PM	SLOPE	22	16	352	BJD	
155	6/6/2017	7177308	3:10 PM	SLOPE	195	16	3,120	BJD	
156	6/7/2017	7177308	1:40 PM	SLOPE	208	16	3,328	BJD	
157	6/7/2017	7177308	1:50 PM	SLOPE	106	16	1,696	BJD	
158	6/7/2017	7176384	2:15 PM	SLOPE	108	16	1,728	BJD	
159	6/7/2017	7176384	3:25 PM	SLOPE	230	16	3,680	BJD	
160	6/7/2017	7176384	3:50 PM	SLOPE	217	16	3,472	BJD	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
161	6/7/2017	7176384	4:10 PM	SLOPE	8	16	128	BJD	
162	6/7/2017	7176173	4:30 PM	SLOPE	232	16	3,712	BJD	
163	6/7/2017	7176173	5:00 PM	SLOPE	208	16	3,328	BJD	
164	6/8/2017	7176173	1:26 PM	SLOPE	90	16	1,440	BJD	
165	6/8/2017	7176434	2:00 PM	SLOPE	77	16	1,232	BJD	
166	6/8/2017	7176434	2:15 PM	SLOPE	140	16	2,240	BJD	
167	6/8/2017	7176434	2:20 PM	SLOPE	126	16	2,016	BJD	
168	6/8/2017	7176434	2:48 PM	SLOPE	92	16	1,472	BJD	
169	6/8/2017	7176434	3:00 PM	SLOPE	44	16	704	BJD	
170	6/8/2017	7172809	3:25 PM	SLOPE	268	16	4,288	BJD	
171	6/8/2017	7172809	3:40 PM	SLOPE	267	16	4,272	BJD	
172	6/8/2017	7172809	3:50 PM	SLOPE	20	16	320	BJD	
173	6/8/2017	7080358	4:10 PM	SLOPE	158	16	2,528	BJD	
174	6/8/2017	7080358	4:17 PM	SLOPE	140	16	2,240	BJD	
175	6/8/2017	7080358	4:33 PM	SLOPE	103	16	1,648	BJD	
176	6/8/2017	7080358	4:44 PM	SLOPE	58	16	928	BJD	
177	6/8/2017	7080358	4:58 PM	SLOPE	35	16	280	BJD	Triangle /2
178	6/8/2017	7176434	5:15 PM	SLOPE	16	8	64	BJD	Triangle /2
PE3	6/9/2017	7080358	9:20 AM	SLOPE	13	16	208	BJD	
179	6/9/2017	7080198	10:00 AM	SLOPE	149	16	2,384	BJD	
180	6/9/2017	7080198	10:09 AM	SLOPE	52	16	832	BJD	
181	6/9/2017	7080198	10:29 AM	SLOPE	227	16	3,632	BJD	
182	6/9/2017	7080198	10:41 AM	SLOPE	95	16	1,520	BJD	
183	6/9/2017	7176218	11:06 AM	SLOPE	77	16	1,232	BJD	
184	6/9/2017	7176218	11:17 AM	SLOPE	62	16	992	BJD	
185	6/9/2017	7176218	11:25 AM	SLOPE	164	16	2,624	BJD	
186	6/9/2017	7176218	11:47 AM	SLOPE	91	16	1,456	BJD	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
187	6/9/2017	7176218	1:00 PM	SLOPE	102	16	1,632	BJD	
188	6/9/2017	7176218	1:15 PM	SLOPE	65	16	520	BJD	Triangle /2
189	6/9/2017	7081034	1:30 PM	SLOPE	162	16	2,592	BJD	
190	6/9/2017	7081034	2:00 PM	SLOPE	220	16	3,520	BJD	
191	6/9/2017	7081034	2:25 PM	SLOPE	122	16	1,952	BJD	
192	6/9/2017	7080628	2:39 PM	SLOPE	100	16	1,600	BJD	
193	6/9/2017	7080628	2:50 PM	SLOPE	211	16	3,376	BJD	
194	6/9/2017	7080628	3:00 PM	SLOPE	206	16	3,296	BJD	
195	6/9/2017	7080628	3:20 PM	SLOPE	49	16	784	BJD	
196	6/9/2017	7081551	4:00 PM	SLOPE	150	16	2,400	BJD	
197	6/9/2017	7081551	4:15 PM	SLOPE	190	16	3,040	BJD	
198	6/10/2017	7081551	7:10 AM	SLOPE	177	16	2,832	BJD	
199	6/10/2017	7081551	7:20 AM	SLOPE	40	16	640	BJD	
200	6/10/2017	7080533	8:00 AM	SLOPE	128	16	2,048	BJD	
201	6/10/2017	7080533	8:10 AM	SLOPE	157	16	2,512	BJD	
202	6/10/2017	7080533	8:17 AM	SLOPE	101	16	1,616	BJD	
203	6/10/2017	7080533	8:40 AM	SLOPE	50	16	800	BJD	
204	6/10/2017	7080533	8:58 AM	SLOPE	125	16	2,000	BJD	
205	6/12/2017	7174569	7:10 AM	SLOPE	19	16	304	BJD	
206	6/12/2017	7174569	7:19 AM	SLOPE	133	16	2,128	BJD	
207	6/12/2017	7174569	7:30 AM	SLOPE	126	16	2,016	BJD	
208	6/12/2017	7174569	8:15 AM	SLOPE	114	16	1,824	BJD	
209	6/13/2017	7080866	8:45 AM	SLOPE	63	16	1,008	BJD	
210	6/13/2017	7080866	9:00 AM	SLOPE	64	16	1,024	BJD	
211	6/13/2017	7080866	9:05 AM	SLOPE	61	16	976	BJD	
212	6/13/2017	7080866	9:11 AM	SLOPE	63	16	1,008	BJD	
213	6/13/2017	7080866	9:15 AM	SLOPE	33	13	429	BJD	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
214	6/13/2017	7080866	9:25 AM	SLOPE	35	16	560	BJD	
215	6/13/2017	7080866	9:30 AM	SLOPE	29	13	377	BJD	
216	6/13/2017	7080866	9:36 AM	SLOPE	29	16	464	BJD	
217	6/13/2017	7080866	9:45 AM	SLOPE	93	16	1,488	BJD	
218	6/13/2017	7080866	9:55 AM	SLOPE	87	16	1,392	BJD	
219	6/13/2017	7172029	10:05 AM	SLOPE	10	16	160	BJD	
220	6/13/2017	7172029	10:14 AM	SLOPE	91	16	1,456	BJD	
221	6/13/2017	7172029	10:22 AM	SLOPE	73	16	1,168	BJD	
222	6/13/2017	7172029	10:30 AM	SLOPE	19	16	304	BJD	
223	6/13/2017	7172029	10:41 AM	SLOPE	90	16	1,440	BJD	
224	6/14/2017	7172029	7:37 AM	SLOPE	90	16	1,440	BJD	
225	6/14/2017	7172029	7:45 AM	SLOPE	90	16	1,440	BJD	
226	6/14/2017	7172029	7:54 AM	SLOPE	89	16	1,424	BJD	
227	6/14/2017	7081930	9:10 AM	SLOPE	89	16	1,424	BJD	
228	6/14/2017	7081930	9:25 AM	SLOPE	89	16	1,424	BJD	
229	6/14/2017	7081930	9:37 AM	SLOPE	89	16	1,424	BJD	
230	6/14/2017	7081930	9:52 AM	SLOPE	89	16	1,424	BJD	
231	6/14/2017	7081930	10:07 AM	SLOPE	90	16	1,440	BJD	
232	6/14/2017	7081930	10:20 AM	SLOPE	61	16	976	BJD	
233	6/14/2017	7081930	10:30 AM	SLOPE	32	16	512	BJD	
234	6/14/2017	7172035	11:10 AM	SLOPE	90	16	1,440	BJD	
235	6/14/2017	7172035	11:28 AM	SLOPE	71	16	1,136	BJD	
236	6/14/2017	7172035	11:35 AM	SLOPE	23	16	368	BJD	
237	6/21/2017	7172035	8:10 AM	SLOPE	79	16	1,264	AAW	
238	6/21/2017	7172035	8:30 AM	SLOPE	80	16	1,280	AAW	
239	6/21/2017	7172035	8:55 AM	SLOPE	34	16	544	AAW	
240	6/21/2017	7172035	9:15 AM	SLOPE	50	16	800	AAW	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
241	6/21/2017	7080392	9:45 AM	SLOPE	87	16	1,392	AAW	
242	6/21/2017	7080392	10:00 AM	SLOPE	57	16	912	AAW	
243	6/21/2017	7080392	10:15 AM	SLOPE	36	16	576	AAW	
244	6/21/2017	7080392	10:30 AM	SLOPE	79	16	1,264	AAW	
245	6/21/2017	7080392	1:00 PM	SLOPE	71	16	1,136	AAW	
246	6/21/2017	7080392	1:20 PM	SLOPE	72	16	1,152	AAW	
247	6/21/2017	7080392	1:35 PM	SLOPE	56	16	896	AAW	
248	6/21/2017	7172035	1:45 PM	SLOPE	47	16	752	AAW	
249	6/21/2017	7172035	1:59 PM	SLOPE	40	16	640	AAW	
250	6/21/2017	7172035	2:15 PM	SLOPE	31	16	496	AAW	
251	6/21/2017	7172035	2:25 PM	SLOPE	24	16	384	AAW	
252	6/22/2017	7172216	7:25 AM	SLOPE	69	16	1,104	AAW	
253	6/22/2017	7172216	7:35 AM	SLOPE	32	16	512	AAW	
254	6/22/2017	7172216	7:45 AM	SLOPE	55	16	880	AAW	
255	6/22/2017	7172216	7:50 AM	SLOPE	59	16	944	AAW	
256	6/22/2017	7172216	8:00 AM	SLOPE	46	16	736	AAW	
257	6/22/2017	7172216	9:10 AM	SLOPE	34	16	544	AAW	
258	6/22/2017	7172216	9:20 AM	SLOPE	35	16	560	AAW	
259	6/22/2017	7172216	9:30 AM	SLOPE	35	16	560	AAW	
260	6/22/2017	7172216	9:40 AM	SLOPE	35	16	560	AAW	
261	6/22/2017	7172216	9:50 AM	SLOPE	36	16	576	AAW	
262	6/22/2017	7172216	9:59 AM	SLOPE	36	16	576	AAW	
263	6/22/2017	7172216	10:10 AM	SLOPE	35	16	560	AAW	
264	6/22/2017	7172216	10:20 AM	SLOPE	32	16	512	AAW	
265	6/22/2017	7172216	10:30 AM	SLOPE	30	16	480	AAW	
266	6/22/2017	7172216	10:50 AM	SLOPE	31	16	496	AAW	
267	6/22/2017	7172216	11:00 AM	SLOPE	28	16	448	AAW	

Geomembrane Panel Placement

Panel	Date Deployed	Roll Number	Deploy Time	Location	Length	Width	Final Area	QA ID	Comments
268	6/22/2017	7172216	11:20 AM	SLOPE	28	16	448	AAW	
269	6/22/2017	7172216	11:25 AM	SLOPE	26	16	416	AAW	
270	6/22/2017	7081252	2:50 PM	SLOPE	107	16	1,712	AAW	
271	6/22/2017	7081252	3:00 PM	SLOPE	38	16	608	AAW	
272	6/22/2017	7081252	3:15 PM	SLOPE	100	16	1,600	AAW	
273	6/22/2017	7081252	3:30 PM	SLOPE	38	16	608	AAW	
274	6/22/2017	7081252	3:40 PM	SLOPE	76	16	1,216	AAW	
275	6/22/2017	7081252	3:50 PM	SLOPE	64	16	1,024	AAW	
276	6/22/2017	7081252	4:00 PM	SLOPE	23	16	368	AAW	
277	6/22/2017	7080474	4:35 PM	SLOPE	19	15	285	AAW	
278	6/22/2017	7080474	4:45 PM	SLOPE	22	15	330	AAW	
279	6/22/2017	7080474	4:55 PM	SLOPE	63	12	756	AAW	
280	6/22/2017	7080474	4:05 PM	SLOPE	54	16	864	AAW	
281	6/22/2017	7080474	4:15 PM	SLOPE	111	16	1,776	AAW	
282	6/22/2017	7080474	5:25 PM	SLOPE	30	9	270	AAW	
283	6/22/2017	7080474	5:30 PM	SLOPE	93	16	1,488	AAW	
284	6/22/2017	7080474	5:35 PM	SLOPE	20	8	160	AAW	
285	6/22/2017	7080474	5:40 PM	SLOPE	44	16	704	AAW	
286	6/26/2017	7080474	3:30 PM	SLOPE	51	4	204	AAW	

Sub-Appendix C.3

Field Tensiometer Calibration Certificate

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension
Model No: M2405-750#
Serial No: **230339**

Calibration Apparatus:
Reference load cell (S/N 204781)

Dead Weight:

W1	2
W2	152
W3	302

Reference Cell:

R1	2
R2	152
R3	302

A/D Module Model No: T-057/06
A/D Module Serial No: **2508230339**
Channel No: N/A

Indicator reading with no load: 0

Offset: **-1.690870** Scale: **4.432524**

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: Erich Beck

Date: 04/07/17

Sub-Appendix C.4

Trial Weld Qualification Test Forms

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
5/17/2017	7:35 AM	TT	KS	F	45	76	3	850	-	-	125	132	123	145	153	148	AAW	P	
											123	124	115						
5/17/2017	7:50 AM	TT	May	F	2650	76	7	750	-	-	110	112	118	147	151	146	AAW	P	
											109	115	113						
5/17/2017	1:20 PM	TT	PH	X	211	85	-	-	500	530	115	120	151	150	152	150	AAW	P	
											-	-	-						
5/18/2017	7:34 AM	TT	KS	F	45	74	3	850	-	-	120	120	125	142	140	146	AAW	P	
											118	123	125						
5/18/2017	7:50 AM	TT	MAY	F	2650	74	7	750	-	-	112	112	117	162	160	160	AAW	P	
											123	123	120						
5/18/2017	1:00 PM	TT	KS	F	45	87	5	850	-	-	106	117	120	123	124	124	AAW	P	
											119	115	116						
5/18/2017	1:00 PM	TT	MAY	F	2650	87	7	750	-	-	108	98	108	125	123	126	AAW	P	
											101	100	106						
5/18/2017	3:00 PM	TT	MAY	X	211	80	-	-	500	500	113	117	118	130	138	139	AAW	P	
											-	-	-						
5/22/2017	8:30 AM	TT	MAY	X	211	65	-	-	500	500	127	137	135	140	146	148	AAW	P	
											-	-	-						
5/22/2017	3:10 PM	TT	KS	F	45	74	5	850	-	-	125	125	123	135	137	135	AAW	P	
											127	120	121						
5/22/2017	3:25 PM	TT	MAY	F	2650	74	7	750	-	-	115	110	117	138	135	140	AAW	P	
											112	118	120						
5/23/2017	9:30 AM	TT	KS	F	45	70	5	850	-	-	118	117	115	139	141	142	AAW	P	
											116	114	115						
5/23/2017	9:40 AM	TT	MAY	F	2650	70	7	750	-	-	112	108	116	128	130	141	AAW	P	
											118	120	118						
5/24/2017	8:50 AM	TT	KS	F	45	59	5	850	-	-	128	125	120	150	148	149	AAW	P	
											123	122	124						
5/24/2017	8:50 AM	TT	MAY	F	2650	59	7	750	-	-	120	121	119	140	142	138	AAW	P	
											116	118	117						
5/24/2017	12:35 PM	TT	KS	F	45	70	5	850	-	-	127	123	121	152	150	151	AAW	P	
											120	125	126						
5/25/2017	7:30 AM	TT	MAY	F	2650	59	7	750	-	-	118	123	120	160	112	170	AAW	P	
											117	121	120						
5/25/2017	7:20 AM	TT	KS	F	45	59	5	850	-	-	130	128	125	158	152	155	AAW	P	
											127	120	126						
5/25/2017	9:05 AM	TT	AG	X	112	59	-	-	450	550	113	119	115	155	158	152	AAW	P	
											-	-	-						
5/25/2017	1:55 PM	TT	KS	F	45	80	5	850	-	-	109	112	110	130	128	128	AAW	P	
											105	110	111						
5/25/2017	2:05 PM	TT	MAY	F	2650	80	7	750	-	-	115	112	114	125	123	125	AAW	P	
											115	116	115						
5/25/2017	2:45 PM	TT	AG	X	112	76	-	-	450	550	112	110	110	125	120	120	AAW	P	
											-	-	-						

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
5/26/2017	7:30 AM	TT	KS	F	45	60	5	850	-	-	118	120	119	150	145	145	AAW	P	
											115	119	112						
5/26/2017	9:15 AM	TT	AG	X	112	65	-	-	450	550	-	-	-	143	145	145	AAW	P	
											115	117	115						
5/26/2017	10:05 AM	TT	MAY	X	60	70	-	-	500	500	-	-	-	120	125	125	AAW	P	
											92	126	119						
5/26/2017	1:10 PM	TT	AG	X	112	70	-	-	500	550	-	-	-	120	110	102	AAW	P	
											97	122	101						
5/26/2017	1:00 PM	TT	MAY	X	60	70	-	-	500	500	-	-	-	133	132	122	AAW	P	
											121	118	126						
5/27/2017	8:00 AM	TT	MAY	X	60	72	-	-	500	500	-	-	-	140	138	132	AAW	P	
											120	123	125						
5/27/2017	8:30 AM	TT	AG	X	112	72	-	-	500	550	-	-	-	138	140	136	AAW	P	
											115	110	112						
5/27/2017	9:20 AM	TT	MAY	F	2650	75	7	750	-	-	116	117	114	140	136	135	AAW	P	
											120	115	113						
5/30/2017	8:20 AM	TT	May	F	2650	70	7	750	-	-	110	108	110	139	132	135	AAW	P	
											114	100	105						
5/30/2017	8:10 AM	TT	AG	X	211	70	-	-	500	550	108	102	100	133	130	129	AAW	P	
											-	-	-						
5/30/2017	1:00 PM	TT	May	F	2650	75	7	750	-	-	115	110	111	135	140	132	AAW	P	
											113	108	107						
5/30/2017	1:05 PM	TT	AG	X	211	75	-	-	450	500	105	109	108	122	120	120	AAW	P	
											-	-	-						
5/30/2017	2:25 PM	TT	May	X	60	75	-	-	500	500	110	112	110	125	128	125	AAW	P	
											-	-	-						
5/31/2017	10:00 AM	TT	KS	F	45	80	5	850	-	-	109	112	127	126	128	126	AAW	P	
											121	115	120						
5/31/2017	10:20 AM	TT	May	F	25	80	5	850	-	-	118	113	102	128	122	125	AAW	P	
											114	120	115						
5/31/2017	1:00 PM	TT	May	F	45	80	5	850	-	-	110	105	113	120	117	119	AAW	P	
											114	105	104						
5/31/2017	3:10 PM	TT	AG	X	211	80	-	-	500	550	-	-	-	114	116	113	AAW	P	
											115	107	104						
6/1/2017	7:40 AM	TT	AG	X	211	70	-	-	500	500	-	-	-	140	142	138	BJD	P	
											104	120	127						
6/1/2017	7:45 AM	TT	May	X	60	70	-	-	500	500	-	-	-	130	128	138	BJD	P	
											106	110	108						
6/1/2017	11:40 AM	TT	KS	F	45	75	6	850	-	-	118	114	116	128	126	126	BJD	P	
											115	113	115						
6/1/2017	1:00 PM	TT	AG	X	211	75	-	-	500	500	-	-	-	115	113	112	BJD	P	
											101	106	100						
6/1/2017	3:40 PM	TT	KS	F	45	75	6	850	-	-	112	109	113	118	120	120	BJD	P	
											120	123	120						

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
6/1/2017	3:35 PM	TT	May	F	25	75	5	850	-	-	103	124	117	125	120	120	BJD	P	
											112	111	120						
6/2/2017	7:50 AM	TT	May	X	60	70	-	-	500	500	120	115	107	123	120	120	BJD	P	
											-	-	-						
6/2/2017	7:47 AM	TT	AG	X	211	70	-	-	550	500	122	108	102	132	135	130	BJD	P	
											-	-	-						
6/2/2017	1:15 PM	TT	AG	X	83	85	-	-	550	500	115	108	103	120	108	122	BJD	P	
											-	-	-						
6/3/2017	7:15 AM	TT	KS	F	45	80	5	850	-	-	116	118	119	140	135	142	BJD	P	
											117	115	114						
6/3/2017	7:20 AM	TT	CC	F	25	80	5	850	-	-	116	123	122	135	132	132	BJD	P	
											104	106	116						
6/3/2017	9:00 AM	TT	AG	X	83	85	-	-	550	500	113	110	106	128	130	125	BJD	P	
											-	-	-						
6/3/2017	1:10 PM	TT	SP	F	45	90	6	850	-	-	102	109	106	105	112	109	BJD	P	
											102	109	101						
6/3/2017	1:12 PM	TT	CC	F	25	90	6	850	-	-	103	112	107	112	110	110	BJD	P	
											101	105	110						
6/3/2017	1:00 PM	TT	AG	X	83	90	-	-	550	500	101	103	106	112	114	112	BJD	P	
											-	-	-						
6/3/2017	3:40 PM	TT	VS	X	43	90	-	-	500	500	112	98	116	122	120	123	BJD	P	
											-	-	-						
6/6/2017	8:00 AM	TT	AG	X	211	70	-	-	550	500	106	118	119	130	126	126	BJD	P	
											-	-	-						
6/6/2017	8:30 AM	TT	SP	F	25	70	6	850	-	-	118	125	121	142	140	140	BJD	P	
											128	130	126						
6/6/2017	8:40 AM	TT	KS	F	45	70	6	850	-	-	126	130	128	137	132	130	BJD	P	
											123	130	126						
6/6/2017	1:30 PM	TT	AG	X	211	80	-	-	550	500	130	120	122	134	132	135	BJD	P	
											-	-	-						
6/6/2017	1:35 PM	TT	SP	F	25	80	6	850	-	-	132	127	130	136	135	135	BJD	P	
											134	128	129						
6/6/2017	1:40 PM	TT	KS	F	45	80	6	850	-	-	129	132	130	138	135	136	BJD	P	
											130	131	130						
6/7/2017	8:20 AM	TT	AG	X	211	80	-	-	550	500	118	122	120	120	122	122	BJD	P	
											-	-	-						
6/7/2017	12:35 PM	TT	AG	X	112	85	-	-	500	500	122	106	115	122	123	120	BJD	P	
											-	-	-						
6/7/2017	1:45 PM	TT	SP	F	25	85	6	850	-	-	140	143	125	140	132	136	BJD	P	
											136	138	126						
6/7/2017	4:00 PM	TT	KS	F	45	85	6	850	-	-	123	123	130	140	141	140	BJD	P	
											126	126	132						
6/8/2017	1:22 PM	TT	AG	F	2650	80	9	750	-	-	125	110	116	120	116	118	BJD	P	
											106	108	117						

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
6/8/2017	4:30 PM	TT	SP	F	2479	80	7	750	-	-	115	122	114	129	135	126	BJD	P	
											127	120	128						
6/9/2017	9:57 AM	TT	AG	F	2650	80	6	750	-	-	124	120	115	141	135	130	BJD	P	
											122	114	129						
6/9/2017	10:19 AM	TT	SP	F	2479	80	5	755	-	-	125	115	113	140	136	139	BJD	P	
											109	116	110						
6/9/2017	1:00 PM	TT	AG	F	2650	85	6	750	-	-	127	121	135	139	123	128	BJD	P	
											109	117	120						
6/9/2017	1:07 PM	TT	SP	F	2479	85	6	755	-	-	130	129	126	139	127	142	BJD	P	
											119	107	119						
6/10/2017	7:40 AM	TT	SP	F	2479	80	6	755	-	-	119	132	122	137	135	130	BJD	P	
											137	127	130						
6/10/2017	8:00 AM	TT	AG	F	2650	80	6	750	-	-	129	126	137	153	150	149	BJD	P	
											124	124	116						
6/10/2017	9:53 AM	TT	AG	X	112	80	-	-	400	500	-	-	-	133	130	128	BJD	P	
											96	110	99						
6/10/2017	12:56 PM	TT	AG	X	112	85	-	-	400	500	-	-	-	119	125	130	BJD	P	
											98	99	115						
6/10/2017	1:08 PM	TT	SP	F	45	85	5	850	-	-	137	138	140	133	142	140	BJD	P	
											110	135	129						
6/12/2017	7:43 AM	TT	AG	X	112	80	-	-	400	500	-	-	-	154	150	147	BJD	P	
											122	137	144						
6/12/2017	7:50 AM	TT	SP	X	2650	80	6	750	-	-	118	112	124	135	130	125	BJD	P	
											129	130	144						
6/12/2017	8:00 AM	TT	CC	F	45	80	5	850	-	-	115	120	120	135	130	130	BJD	P	
											127	125	110						
6/12/2017	1:06 PM	TT	CC	F	45	90	4	850	-	-	124	124	118	127	125	130	BJD	P	
											118	111	110						
6/12/2017	1:04 PM	TT	AG	X	112	90	-	-	400	500	-	-	-	124	125	135	BJD	P	
											128	112	124						
6/13/2017	7:50 AM	TT	CC	F	2650	80	6	750	-	-	120	114	121	134	146	133	BJD	P	
											118	116	116						
6/13/2017	8:25 AM	TT	SP	F	45	80	4	850	-	-	128	118	114	137	133	130	BJD	P	
											112	124	123						
6/13/2017	10:10 AM	TT	AG	X	112	80	-	-	400	500	-	-	-	127	125	123	BJD	P	
											119	120	112						
6/13/2017	1:34 PM	TT	AG	X	112	90	-	-	400	500	-	-	-	129	123	120	BJD	P	
											120	123	112						
6/13/2017	1:20 PM	TT	SP	F	45	90	5	850	-	-	126	118	114	130	132	130	BJD	P	
											120	116	114						
6/14/2017	7:30 AM	TT	SP	F	45	80	5	850	-	-	125	120	126	135	131	136	BJD	P	
											128	122	123						
6/14/2017	7:25 AM	TT	AG	X	112	80	-	-	400	500	-	-	-	135	132	131	BJD	P	
											96	105	105						

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
6/14/2017	8:33 AM	TT	SP	F	1406	80	3	750	-	-	120	125	127	149	142	143	BJD	P	
											125	119	127						
6/14/2017	9:10 AM	TT	CC	F	45	80	4	850	-	-	129	139	134	143	140	144	BJD	P	
											123	124	125						
6/16/2017	8:00 AM	TT	AG	X	112	75	-	-	400	530	110	109	112	135	132	131	BJV	P	
											-	-	-						
6/16/2017	8:05 AM	TT	WL	X	211	75	-	-	500	500	126	131	128	142	140	139	BJV	P	
											-	-	-						
6/16/2017	1:08 PM	TT	AG	X	112	85	-	-	400	550	-	-	-	-	-	-	BJV	F	Peel
											-	-	-						
6/16/2017	1:18 PM	TT	WL	X	211	85	-	-	500	500	120	114	116	120	115	119	BJV	P	
											-	-	-						
6/16/2017	1:30 PM	TT	AG	X	112	85	-	-	400	550	-	-	-	-	-	-	BJV	F	Peel
											-	-	-						
6/16/2017	1:50 PM	TT	AG	X	112	85	-	-	400	550	121	127	128	133	123	138	BJV	P	
											-	-	-						
6/19/2017	7:42 AM	TT	SP	F	45	75	6	85	-	-	113	107	120	133	125	120	BJV	P	
											122	117	117						
6/19/2017	7:46 AM	TT	AG	X	112	75	-	-	450	550	135	139	140	144	140	144	BJV	P	
											-	-	-						
6/19/2017	1:18 PM	TT	WL	X	211	85	-	-	500	500	128	137	130	135	135	130	BJV	P	
											-	-	-						
6/19/2017	1:05 PM	TT	BS	X	15	85	-	-	510	550	129	120	123	130	123	131	BJV	P	
											-	-	-						
6/19/2017	1:12 PM	TT	AG	X	112	85	-	-	450	550	121	119	111	126	130	129	BJV	P	
											-	-	-						
6/20/2017	7:45 AM	TT	WL	X	211	75	-	-	500	500	141	140	147	165	165	160	AAW	P	
											-	-	-						
6/20/2017	8:30 AM	TT	AG	X	112	75	-	-	450	550	140	145	140	160	150	145	AAW	P	
											-	-	-						
6/20/2017	8:00 AM	TT	BS	X	15	75	-	-	450	550	146	140	148	162	168	160	AAW	P	
											-	-	-						
6/20/2017	12:03 PM	TT	BS	X	15	80	-	-	480	550	125	132	124	132	130	144	AAW	P	
											-	-	-						
6/20/2017	12:04 PM	TT	WL	X	211	80	-	-	500	500	130	132	122	140	145	142	AAW	P	
											-	-	-						
6/20/2017	1:05 PM	TT	AG	X	112	80	-	-	500	500	121	120	129	137	135	141	AAW	P	
											-	-	-						
6/21/2017	7:39 AM	TT	SP	F	1406	75	3	750	-	-	132	130	129	137	132	135	AAW	P	
											130	122	135						
6/21/2017	8:55 AM	TT	CC	F	45	90	4	850	-	-	123	124	130	132	130	127	AAW	P	
											127	129	112						
6/21/2017	9:52 AM	TT	AG	X	211	90	-	-	500	550	117	125	120	114	125	127	AAW	P	
											-	-	-						

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
6/21/2017	10:40 AM	TT	SP	F	45	90	4	850	-	-	117 107	100 119	111 106	115	120	110	AAW	P	
6/21/2017	12:50 PM	TT	AG	X	211	90	-	-	500	550	118 -	121 -	118 -	120	126	125	AAW	P	
6/22/2017	7:30 AM	TT	SP	F	45	75	4	850	-	-	134 128	127 122	132 125	162	155	155	AAW	P	
6/22/2017	7:55 AM	TT	AG	X	211	75	-	-	500	550	107 -	125 -	127 -	140	142	138	AAW	P	
6/22/2017	2:00 PM	TT	AG	X	211	75	-	-	500	550	110 -	120 -	122 -	135	137	136	AAW	P	
6/22/2017	2:30 PM	TT	SP	F	45	75	4	850	-	-	123 125	131 125	134 130	130	125	135	AAW	P	
6/23/2017	9:00 AM	TT	AG	X	211	70	-	-	500	500	126 -	131 -	130 -	142	140	141	AAW	P	
6/23/2017	1:30 PM	TT	WL	X	15	80	-	-	500	450	125 -	123 -	120 -	130	132	130	AAW	P	
6/23/2017	1:40 PM	TT	AG	X	211	80	-	-	500	500	130 -	135 -	136 -	146	145	142	AAW	P	
6/24/2017	7:40 AM	TT	AG	X	112	75	-	-	500	550	109 -	110 -	106 -	132	135	136	AAW	P	
6/24/2017	7:50 AM	TT	WL	X	15	75	-	-	450	500	106 -	103 -	105 -	129	133	130	AAW	P	
6/24/2017	1:00 PM	TT	AG	X	112	75	-	-	500	500	122 -	119 -	121 -	135	133	131	AAW	P	
6/24/2017	1:05 PM	TT	WL	X	15	75	-	-	450	500	120 -	122 -	120 -	132	130	131	AAW	P	
6/26/2017	7:40 AM	TT	AG	X	112	75	-	-	500	500	130 -	110 -	120 -	135	133	136	AAW	P	
6/26/2017	7:30 AM	TT	WL	X	15	75	-	-	450	500	132 -	119 -	126 -	138	135	131	AAW	P	
6/26/2017	1:15 PM	TT	AG	X	112	75	-	-	500	500	102 -	110 -	115 -	130	132	128	AAW	P	
6/26/2017	1:20 PM	TT	WL	X	15	75	-	-	450	500	108 -	112 -	110 -	133	130	130	AAW	P	
6/26/2017	1:40 PM	TT	BS	X	43	75	-	-	500	550	112 -	110 -	111 -	130	130	128	AAW	P	
6/27/2017	7:30 AM	TT	WL	X	15	70	-	-	500	500	114 -	112 -	112 -	132	135	131	AAW	P	
6/27/2017	7:40 AM	TT	AG	X	112	70	-	-	500	500	113 -	112 -	110 -	138	136	132	AAW	P	
6/27/2017	1:15 PM	TT	AG	X	112	80	-	-	500	500	110 -	105 -	112 -	125	123	123	AAW	P	
6/27/2017	1:20 PM	TT	WL	X	15	80	-	-	500	500	115 -	110 -	110 -	125	123	126	AAW	P	

Trial Weld Log

Date	Time	Material Type	Tech	Type	Mach	Amb Temp	Fusion Speed	Fusion Temp	Extr. Preheat	Extr. Barrel	Peel 1 (In/Out)	Peel 2 (In/Out)	Peel 3 (In/Out)	Shear 1	Shear 2	Shear 3	QA ID	Pass / Fail	Comments
6/28/2017	8:15 AM	TT	WL	X	15	80	-	-	500	500	119 -	116 -	111 -	147	145	140	AAW	P	
6/28/2017	8:09 AM	TT	AG	X	112	80	-	-	500	550	100 -	118 -	116 -	149	150	152	AAW	P	
6/28/2017	1:00 PM	TT	BS	X	43	80	-	-	500	550	100 -	102 -	110 -	145	150	145	AAW	P	
6/29/2017	7:50 AM	TT	WL	X	15	75	-	-	500	500	115 -	118 -	120 -	140	142	140	AAW	P	
6/29/2017	1:00 PM	TT	WL	X	15	80	-	-	500	500	110 -	121 -	124 -	138	141	129	AAW	P	
6/30/2017	7:17 AM	TT	WL	X	112	75	-	-	500	500	112 -	115 -	115 -	140	146	152	AAW	P	
7/1/2017	7:15 AM	TT	WL	X	112	75	-	-	500	500	125 -	136 -	131 -	152	143	151	AAW	P	

Sub-Appendix C.5

Panel Seaming Forms

Panel Seaming Log
KS 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
1	**2**	5/17/2017	TT	7:54 AM	76	SLOPE	0	84	X	84		AAW			
3	**4**	5/17/2017	TT	8:19 AM	80	SLOPE	0	88	X	88		AAW	1	73	
6	**7**	5/18/2017	TT	7:45 AM	80	SLOPE	9	103	X	94		AAW			
8	**9**	5/18/2017	TT	8:15 AM	81	SLOPE	2	103	X	101		AAW			
12	**13**	5/18/2017	TT	8:25 AM	81	SLOPE	0	16	X	16		AAW			
10	**11**	5/18/2017	TT	8:38 AM	81	SLOPE	5	113	X	108		AAW			
14	**15**	5/18/2017	TT	8:50 AM	81	SLOPE	0	108	X	108		AAW	4	107	
16	**17**	5/18/2017	TT	11:22 AM	85	SLOPE	0	107	X	107		AAW			
17	**20**	5/18/2017	TT	1:10 PM	87	SLOPE	0	107	X	107		AAW			
20	**21**	5/18/2017	TT	1:30 PM	86	SLOPE	0	107	X	107		AAW			
22	**23**	5/18/2017	TT	1:48 PM	86	SLOPE	0	103	X	103		AAW			
24	**25**	5/18/2017	TT	3:20 PM	86	SLOPE	0	100	X	100		AAW	5	70	
25	**26**	5/18/2017	TT	3:35 PM	86	SLOPE	0	45	X	45		AAW			
25	**27**	5/18/2017	TT	3:45 PM	85	SLOPE	0	55	X	55		AAW			
26	**27**	5/18/2017	TT	3:54 PM	85	SLOPE	0	48	X	48		AAW			
29	**30**	5/22/2017	TT	3:21 PM	76	SLOPE	0	117		117		AAW			
27	**29**	5/22/2017	TT	3:52 PM	76	SLOPE	0	40	X	40		AAW			
28	**29**	5/22/2017	TT	4:13 PM	76	SLOPE	26	46	X	20		AAW			
27	**28**	5/22/2017	TT	4:50 PM	76	SLOPE	35	55	X	20		AAW	7	44	
36	**37**	5/23/2017	TT	9:32 AM	70	SLOPE	0	75	X	75		AAW			
36	**38**	5/23/2017	TT	9:43 AM	70	SLOPE	0	81	X	81		AAW			
37	**39**	5/23/2017	TT	9:57 AM	70	SLOPE	0	77	X	77		AAW			
41	**42**	5/24/2017	TT	9:46 AM	62	SLOPE	0	127	X	127		AAW			
44	**45**	5/24/2017	TT	10:32 AM	62	SLOPE	0	8		8		AAW			
44	**45**	5/24/2017	TT	-	-	SLOPE	8	16	X	8	X	AAW			
43	**46**	5/24/2017	TT	10:50 AM	62	SLOPE	0	15	X	15		AAW			
42	**46**	5/24/2017	TT	10:52 AM	62	SLOPE	0	8	X	8		AAW			
41	**43**	5/24/2017	TT	10:53 AM	62	SLOPE	0	24		24		AAW			
41	**43**	5/24/2017	TT	-	-	SLOPE	24	26	X	2	X	AAW			
45	**46**	5/24/2017	TT	10:59 AM	62	SLOPE	0	16	X	16		AAW			
47	**48**	5/24/2017	TT	11:21 AM	62	SLOPE	0	103	X	103		AAW	10	53	
49	**50**	5/24/2017	TT	12:43 PM	69	SLOPE	0	16	X	16		AAW			
48	**50**	5/24/2017	TT	12:48 PM	69	SLOPE	0	23	X	23		AAW			
49	**51**	5/24/2017	TT	12:52 PM	69	SLOPE	0	29	X	29		AAW			
50	**51**	5/24/2017	TT	12:55 PM	69	SLOPE	0	9	X	9		AAW	11	9	
53	**54**	5/25/2017	TT	7:29 AM	59	SLOPE	0	73	X	73		AAW			
55	**56**	5/25/2017	TT	7:48 AM	59	SLOPE	0	113	X	113		AAW			

Panel Seaming Log
KS 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
57	**58**	5/25/2017	TT	8:07 AM	59	SLOPE	0	16	X	16		AAW			
57	**59**	5/25/2017	TT	8:11 AM	59	SLOPE	0	58	X	58		AAW			
58	**59**	5/25/2017	TT	8:20 AM	59	SLOPE	0	59	X	59		AAW			
60	**61**	5/25/2017	TT	8:32 AM	60	SLOPE	0	125	X	125		AAW			
62	**63**	5/25/2017	TT	9:09 AM	60	SLOPE	0	124	X	124		AAW	14	2	
63	**65**	5/25/2017	TT	9:28 AM	60	SLOPE	0	10	X	10		AAW			
64	**66**	5/25/2017	TT	9:40 AM	61	SLOPE	0	138		138		AAW			
68	**69**	5/25/2017	TT	2:01 PM	80	SLOPE	0	35	X	35		AAW			
66	**67**	5/25/2017	TT	2:05 PM	80	SLOPE	120	135	X	15		AAW			
66	**70**	5/25/2017	TT	2:10 PM	80	SLOPE	0	2	X	2		AAW			
67	**70**	5/25/2017	TT	2:20 PM	80	SLOPE	0	16	X	16		AAW			
69	**70**	5/25/2017	TT	2:27 PM	80	SLOPE	0	50	X	50		AAW			
71	**73**	5/25/2017	TT	2:55 PM	80	SLOPE	0	34		34		AAW			
71	**73**	5/25/2017	TT	-	-	SLOPE	34	36		2	X	AAW			
71	**73**	5/25/2017	TT	3:03 PM	80	SLOPE	36	138	X	102		AAW	16	108	
72	**73**	5/25/2017	TT	3:17 PM	80	SLOPE	0	33	X	33		AAW			
73	**74**	5/25/2017	TT	3:34 PM	80	SLOPE	0	63	X	63		AAW			
74	**75**	5/25/2017	TT	3:46 PM	80	SLOPE	0	16	X	16		AAW			
73	**75**	5/25/2017	TT	3:50 PM	80	SLOPE	0	86	X	86		AAW			
61	**65**	5/25/2017	TT	-	-	SLOPE	0	3	X	3	X	AAW			
77	**78**	5/26/2017	TT	9:08 AM	70	SLOPE	0	77	X	77		AAW			
78	**79**	5/26/2017	TT	9:23 AM	70	SLOPE	0	55	X	50		AAW			
79	**80**	5/26/2017	TT	9:32 AM	70	SLOPE	0	26	X	26		AAW			
81	**82**	5/31/2017	TT	10:22 AM	80	SLOPE	0	17	X	17		AAW			
82	**83**	5/31/2017	TT	10:14 AM	80	SLOPE	0	38	X	38		AAW			
83	**84**	5/31/2017	TT	10:29 AM	80	SLOPE	0	47	X	47		AAW			
84	**85**	5/31/2017	TT	10:47 AM	80	SLOPE	0	59	X	59		AAW	19	4	
87	**88**	5/31/2017	TT	10:58 AM	80	SLOPE	0	87	X	87		AAW			
96	**97**	6/1/2017	TT	11:46 AM	78	SLOPE	0	9		9		BJD			
96	**97**	6/1/2017	TT	11:49 AM	78	SLOPE	11	162		151		BJD			
96	**97**	6/1/2017	TT	12:10 PM	80	SLOPE	163	170	X	7		BJD			
98	**99**	6/1/2017	TT	12:58 PM	82	SLOPE	0	16	X	16		BJD			
97	**98**	6/1/2017	TT	1:02 PM	82	SLOPE	0	6		6		BJD			
97	**98**	6/1/2017	TT	1:05 PM	82	SLOPE	7	45	X	38		BJD			
97	**99**	6/1/2017	TT	1:09 PM	82	SLOPE	0	22		22		BJD			
97	**99**	6/1/2017	TT	1:13 PM	82	SLOPE	24	126	X	102		BJD	23B	123	
100	**101**	6/1/2017	TT	3:44 PM	81	SLOPE	0	174	X	174		BJD	23, 23A	7, 17	

Panel Seaming Log
KS 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
103	**105**	6/1/2017	TT	4:59 PM	78	SLOPE	0	16	X	16		BJD			
104	**105**	6/1/2017	TT	5:03 PM	77	SLOPE	0	91		91		BJD			
104	**105**	6/1/2017	TT	5:24 PM	77	SLOPE	94	111	X	37		BJD			
106	**107**	6/1/2017	TT	6:15 PM	77	SLOPE	0	52	X	52		BJD			
108	**109**	6/1/2017	TT	6:20 PM	75	SLOPE	0	129	X	129		BJD			
107	**109**	6/1/2017	TT	6:24 PM	75	SLOPE	0	16	X	16		BJD	25	8	
23	**107**	6/1/2017	TT	6:40 PM	75	SLOPE	0	16	X	16		BJD			
24	**106**	6/1/2017	TT	6:44 PM	75	SLOPE	0	16	X	16		BJD			
31	**102**	6/1/2017	TT	6:47 PM	75	SLOPE	0	18	X	18		BJD			
32	**101**	6/1/2017	TT	6:49 PM	73	SLOPE	0	8	X	8		BJD			
29	**101**	6/1/2017	TT	6:50 PM	73	SLOPE	0	9	X	9		BJD			
29	**100**	6/1/2017	TT	6:51 PM	73	SLOPE	0	7	X	7		BJD			
30	**100**	6/1/2017	TT	6:52 PM	73	SLOPE	0	9	X	9		BJD			
30	**99**	6/1/2017	TT	6:53 PM	73	SLOPE	0	8	X	8		BJD			
33	**99**	6/1/2017	TT	6:54 PM	72	SLOPE	0	8	X	8		BJD			
33	**97**	6/1/2017	TT	6:56 PM	72	SLOPE	0	8	X	8		BJD			
34	**97**	6/1/2017	TT	6:57 PM	72	SLOPE	0	8	X	8		BJD			
34	**96**	6/1/2017	TT	6:58 PM	72	SLOPE	0	9	X	9		BJD			
111	**112**	6/3/2017	TT	8:15 AM	85	SLOPE	0	66	X	66		BJD			
113	**114**	6/3/2017	TT	8:30 AM	85	SLOPE	0	64	X	64		BJD			
115	**116**	6/3/2017	TT	8:54 AM	85	SLOPE	0	67	X	67		BJD			
117	**118**	6/3/2017	TT	9:00 AM	85	SLOPE	0	16	X	16		BJD			
118	**119**	6/3/2017	TT	9:05 AM	85	SLOPE	0	8	X	8		BJD			
117	**119**	6/3/2017	TT	9:06 AM	85	SLOPE	0	61	X	61		BJD			
120	**121**	6/3/2017	TT	9:20 AM	85	SLOPE	0	61		61		BJD			
120	**121**	6/3/2017	TT	9:26 AM	85	SLOPE	63	66	X	3		BJD			
121	**122**	6/3/2017	TT	9:30 AM	85	SLOPE	0	66	X	66		BJD	26	22	
123	**124**	6/3/2017	TT	9:42 AM	85	SLOPE	0	66	X	66		BJD			
125	**126**	6/3/2017	TT	10:02 AM	85	SLOPE	0	63	X	63		BJD			
126	**128**	6/3/2017	TT	10:20 AM	85	SLOPE	0	22	X	22		BJD			
127	**129**	6/3/2017	TT	10:30 AM	88	SLOPE	0	56	X	56		BJD			
129	**130**	6/3/2017	TT	10:45 AM	88	SLOPE	0	15		15		BJD			
129	**130**	6/3/2017	TT	10:55 AM	88	SLOPE	18	53	X	35		BJD			
131	**132**	6/3/2017	TT	11:10 AM	88	SLOPE	0	54	X	54		BJD			
145	**146**	6/6/2017	TT	2:12 PM	83	SLOPE	0	16	X	16		BJD			
144	**145**	6/6/2017	TT	2:24 PM	83	SLOPE	0	32	X	32		BJD			
144	**146**	6/6/2017	TT	2:29 PM	83	SLOPE	0	151	X	151		BJD	28	97	

Panel Seaming Log
KS 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
147	**148**	6/6/2017	TT	2:52 PM	83	SLOPE	0	8	X	8		BJD			
148	**149**	6/6/2017	TT	3:21 PM	83	SLOPE	0	22	X	22		BJD			
150	**151**	6/6/2017	TT	3:27 PM	83	SLOPE	0	33	X	33		BJD			
149	**150**	6/6/2017	TT	3:30 PM	83	SLOPE	0	18	X	18		BJD			
153	**154**	6/6/2017	TT	3:56 PM	80	SLOPE	0	16	X	16		BJD			
PE1	**PE2**	6/6/2017	TT	4:09 PM	80	SLOPE	0	12	X	12		BJD			
151	**PE1**	6/6/2017	TT	4:17 PM	80	SLOPE	0	16	X	16		BJD			
150	**PE2**	6/6/2017	TT	4:26 PM	80	SLOPE	0	9	X	9		BJD			
149	**PE2**	6/6/2017	TT	4:28 PM	80	SLOPE	0	10	X	10		BJD			
147	**151**	6/6/2017	TT	4:40 PM	80	SLOPE	0	29	X	29		BJD			
147	**152**	6/6/2017	TT	4:47 PM	80	SLOPE	0	37	X	37		BJD			
151	**152**	6/6/2017	TT	4:52 PM	80	SLOPE	0	87	X	87		BJD			
9	**155**	6/6/2017	TT	5:07 PM	80	SLOPE	0	4	X	4		BJD			
10	**155**	6/6/2017	TT	5:08 PM	80	SLOPE	0	12	X	12		BJD			
10	**154**	6/6/2017	TT	5:09 PM	80	SLOPE	0	3	X	3		BJD			
11	**154**	6/6/2017	TT	5:09 PM	80	SLOPE	0	12	X	12		BJD			
11	**152**	6/6/2017	TT	5:11 PM	80	SLOPE	0	3	X	3		BJD			
13	**152**	6/6/2017	TT	5:12 PM	80	SLOPE	0	14	X	14		BJD			
14	**151**	6/6/2017	TT	5:14 PM	80	SLOPE	0	14	X	14		BJD			
15	**150**	6/6/2017	TT	5:17 PM	80	SLOPE	0	15	X	15		BJD			
16	**149**	6/6/2017	TT	5:19 PM	80	SLOPE	0	14	X	14		BJD			
17	**148**	6/6/2017	TT	5:22 PM	80	SLOPE	0	15	X	15		BJD			
20	**146**	6/6/2017	TT	5:24 PM	80	SLOPE	0	14	X	14		BJD			
21	**144**	6/6/2017	TT	5:27 PM	80	SLOPE	0	15	X	15		BJD			
22	**143**	6/6/2017	TT	5:29 PM	80	SLOPE	0	15	X	15		BJD	30	14	
160	**161**	6/7/2017	TT	4:42 PM	80	SLOPE	0	16	X	16		BJD			
160	**162**	6/7/2017	TT	4:50 PM	80	SLOPE	0	163		163		BJD			
160	**162**	6/7/2017	TT	5:21 PM	80	SLOPE	169	217	X	48		BJD			
161	**162**	6/7/2017	TT	5:29 PM	80	SLOPE	0	12	X	12		BJD			
162	**163**	6/7/2017	TT	5:36 PM	80	SLOPE	0	55		55		BJD			
162	**163**	6/7/2017	TT	5:46 PM	80	SLOPE	57	209	X	152		BJD			

Panel Seaming Log
MAY 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
2	**3**	5/17/2017	TT	8:00 AM	76	SLOPE	0	85	x	85		AAW			
4	**5**	5/17/2017	TT	8:20 AM	80	SLOPE	0	92	x	92		AAW			
5	**6**	5/17/2017	TT	8:38 AM	80	SLOPE	0	96	x	96		AAW	2	93	
7	**8**	5/18/2017	TT	7:50 AM	80	SLOPE	7	109	x	102		AAW			
9	**10**	5/18/2017	TT	8:13 AM	81	SLOPE	4	108	x	104		AAW			
11	**12**	5/18/2017	TT	8:30 AM	81	SLOPE	0	32	x	32		AAW			
11	**13**	5/18/2017	TT	8:35 AM	81	SLOPE	0	79	x	79		AAW			
12	**14**	5/18/2017	TT	8:50 AM	81	SLOPE	0	32	x	32		AAW			
13	**14**	5/18/2017	TT	8:54 AM	81	SLOPE	0	78	x	78		AAW	3	77	
15	**16**	5/18/2017	TT	11:21 AM	85	SLOPE	0	108	x	108		AAW			
18	**19**	5/18/2017	TT	1:05 PM	87	SLOPE	0	16	x	16		AAW			
18	**1**	5/18/2017	TT	1:10 PM	87	SLOPE	0	60	x	60		AAW			
19	**1**	5/18/2017	TT	1:15 PM	87	SLOPE	0	23	x	23		AAW			
21	**22**	5/18/2017	TT	1:55 PM	86	SLOPE	0	106	x	106		AAW			
23	**24**	5/18/2017	TT	2:04 PM	86	SLOPE	0	99	x	99		AAW	6	97	
27	**28**	5/22/2017	TT	3:35 PM	76	SLOPE	0	31		31		AAW			
28	**31**	5/22/2017	TT	3:51 PM	76	SLOPE	0	16	X	16		AAW			
27	**31**	5/22/2017	TT	3:56 PM	76	SLOPE	0	13	X	13		AAW			
27	**28**	5/22/2017	TT	-	-	SLOPE	31	35		4	X	AAW			
31	**32**	5/22/2017	TT	4:00 PM	76	SLOPE	0	19	X	19		AAW			
28	**32**	5/22/2017	TT	4:03 PM	76	SLOPE	0	10	X	10		AAW			
32	**29**	5/22/2017	TT	4:11 PM	76	SLOPE	0	27	X	27		AAW			
28	**29**	5/22/2017	TT	4:24 PM	76	SLOPE	0	26		26		AAW			
30	**33**	5/22/2017	TT	4:30 PM	75	SLOPE	0	135	X	135		AAW			
34	**35**	5/22/2017	TT	4:55 PM	75	SLOPE	0	16	X	16		AAW			
33	**34**	5/22/2017	TT	5:00 PM	75	SLOPE	0	86	X	86		AAW			
33	**35**	5/22/2017	TT	5:15 PM	75	SLOPE	0	56	X	56		AAW			
34	**36**	5/22/2017	TT	5:35 PM	75	SLOPE	0	87	X	87		AAW	8	2	
35	**36**	5/22/2017	TT	5:50 PM	74	SLOPE	0	61	X	61		AAW			
37	**38**	5/23/2017	TT	9:48 AM	70	SLOPE	0	16	X	16		AAW			
38	**39**	5/23/2017	TT	9:53 AM	70	SLOPE	0	74	X	74		AAW			
39	**40**	5/24/2017	TT	9:05 AM	61	SLOPE	0	151	X	151		AAW			
40	**41**	5/24/2017	TT	9:33 AM	61	SLOPE	0	157	X	157		AAW	9	107	
42	**45**	5/24/2017	TT	10:30 AM	62	SLOPE	0	57	X	57		AAW			
42	**44**	5/24/2017	TT	10:40 AM	62	SLOPE	0	73	X	73		AAW			
45	**47**	5/24/2017	TT	11:00 AM	62	SLOPE	0	50	X	50		AAW			

Panel Seaming Log
MAY 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
44	**47**	5/24/2017	TT	-	-	SLOPE	0	9			X	AAW			
44	**47**	5/24/2017	TT	11:11 AM	62	SLOPE	9	79	X	70		AAW			
48	**49**	5/24/2017	TT	11:30 AM	62	SLOPE	0	52	X	52		AAW	12	2	
52	**53**	5/25/2017	TT	7:30 AM	59	SLOPE	0	30	X	30		AAW			
54	**55**	5/25/2017	TT	7:40 AM	59	SLOPE	0	107	X	107		AAW			
56	**57**	5/25/2017	TT	8:06 AM	59	SLOPE	0	59	X	59		AAW			
56	**58**	5/25/2017	TT	8:17 AM	59	SLOPE	0	57	X	57		AAW			
59	**60**	5/25/2017	TT	8:42 AM	59	SLOPE	0	123	X	123		AAW			
61	**62**	5/25/2017	TT	9:00 AM	60	SLOPE	0	125	X	125		AAW	13	70	
62	**65**	5/25/2017	TT	9:21 AM	60	SLOPE	0	16	X	16		AAW			
63	**64**	5/25/2017	TT	9:35 AM	60	SLOPE	0	136	X	136		AAW			
66	**67**	5/25/2017	TT	10:00 AM	61	SLOPE	0	120		120		AAW			
43	**63**	5/25/2017	TT	11:00 AM	62	SLOPE	0	11	X	11		AAW			
43	**65**	5/25/2017	TT	11:03 AM	62	SLOPE	0	10	X	10		AAW			
46	**65**	5/25/2017	TT	11:04 AM	62	SLOPE	0	8	X	8		AAW			
46	**62**	5/25/2017	TT	11:04 AM	62	SLOPE	0	2	X	2		AAW			
46	**61**	5/25/2017	TT	11:05 AM	62	SLOPE	0	16	X	16		AAW			
45	**61**	5/25/2017	TT	11:06 AM	62	SLOPE	0	0.5	X	0.5		AAW			
45	**60**	5/25/2017	TT	11:07 AM	62	SLOPE	0	8	X	8		AAW			
47	**60**	5/25/2017	TT	11:09 AM	62	SLOPE	0	9	X	9		AAW			
47	**59**	5/25/2017	TT	11:10 AM	62	SLOPE	0	17	X	17		AAW			
47	**58**	5/25/2017	TT	11:12 AM	62	SLOPE	0	10	X	10		AAW			
48	**58**	5/25/2017	TT	11:14 AM	62	SLOPE	0	7	X	7		AAW			
48	**56**	5/25/2017	TT	11:16 AM	62	SLOPE	0	17	X	17		AAW			
48	**55**	5/25/2017	TT	11:20 AM	62	SLOPE	0	10	X	10		AAW			
49	**55**	5/25/2017	TT	11:25 AM	62	SLOPE	0	9	X	9		AAW			
49	**54**	5/25/2017	TT	11:26 AM	62	SLOPE	0	17	X	17		AAW			
51	**54**	5/25/2017	TT	11:30 AM	62	SLOPE	0	15	X	15		AAW			
51	**53**	5/25/2017	TT	11:32 AM	62	SLOPE	0	16	X	16		AAW			
51	**52**	5/25/2017	TT	11:36 AM	62	SLOPE	0	9		9		AAW			
51	**52**	5/25/2017	TT	-	-	SLOPE	9	14	X	5	X	AAW			
66	**69**	5/25/2017	TT	2:19 PM	80	SLOPE	0	16	X	16		AAW			
64	**68**	5/25/2017	TT	2:24 PM	80	SLOPE	0	16	X	16		AAW			
41	**63**	5/25/2017	TT	2:26 PM	80	SLOPE	0	9	X	9		AAW			
67	**71**	5/25/2017	TT	2:36 PM	80	SLOPE	0	135	X	135		AAW			
70	**71**	5/25/2017	TT	-	-	SLOPE	0	3	X	3	X	AAW			

Panel Seaming Log
MAY 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
71	**72**	5/25/2017	TT	3:04 PM	80	SLOPE	0	16	X	16		AAW	15	16	
70	**72**	5/25/2017	TT	3:15 PM	80	SLOPE	0	52	X	52		AAW			
38	**69**	5/25/2017	TT	3:48 PM	80	SLOPE	0	10	X	10		AAW			
39	**69**	5/25/2017	TT	-	-	SLOPE	0	5		5	X	AAW			
39	**69**	5/25/2017	TT	3:50 PM	80	SLOPE	5	11	X	6		AAW			
39	**68**	5/25/2017	TT	-	-	SLOPE	0	7	X	7	X	AAW			
40	**68**	5/25/2017	TT	3:54 PM	80	SLOPE	0	17	X	17		AAW			
41	**68**	5/25/2017	TT	3:57 PM	80	SLOPE	0	17	X	17		AAW			
74	**76**	5/25/2017	TT	4:02 PM	80	SLOPE	0	62	X	62		AAW			
75	**76**	5/25/2017	TT	4:12 PM	80	SLOPE	0	62	X	62		AAW			
76	**77**	5/25/2017	TT	4:30 PM	80	SLOPE	0	100	X	100		AAW			
5	**WT**	5/27/2017	TT	9:20 AM	78	SLOPE	0	16	X	16		AAW			
4	**WT**	5/27/2017	TT	9:23 AM	78	SLOPE	0	16	X	16		AAW			
3	**WT**	5/27/2017	TT	9:25 AM	78	SLOPE	0	16	X	16		AAW			
2	**WT**	5/27/2017	TT	9:28 AM	78	SLOPE	0	16	X	16		AAW			
1	**WT**	5/27/2017	TT	9:29 AM	78	SLOPE	0	16	X	16		AAW			
18	**WT**	5/27/2017	TT	9:32 AM	78	SLOPE	0	9		9		AAW			
18	**WT**	5/27/2017	TT	-	-	SLOPE	9	11	X	2		AAW			
15	**WT**	5/27/2017	TT	-	-	SLOPE	0	5		5	X	AAW			
15	**WT**	5/27/2017	TT	9:41 AM	78	SLOPE	5	16	X	11	X	AAW			
14	**WT**	5/27/2017	TT	9:50 AM	78	SLOPE	0	16	X	16		AAW			
12	**WT**	5/27/2017	TT	9:54 AM	78	SLOPE	0	16	X	16		AAW			
11	**WT**	5/27/2017	TT	9:57 AM	78	SLOPE	0	16	X	16		AAW	17B2	11	
10	**WT**	5/27/2017	TT	10:00 AM	78	SLOPE	0	16	X	16	X	AAW	17,17B	15, 5	
9	**WT**	5/27/2017	TT	10:03 AM	78	SLOPE	0	16	X	16	X	AAW	17A	9	
8	**WT**	5/27/2017	TT	10:06 AM	78	SLOPE	0	16	X	16		AAW	17A2	3	
7	**WT**	5/27/2017	TT	10:10 AM	78	SLOPE	0	16	X	16		AAW			
6	**WT**	5/27/2017	TT	-	-	SLOPE	0	16	X	16	X	AAW			
25	**WT**	5/27/2017	TT	-	-	SLOPE	0	5		5	X	AAW			
25	**WT**	5/27/2017	TT	10:15 AM	78	SLOPE	5	16	X	11		AAW			
24	**WT**	5/27/2017	TT	10:19 AM	78	SLOPE	0	16	X	16		AAW			
23	**WT**	5/27/2017	TT	10:21 AM	78	SLOPE	0	16	X	16		AAW			
22	**WT**	5/27/2017	TT	10:24 AM	80	SLOPE	0	16	X	16		AAW			
21	**WT**	5/27/2017	TT	10:27 AM	80	SLOPE	0	16	X	16		AAW			
20	**WT**	5/27/2017	TT	10:30 AM	80	SLOPE	0	16	X	16		AAW			
17	**WT**	5/27/2017	TT	10:31 AM	80	SLOPE	0	16	X	16		AAW			

Panel Seaming Log
MAY 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
16	**WT**	5/27/2017	TT	10:35 AM	80	SLOPE	0	16	X	16		AAW			
47	**WT**	5/30/2017	TT	-	-	SLOPE	0	4		4	X	AAW			
47	**WT**	5/30/2017	TT	9:45 AM	70	SLOPE	4	16	X	12		AAW			
44	**WT**	5/30/2017	TT	9:47 AM	70	SLOPE	0	16	X	16		AAW			
42	**WT**	5/30/2017	TT	9:50 AM	70	SLOPE	0	16	X	16		AAW			
41	**WT**	5/30/2017	TT	9:54 AM	70	SLOPE	0	16	X	16		AAW			
40	**WT**	5/30/2017	TT	-	-	SLOPE	0	4		4	X	AAW			
40	**WT**	5/30/2017	TT	10:00 AM	70	SLOPE	4	16	X	12		AAW			
39	**WT**	5/30/2017	TT	10:02 AM	70	SLOPE	0	16	X	16		AAW			
37	**WT**	5/30/2017	TT	10:05 AM	70	SLOPE	0	16	X	16		AAW			
36	**WT**	5/30/2017	TT	10:08 AM	70	SLOPE	0	16	X	16		AAW			
35	**WT**	5/30/2017	TT	10:10 AM	70	SLOPE	0	16	X	16		AAW			
33	**WT**	5/30/2017	TT	10:15 AM	70	SLOPE	0	16	X	16		AAW			
30	**WT**	5/30/2017	TT	10:19 AM	70	SLOPE	0	8		8		AAW			
49	**WT**	5/30/2017	TT	10:30 AM	70	SLOPE	0	19	X	19		AAW			
48	**WT**	5/30/2017	TT	10:35 AM	70	SLOPE	0	13		13		AAW			
48	**WT**	5/30/2017	TT	-	-	SLOPE	13	17	X	4	X	AAW			
50	**WT**	5/30/2017	TT	10:40 AM	70	SLOPE	0	19	X	19		AAW			
54	**WT**	5/30/2017	TT	10:50 AM	75	SLOPE	0	23	X	23		AAW			
53	**WT**	5/30/2017	TT	10:55 AM	75	SLOPE	0	42	X	42		AAW			
52	**WT**	5/30/2017	TT	11:02 AM	75	SLOPE	0	29	X	29		AAW	18	26	
51	**WT**	5/30/2017	TT	11:05 AM	75	SLOPE	0	17	X	17		AAW			
80	**PS**	5/30/2017	TT	1:10 PM	75	SLOPE	0	14	X	14		AAW			
78	**PS**	5/30/2017	TT	1:12 PM	75	SLOPE	0	16	X	16		AAW			
79	**PS**	5/30/2017	TT	1:15 PM	75	SLOPE	0	16	X	16		AAW			
77	**PS**	5/30/2017	TT	1:20 PM	75	SLOPE	0	16	X	16		AAW			
76	**PS**	5/30/2017	TT	1:22 PM	75	SLOPE	0	16	X	16		AAW			
74	**PS**	5/30/2017	TT	1:25 PM	75	SLOPE	0	16	X	16		AAW			
73	**PS**	5/30/2017	TT	1:27 PM	75	SLOPE	0	16	X	16		AAW			
71	**PS**	5/30/2017	TT	1:30 PM	75	SLOPE	0	16	X	16		AAW			
67	**PS**	5/30/2017	TT	1:32 PM	75	SLOPE	0	16	X	16		AAW			
66	**PS**	5/30/2017	TT	1:35 PM	75	SLOPE	0	16	X	16		AAW			
64	**PS**	5/30/2017	TT	1:37 PM	75	SLOPE	0	16	X	16		AAW			
63	**PS**	5/30/2017	TT	1:40 PM	75	SLOPE	0	16	X	16		AAW			
62	**PS**	5/30/2017	TT	1:43 PM	75	SLOPE	0	16	X	16		AAW			
61	**PS**	5/30/2017	TT	1:45 PM	75	SLOPE	0	16	X	16		AAW			

Panel Seaming Log
MAY 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
60	**PS**	5/30/2017	TT	1:47 PM	75	SLOPE	0	16	X	16		AAW			
59	**PS**	5/30/2017	TT	1:50 PM	75	SLOPE	0	16	X	16		AAW			
57	**PS**	5/30/2017	TT	1:52 PM	75	SLOPE	0	16	X	16		AAW			
56	**PS**	5/30/2017	TT	1:55 PM	75	SLOPE	0	16	X	16		AAW			
55	**PS**	5/30/2017	TT	1:58 PM	75	SLOPE	0	16	X	16		AAW			
54	**PS**	5/30/2017	TT	2:00 PM	75	SLOPE	0	11	X	11		AAW			

Panel Seaming Log
AG x112

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
137	**209**	6/13/2017	TT	10:00 AM	85	SLOPE	0	27	X	27		BJD			
209	**PS**	6/13/2017	TT	10:15 AM	85	SLOPE	0	36	X	36		BJD			
217	**PS**	6/13/2017	TT	10:38 AM	85	SLOPE	0	16	X	16		BJD			
219	**PS**	6/13/2017	TT	3:18 PM	95	SLOPE	0	16	X	16		BJD			
220	**PS**	6/13/2017	TT	3:31 PM	95	SLOPE	0	17	X	17		BJD			
221	**PS**	6/13/2017	TT	3:38 PM	95	SLOPE	0	16	X	16		BJD			
223	**PS**	6/14/2017	TT	8:00 AM	80	SLOPE	0	16	X	16		BJD			
229	**PS**	6/14/2017	TT	8:05 AM	80	SLOPE	0	15	X	15		BJD			
225	**PS**	6/14/2017	TT	8:10 AM	80	SLOPE	0	15	X	15		BJD			
226	**PS**	6/14/2017	TT	8:25 AM	80	SLOPE	0	16	X	16		BJD			
235	**236**	6/24/2017	TT	7:50 AM	70	SLOPE	0	16	X	16		AAW			
144	**244**	6/24/2017	TT	8:21 AM	70	SLOPE	5	12	X	7		AAW			
244	**PS**	6/24/2017	TT	8:25 AM	70	SLOPE	0	2	X	2		AAW			
251	**PS**	6/24/2017	TT	8:28 AM	70	SLOPE	0	16	X	16		AAW			
250	**PS**	6/24/2017	TT	8:35 AM	70	SLOPE	0	16	X	16		AAW	67B	10	
249	**PS**	6/24/2017	TT	9:08 AM	70	SLOPE	0	14	X	14	X	AAW	67, 67A	4, 14	

Panel Seaming Log
MAY 25

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
85	**86**	5/31/2017	TT	10:25 AM	80	SLOPE	0	65	X	65	X	AAW	20B6,20B7	50, 30	
86	**87**	5/31/2017	TT	10:55 AM	80	SLOPE	0	77		77	X	AAW	20, 20B, 20B2, 20B3, 20B4, 20B5, 20A	67, 57, 47, 37, 27, 3, 77	
86	**87**	5/31/2017	TT	-	-	SLOPE	77	79	X		X	AAW			
99	**100**	6/1/2017	TT	3:40 PM	81	SLOPE	0	125	X	125	X	BJD	20A2, 20A3, 20A4, 20A5	12, 22, 32, 75	
98	**100**	6/1/2017	TT	4:00 PM	80	SLOPE	0	46	X	46		BJD	20A6, 20A7	4, 14	
101	**102**	6/1/2017	TT	4:58 PM	78	SLOPE	27	39	X	12		BJD			
101	**104**	6/1/2017	TT	5:05 PM	77	SLOPE	0	114		114		BJD			
101	**102**	6/1/2017	TT	5:10 PM	79	SLOPE	0	15		15		BJD			
102	**103**	6/1/2017	TT	5:20 PM	78	SLOPE	0	33		33		BJD			
101	**104**	6/1/2017	TT	5:24 PM	77	SLOPE	115	129	X	14		BJD			
102	**103**	6/1/2017	TT	5:36 PM	78	SLOPE	35	43	X	8		BJD			
102	**104**	6/1/2017	TT	5:50 PM	77	SLOPE	0	16	X	16		BJD			
106	**108**	6/1/2017	TT	5:58 PM	75	SLOPE	0	16	X	16		BJD			
103	**106**	6/1/2017	TT	6:10 PM	75	SLOPE	0	39	X	39		BJD			
105	**106**	6/1/2017	TT	6:22 PM	75	SLOPE	0	12	X	12		BJD			
105	**108**	6/1/2017	TT	6:30 PM	74	SLOPE	0	128	X	128		BJD	24	56	
27	**103**	6/1/2017	TT	6:53 PM	74	SLOPE	0	16	X	16		BJD	46	13	

Panel Seaming Log
MAY 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
88	**89**	5/31/2017	TT	1:25 PM	80	SLOPE	0	99	X	99		AAW			
89	**90**	5/31/2017	TT	1:42 PM	80	SLOPE	0	113	X	113		AAW			
90	**91**	5/31/2017	TT	2:00 PM	80	SLOPE	0	124	X	124		AAW			
92	**93**	5/31/2017	TT	2:35 PM	80	SLOPE	0	16	X	16		AAW			
91	**92**	5/31/2017	TT	2:45 PM	80	SLOPE	0	83	X	83		AAW			
91	**93**	5/31/2017	TT	2:57 PM	80	SLOPE	0	49	X	49		AAW	21B, 21B2, 21B3, 21B4	42, 32, 22, 12	
92	**94**	5/31/2017	TT	3:05 PM	80	SLOPE	0	84	X	84		AAW	21 21A, 21A2	3, 13, 23	
93	**94**	5/31/2017	TT	3:20 PM	80	SLOPE	0	62	X	62		AAW			
94	**95**	5/31/2017	TT	3:40 PM	80	SLOPE	0	172	X	172		AAW			
95	**96**	5/31/2017	TT	4:10 PM	80	SLOPE	0	173	X	173		AAW	22	172	
36	**96**	5/31/2017	TT	4:38 PM	80	SLOPE	0	9	X	9		AAW			
36	**95**	5/31/2017	TT	4:39 PM	80	SLOPE	0	8	X	8		AAW			
38	**95**	5/31/2017	TT	4:50 PM	80	SLOPE	0	8	X	8		AAW			
38	**94**	5/31/2017	TT	4:51 PM	80	SLOPE	0	4	X	4		AAW			
69	**94**	5/31/2017	TT	4:51 PM	80	SLOPE	0	5	X	5		AAW			
70	**94**	5/31/2017	TT	4:52 PM	80	SLOPE	0	19	X	19		AAW			
72	**94**	5/31/2017	TT	4:55 PM	80	SLOPE	0	12	X	12		AAW			
72	**93**	5/31/2017	TT	4:57 PM	80	SLOPE	0	12	X	12		AAW			
73	**93**	5/31/2017	TT	4:59 PM	80	SLOPE	0	8	X	8		AAW			
73	**91**	5/31/2017	TT	5:01 PM	80	SLOPE	0	19	X	19		AAW			
75	**90**	5/31/2017	TT	5:05 PM	80	SLOPE	0	18	X	18		AAW			
75	**89**	5/31/2017	TT	5:08 PM	80	SLOPE	0	10	X	10		AAW			
76	**89**	5/31/2017	TT	5:10 PM	80	SLOPE	0	9	X	9		AAW			
76	**88**	5/31/2017	TT	5:12 PM	80	SLOPE	0	18	X	18		AAW			
76	**87**	5/31/2017	TT	5:16 PM	80	SLOPE	0	0.5	X	0.5	X	AAW			
77	**87**	5/31/2017	TT	5:16 PM	80	SLOPE	0	18	X	18		AAW			
77	**86**	5/31/2017	TT	5:19 PM	80	SLOPE	0	11	X	11		AAW			
78	**86**	5/31/2017	TT	5:22 PM	80	SLOPE	0	7	X	7		AAW			
78	**85**	5/31/2017	TT	5:23 PM	80	SLOPE	0	19	X	19		AAW			
78	**84**	5/31/2017	TT	5:27 PM	80	SLOPE	0	4	X	4		AAW			
79	**84**	5/31/2017	TT	5:28 PM	80	SLOPE	0	14	x	14		AAW			
79	**83**	5/31/2017	TT	5:30 PM	80	SLOPE	0	14	X	14		AAW			
80	**83**	5/31/2017	TT	5:33 PM	80	SLOPE	0	5	X	5		AAW			
80	**82**	5/31/2017	TT	5:34 PM	80	SLOPE	0	19	X	19		AAW	49	9	
80	**81**	5/31/2017	TT	5:38 PM	80	SLOPE	0	7	X	7		AAW			

Panel Seaming Log
AG x211

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
25	**WT**	5/30/2017	TT	11:25 AM	75	SLOPE	0	3		3		AAW			
25	**WT**	5/30/2017	TT	-	-	SLOPE	3	5		2	X	AAW			
26	**WT**	5/30/2017	TT	-	-	SLOPE	0	3		3	X	AAW			
26	**WT**	5/30/2017	TT	11:35 AM	75	SLOPE	3	14	X	11		AAW			
27	**WT**	5/30/2017	TT	-	-	SLOPE	0	4	X	4	X	AAW			
29	**WT**	5/30/2017	TT	-	-	SLOPE	0	3		3	X	AAW			
29	**WT**	5/30/2017	TT	11:40 AM	75	SLOPE	3	17	X	14		AAW			
18	**WT**	5/30/2017	TT	1:00 PM	75	SLOPE	9	12	X	3		AAW			
30	**WT**	5/30/2017	TT	1:30 PM	75	SLOPE	10	19		9		AAW			
48	**WT**	5/30/2017	TT	3:16 PM	75	SLOPE	16	19		3		AAW			
73	**73**	5/30/2017	TT	3:24 PM	75	SLOPE	7	16	X	9		AAW			
73	**73**	5/30/2017	TT	-	-	SLOPE	0	7		7	X	AAW			
89	**PS**	6/1/2017	TT	1:46 PM	82	SLOPE	0	17	X	17		BJD			
90	**PS**	6/1/2017	TT	2:10 PM	82	SLOPE	0	16	X	16		BJD			
91	**PS**	6/1/2017	TT	2:32 PM	82	SLOPE	0	15	X	15		BJD			
92	**PS**	6/1/2017	TT	2:38 PM	84	SLOPE	0	19	X	19		BJD			
94	**PS**	6/1/2017	TT	3:10 PM	84	SLOPE	0	15	X	15		BJD			
95	**PS**	6/1/2017	TT	3:21 PM	83	SLOPE	0	16	X	16		BJD			
96	**PS**	6/1/2017	TT	3:34 PM	82	SLOPE	0	17	X	17		BJD			
97	**PS**	6/1/2017	TT	4:00 PM	80	SLOPE	0	17	X	17		BJD	52B	15	
98	**PS**	6/1/2017	TT	5:00 PM	79	SLOPE	0	12		12	X	BJD			
98	**PS**	6/2/2017	TT	10:30 AM	81	SLOPE	12	15	X	3	X	BJD	52	5	
100	**PS**	6/2/2017	TT	10:45 AM	82	SLOPE	0	23	X	23	X	BJD			
101	**PS**	6/2/2017	TT	10:55 AM	83	SLOPE	0	17	X	17	X	BJD			Seam covered by P-235
135	**WT**	6/22/2017	TT	8:30 AM	75	SLOPE	0	17	X	17		AAW	69	5	Serves as DS-52A
244	**104**	6/23/2017	TT	4:05 PM	80	SLOPE	0	15	X	15		AAW			
105	**244**	6/23/2017	TT	4:15 PM	80	SLOPE	0	16	X	16		AAW			
108	**244**	6/23/2017	TT	4:22 PM	80	SLOPE	0	16	X	16		AAW			
109	**244**	6/23/2017	TT	4:37 PM	80	SLOPE	0	16	X	16		AAW			
143	**244**	6/23/2017	TT	4:45 PM	80	SLOPE	0	16	X	16		AAW			
144	**244**	6/23/2017	TT	5:10 PM	80	SLOPE	0	5		5		AAW			

Panel Seaming Log

MAY x60

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
82	**PS**	6/1/2017	TT	8:00 AM	68	SLOPE	0	1		1		BJD			
82	**PS**	6/1/2017	TT	8:05 AM	68	SLOPE	1	16	X	15		BJD			
83	**PS**	6/1/2017	TT	8:08 AM	68	SLOPE	0	16	X	16		BJD			
84	**PS**	6/1/2017	TT	8:13 AM	68	SLOPE	0	16	X	16		BJD			
85	**PS**	6/1/2017	TT	8:56 AM	70	SLOPE	0	16	X	16		BJD			
86	**PS**	6/1/2017	TT	9:05 AM	70	SLOPE	0	20	X	20		BJD			
87	**PS**	6/1/2017	TT	9:58 AM	72	SLOPE	0	15	X	15		BJD	47B	14	
88	**PS**	6/1/2017	TT	10:07 AM	73	SLOPE	0	16	X	16	X	BJD	47	13	

Panel Seaming Log
AG x83

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
104	**PS**	6/2/2017	TT	1:20 PM	88	SLOPE	0	16	X	16		BJD			
105	**PS**	6/2/2017	TT	1:38 PM	90	SLOPE	0	20	X	20		BJD			
108	**PS**	6/2/2017	TT	3:03 PM	90	SLOPE	0	20	X	20		BJD			
109	**PS**	6/2/2017	TT	3:12 PM	90	SLOPE	0	11		11		BJD			
110	**PS**	6/3/2017	TT	9:30 AM	85	SLOPE	3	7	X	4		BJD			
81	**110**	6/3/2017	TT	9:32 AM	85	SLOPE	0	3	X	3		BJD			
110	**PS**	6/3/2017	TT	9:40 AM	85	SLOPE	0	11	X	11		BJD			
111	**PS**	6/3/2017	TT	9:59 AM	85	SLOPE	0	21		21		BJD			
111	**PS**	6/3/2017	TT	10:19 AM	85	SLOPE	21	28	X	7		BJD			
112	**PS**	6/3/2017	TT	10:25 AM	85	SLOPE	0	15	X	15		BJD			
113	**PS**	6/3/2017	TT	10:28 AM	85	SLOPE	0	16	X	16		BJD			
114	**PS**	6/3/2017	TT	10:36 AM	85	SLOPE	0	16	X	16		BJD			
115	**PS**	6/3/2017	TT	11:10 AM	88	SLOPE	0	16	X	16		BJD			
116	**PS**	6/3/2017	TT	11:22 AM	88	SLOPE	0	16	X	16		BJD			
117	**PS**	6/3/2017	TT	11:35 AM	88	SLOPE	0	16	X	16		BJD			
119	**PS**	6/3/2017	TT	11:44 AM	88	SLOPE	0	16	X	16		BJD			
120	**PS**	6/3/2017	TT	1:35 PM	90	SLOPE	0	16	X	16		BJD			
121	**PS**	6/3/2017	TT	1:43 PM	90	SLOPE	0	16	X	16		BJD			
122	**PS**	6/3/2017	TT	2:02 PM	90	SLOPE	0	16	X	16		BJD			
123	**PS**	6/3/2017	TT	2:34 PM	90	SLOPE	0	17	X	17		BJD			
124	**PS**	6/3/2017	TT	3:03 PM	90	SLOPE	0	18	X	18		BJD			
125	**PS**	6/3/2017	TT	3:15 PM	90	SLOPE	0	16	X	16		BJD			
126	**PS**	6/3/2017	TT	3:28 PM	90	SLOPE	0	17	X	17		BJD			
128	**PS**	6/3/2017	TT	4:02 PM	90	SLOPE	0	7	X	7		BJD			
127	**PS**	6/3/2017	TT	4:12 PM	90	SLOPE	0	17	X	17		BJD			
129	**PS**	6/3/2017	TT	4:20 PM	90	SLOPE	0	17	X	17		BJD			
130	**PS**	6/3/2017	TT	4:30 PM	90	SLOPE	0	16	X	16		BJD			
131	**PS**	6/3/2017	TT	4:40 PM	90	SLOPE	0	16	X	16		BJD	40	12	
132	**PS**	6/3/2017	TT	4:49 PM	90	SLOPE	0	14	X	14		BJD			

Panel Seaming Log
CC 25

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
110	**111**	6/3/2017	TT	8:08 AM	85	SLOPE	0	27		27		BJD			
110	**111**	6/3/2017	TT	8:13 AM	85	SLOPE	28	60		32		BJD			
110	**111**	6/3/2017	TT	8:18 AM	85	SLOPE	62	72		10		BJD			
110	**111**	6/3/2017	TT	8:19 AM	85	SLOPE	74	78	X	4		BJD			
112	**113**	6/3/2017	TT	8:24 AM	85	SLOPE	0	66	X	66		BJD			
114	**115**	6/3/2017	TT	8:37 AM	85	SLOPE	0	66	X	66		BJD			
116	**118**	6/3/2017	TT	8:56 AM	85	SLOPE	0	6	X	6		BJD			
116	**117**	6/3/2017	TT	8:57 AM	85	SLOPE	0	60	X	60		BJD			
119	**120**	6/3/2017	TT	9:15 AM	85	SLOPE	0	66	X	66		BJD			
122	**123**	6/3/2017	TT	9:30 AM	85	SLOPE	0	64	X	64		BJD			
124	**125**	6/3/2017	TT	10:03 AM	85	SLOPE	0	16		16		BJD			
124	**125**	6/3/2017	TT	10:04 AM	85	SLOPE	19	65	X	46		BJD			
126	**127**	6/3/2017	TT	10:30 AM	85	SLOPE	0	35	X	35		BJD			
127	**128**	6/3/2017	TT	10:37 AM	85	SLOPE	0	23	X	23		BJD	27	2	
130	**131**	6/3/2017	TT	10:56 AM	88	SLOPE	39	54	X	15		BJD			
130	**131**	6/3/2017	TT	11:05 AM	88	SLOPE	0	38		38		BJD			
133	**134**	6/3/2017	TT	11:14 AM	88	SLOPE	0	17	X	17		BJD			
132	**133**	6/3/2017	TT	11:20 AM	88	SLOPE	0	18	X	18		BJD			
132	**134**	6/3/2017	TT	11:22 AM	88	SLOPE	0	21	X	21		BJD			
134	**135**	6/3/2017	TT	11:27 AM	88	SLOPE	0	34	X	34		BJD			
110	**137**	6/3/2017	TT	1:22 PM	90	SLOPE	0	54		54		BJD			
110	**137**	6/3/2017	TT	1:31 PM	90	SLOPE	55	78		23		BJD			
110	**137**	6/3/2017	TT	1:34 PM	90	SLOPE	78	86	X	8		BJD			
138	**139**	6/3/2017	TT	1:40 PM	90	SLOPE	0	16		16		BJD			
138	**139**	6/3/2017	TT	1:47 PM	90	SLOPE	20	38		18		BJD			
138	**139**	6/3/2017	TT	1:52 PM	90	SLOPE	38	46	X	8		BJD	41	43	

Panel Seaming Log

SP 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
136	**137**	6/3/2017	TT	1:30 PM	90	SLOPE	0	16	X	16		BJD			
137	**138**	6/3/2017	TT	1:40 PM	90	SLOPE	0	47	X	47		BJD			
139	**140**	6/3/2017	TT	1:50 PM	90	SLOPE	0	47	X	47		BJD			
140	**141**	6/3/2017	TT	1:59 PM	90	SLOPE	0	47	X	47		BJD			
141	**142**	6/3/2017	TT	2:10 PM	90	SLOPE	0	43	X	43		BJD			
136	**142**	6/3/2017	TT	2:20 PM	90	SLOPE	6	12	X	6		BJD			
136	**141**	6/3/2017	TT	2:22 PM	90	SLOPE	0	16	X	16		BJD			
136	**140**	6/3/2017	TT	2:24 PM	90	SLOPE	0	16	X	16		BJD			
136	**139**	6/3/2017	TT	2:26 PM	90	SLOPE	0	16	X	16		BJD			
136	**138**	6/3/2017	TT	2:28 PM	90	SLOPE	0	16	X	16		BJD			
19	**167**	6/10/2017	TT	1:21 PM	85	SLOPE	0	6	X	6		BJD			
1	**166**	6/10/2017	TT	1:31 PM	85	SLOPE	0	4	X	4		BJD			
2	**166**	6/10/2017	TT	1:32 PM	85	SLOPE	0	7	X	7		BJD			
2	**165**	6/10/2017	TT	1:33 PM	85	SLOPE	0	6	X	6		BJD			
3	**165**	6/10/2017	TT	1:34 PM	85	SLOPE	0	4	X	4		BJD			
3	**163**	6/10/2017	TT	1:40 PM	85	SLOPE	0	6	X	6		BJD			
4	**163**	6/10/2017	TT	1:41 PM	85	SLOPE	0	7	X	7		BJD			
4	**162**	6/10/2017	TT	1:42 PM	85	SLOPE	0	4	X	4		BJD			
5	**162**	6/10/2017	TT	1:44 PM	85	SLOPE	0	9	X	9		BJD			
5	**161**	6/10/2017	TT	-	-	SLOPE	0	5	X	5	X	BJD			
6	**161**	6/10/2017	TT	1:48 PM	85	SLOPE	0	9	X	9		BJD			
6	**159**	6/10/2017	TT	-	-	SLOPE	0	4	X	X	X	BJD			
7	**159**	6/10/2017	TT	1:55 PM	85	SLOPE	0	7	X	7		BJD			
7	**158**	6/10/2017	TT	1:57 PM	85	SLOPE	0	3	X	3		BJD			
8	**158**	6/10/2017	TT	1:58 PM	85	SLOPE	0	9	X	9		BJD			
8	**156**	6/10/2017	TT	1:59 PM	85	SLOPE	0	5	X	5		BJD			
9	**156**	6/10/2017	TT	2:00 PM	85	SLOPE	0	8	X	8		BJD			
209	**210**	6/13/2017	TT	9:07 AM	80	SLOPE	0	62	X	62		BJD			
210	**211**	6/13/2017	TT	9:24 AM	80	SLOPE	0	61	X	61		BJD			
211	**212**	6/13/2017	TT	9:37 AM	80	SLOPE	0	61	X	61		BJD	48	13	
212	**213**	6/13/2017	TT	9:51 AM	80	SLOPE	7	33	X	26		BJD			
213	**214**	6/13/2017	TT	10:02 AM	85	SLOPE	0	4		4	x	BJD			
213	**214**	6/13/2017	TT	10:03 AM	85	SLOPE	4	33	X	29		BJD			
213	**215**	6/13/2017	TT	10:15 AM	85	SLOPE	0	11		11		BJD			
212	**215**	6/13/2017	TT	10:17 AM	85	SLOPE	0	26	X	26		BJD			
212	**213**	6/13/2017	TT	10:27 AM	85	SLOPE	0	5		5		BJD			

Panel Seaming Log

SP 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
215	**216**	6/13/2017	TT	10:30 AM	85	SLOPE	0	27	X	27		BJD			
214	**216**	6/13/2017	TT	10:40 AM	85	SLOPE	0	7		7	x	BJD			
214	**216**	6/13/2017	TT	10:40 AM	85	SLOPE	7	16	X	9		BJD			
218	**219**	6/13/2017	TT	10:51 AM	85	SLOPE	0	16	X	16		BJD			
217	**219**	6/13/2017	TT	10:55 AM	85	SLOPE	0	10	X	10		BJD			
217	**218**	6/13/2017	TT	10:57 AM	85	SLOPE	0	16		16		BJD			
217	**218**	6/13/2017	TT	11:00 AM	85	SLOPE	16	83	X	67		BJD			
221	**223**	6/13/2017	TT	11:35 AM	85	SLOPE	0	21		21		BJD			
221	**223**	6/13/2017	TT	11:40 AM	85	SLOPE	26	45		19		BJD			
221	**223**	6/13/2017	TT	11:44 AM	85	SLOPE	52	69	X	17		BJD			
222	**223**	6/13/2017	TT	1:24 PM	90	SLOPE	0	18	X	18		BJD			
137	**209**	6/13/2017	TT	1:30 PM	90	SLOPE	0	7	X	7		BJD			
136	**209**	6/13/2017	TT	1:31 PM	90	SLOPE	0	9	X	9		BJD			
136	**210**	6/13/2017	TT	1:37 PM	90	SLOPE	0	16	X	16		BJD			
136	**211**	6/13/2017	TT	1:44 PM	90	SLOPE	0	16	X	16		BJD			
136	**212**	6/13/2017	TT	1:51 PM	90	SLOPE	0	16	X	16		BJD			
136	**213**	6/13/2017	TT	1:58 PM	90	SLOPE	0	11	X	11		BJD			
136	**214**	6/13/2017	TT	2:04 PM	90	SLOPE	0	13	X	13		BJD			
223	**224**	6/14/2017	TT	7:42 AM	80	SLOPE	0	89	X	89		BJD	50	47	
224	**225**	6/14/2017	TT	8:00 AM	80	SLOPE	0	13		13		BJD			
224	**225**	6/14/2017	TT	8:04 AM	80	SLOPE	13	89	X	76		BJD			
R478	**100**	6/19/2017	TT	8:09 AM	75	SLOPE	0	137	X	137		BJV			
99	**R478**	6/19/2017	TT	8:50 AM	75	SLOPE	0	125	X	125		BJV			
98	**R478**	6/19/2017	TT	9:18 AM	75	SLOPE	0	12	X	12		BJV			
93	**R479**	6/19/2017	TT	9:38 AM	75	SLOPE	0	43	X	43		BJV			
91	**R479**	6/19/2017	TT	9:40 AM	75	SLOPE	0	43	X	43		BJV	58	21	
87	**R480**	6/19/2017	TT	9:53 AM	75	SLOPE	0	70	X	70		BJV			
86	**R480**	6/19/2017	TT	10:08 AM	75	SLOPE	0	70	X	70		BJV			
86	**R481**	6/19/2017	TT	10:22 AM	75	SLOPE	0	16	X	16		BJV			
85	**R481**	6/19/2017	TT	10:29 AM	75	SLOPE	0	16	X	16		BJV			
86	**R482**	6/19/2017	TT	10:32 AM	75	SLOPE	0	44	X	44		BJV			
85	**R482**	6/19/2017	TT	10:42 AM	75	SLOPE	0	44	X	44		BJV			
245	**246**	6/21/2017	TT	1:25 PM	90	SLOPE	0	71	X	71		AAW			
246	**247**	6/21/2017	TT	1:45 PM	90	SLOPE	0	31		31		AAW			
246	**247**	6/21/2017	TT	1:52 PM	90	SLOPE	36	56	X	20		AAW			
247	**248**	6/21/2017	TT	1:56 PM	90	SLOPE	0	47	X	47		AAW			

Panel Seaming Log

SP 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
248	**249**	6/21/2017	TT	2:05 PM	90	SLOPE	0	40	X	40		AAW			
249	**250**	6/21/2017	TT	2:12 PM	90	SLOPE	0	31	X	31		AAW	61	14	
250	**251**	6/21/2017	TT	2:17 PM	90	SLOPE	0	24	X	24		AAW			
251	**244**	6/21/2017	TT	2:29 PM	90	SLOPE	0	17	X	17		AAW			
242	**251**	6/21/2017	TT	2:32 PM	90	SLOPE	0	11	X	11		AAW			
242	**250**	6/21/2017	TT	2:34 PM	90	SLOPE	0	17	X	17		AAW			
242	**249**	6/21/2017	TT	2:36 PM	90	SLOPE	0	18	X	18		AAW			
242	**248**	6/21/2017	TT	2:48 PM	90	SLOPE	0	12	X	12		AAW			
243	**248**	6/21/2017	TT	2:49 PM	90	SLOPE	0	6	X	6		AAW			
243	**247**	6/21/2017	TT	2:49 PM	90	SLOPE	0	18	X	18		AAW			
243	**246**	6/21/2017	TT	2:51 PM	90	SLOPE	0	5		5		AAW			
R617	**246**	6/21/2017	TT	2:57 PM	90	SLOPE	0	11	X	11		AAW			
R617	**243**	6/21/2017	TT	3:01 PM	90	SLOPE	0	15	X	15		AAW			
245	**252**	6/22/2017	TT	8:00 AM	75	SLOPE	0	69	X	69		AAW			
252	**254**	6/22/2017	TT	8:18 AM	75	SLOPE	0	55	X	55		AAW			
254	**253**	6/22/2017	TT	8:36 AM	75	SLOPE	0	16	X	16		AAW			
252	**253**	6/22/2017	TT	8:42 AM	75	SLOPE	0	8	X	8		AAW			
253	**255**	6/22/2017	TT	8:44 AM	75	SLOPE	0	4	X	4		AAW			
254	**255**	6/22/2017	TT	8:50 AM	75	SLOPE	0	55	X	55		AAW			
255	**256**	6/22/2017	TT	9:09 AM	75	SLOPE	0	46	X	46		AAW	62	13	
256	**257**	6/22/2017	TT	9:20 AM	75	SLOPE	0	34	X	34		AAW			
257	**258**	6/22/2017	TT	9:35 AM	75	SLOPE	0	30	X	30		AAW			
258	**259**	6/22/2017	TT	9:39 AM	75	SLOPE	0	30	X	30		AAW			
259	**260**	6/22/2017	TT	9:48 AM	75	SLOPE	0	33	X	33		AAW			
260	**261**	6/22/2017	TT	9:57 AM	75	SLOPE	0	36	X	36		AAW			
261	**262**	6/22/2017	TT	10:10 AM	75	SLOPE	0	35	X	35		AAW			
262	**263**	6/22/2017	TT	10:36 AM	75	SLOPE	3	35	X	32		AAW			
263	**264**	6/22/2017	TT	10:44 AM	75	SLOPE	0	32	X	32		AAW			
264	**265**	6/22/2017	TT	10:55 AM	75	SLOPE	0	30	X	30		AAW			
265	**266**	6/22/2017	TT	11:02 AM	75	SLOPE	0	30	X	30		AAW			
266	**267**	6/22/2017	TT	11:16 AM	75	SLOPE	0	28	X	28		AAW			
267	**268**	6/22/2017	TT	11:24 AM	75	SLOPE	0	27	X	27		AAW			
268	**269**	6/22/2017	TT	11:30 AM	75	SLOPE	0	26	X	26		AAW			
270	**271**	6/22/2017	TT	3:39 PM	80	SLOPE	0	16	X	16		AAW			
272	**273**	6/22/2017	TT	3:47 PM	80	SLOPE	0	16	X	16		AAW			
271	**273**	6/22/2017	TT	3:53 PM	80	SLOPE	0	31	X	31		AAW	63	21	

Panel Seaming Log

SP 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
270	**273**	6/22/2017	TT	3:58 PM	80	SLOPE	0	5		5		AAW			
270	**272**	6/22/2017	TT	3:59 PM	80	SLOPE	0	100	X	100		AAW			
274	**275**	6/22/2017	TT	4:02 PM	80	SLOPE	0	39		39		AAW			
274	**275**	6/22/2017	TT	4:09 PM	80	SLOPE	46	68	X	22		AAW			
275	**276**	6/22/2017	TT	4:12 PM	80	SLOPE	0	27	X	27		AAW			
276	**277**	6/22/2017	TT	4:22 PM	80	SLOPE	0	15	X	15		AAW			
275	**277**	6/22/2017	TT	4:26 PM	80	SLOPE	0	19	X	19		AAW			
276	**278**	6/22/2017	TT	4:29 PM	80	SLOPE	0	25	X	25		AAW			
272	**279**	6/22/2017	TT	4:40 PM	80	SLOPE	0	65	X	65		AAW			
278	**279**	6/22/2017	TT	4:55 PM	80	SLOPE	0	30	X	30		AAW			
276	**279**	6/22/2017	TT	4:59 PM	80	SLOPE	0	2	X	2		AAW			
277	**279**	6/22/2017	TT	5:00 PM	80	SLOPE	0	24	X	24		AAW			
275	**279**	6/22/2017	TT	-	-	SLOPE	0	2		2	X	AAW			
279	**280**	6/22/2017	TT	5:07 PM	80	SLOPE	0	16	X	16		AAW			
275	**280**	6/22/2017	TT	5:10 PM	80	SLOPE	0	26		26		AAW			
279	**280**	6/22/2017	TT	5:13 PM	80	SLOPE	0	15	X	15		AAW			
274	**280**	6/22/2017	TT	5:15 PM	80	SLOPE	0	14	X	14		AAW			
280	**281**	6/22/2017	TT	5:17 PM	80	SLOPE	0	22	X	22		AAW			
274	**281**	6/22/2017	TT	5:20 PM	80	SLOPE	0	29	X	29		AAW			
273	**280**	6/22/2017	TT	5:28 PM	80	SLOPE	0	23	X	23		AAW			
272	**280**	6/22/2017	TT	5:32 PM	80	SLOPE	0	32	X	32		AAW			
281	**282**	6/22/2017	TT	5:40 PM	80	SLOPE	0	24	X	24		AAW	64	14	
274	**282**	6/22/2017	TT	5:45 PM	80	SLOPE	0	36	X	36		AAW			
271	**281**	6/22/2017	TT	5:59 PM	80	SLOPE	0	11	X	11		AAW			
273	**281**	6/22/2017	TT	6:02 PM	80	SLOPE	0	20	X	20		AAW			
208	**281**	6/22/2017	TT	6:10 PM	80	SLOPE	0	111	X	111		AAW			
270	**283**	6/22/2017	TT	6:22 PM	80	SLOPE	0	95	X	95		AAW			
281	**PS**	6/22/2017	TT	6:25 PM	80	SLOPE	0	16	X	16		AAW			
284	**285**	6/22/2017	TT	6:57 PM	80	SLOPE	0	8	X	8		AAW			
283	**284**	6/22/2017	TT	6:58 PM	80	SLOPE	0	19	X	19		AAW			
283	**285**	6/22/2017	TT	7:01 PM	80	SLOPE	0	45	X	45		AAW	66	18	

Panel Seaming Log

SP 25

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
107	**143**	6/6/2017	TT	11:40 AM	80	SLOPE	0	50	X	50		BJD			
109	**143**	6/6/2017	TT	11:50 AM	80	SLOPE	0	52		52		BJD			
109	**143**	6/6/2017	TT	11:58 AM	80	SLOPE	52	102		50		BJD			
109	**143**	6/6/2017	TT	12:07 PM	80	SLOPE	103	127	X	24		BJD			
143	**144**	6/6/2017	TT	1:42 PM	83	SLOPE	0	113		113		BJD			
143	**144**	6/6/2017	TT	2:09 PM	83	SLOPE	113	175	X	62		BJD			
146	**147**	6/6/2017	TT	3:00 PM	83	SLOPE	0	73	X	73		BJD			
146	**148**	6/6/2017	TT	3:14 PM	83	SLOPE	0	42	X	42		BJD			
152	**153**	6/6/2017	TT	3:52 PM	83	SLOPE	22	129	X	107		BJD	29	56	
152	**154**	6/6/2017	TT	4:12 PM	80	SLOPE	0	19	X	19		BJD			
153	**155**	6/6/2017	TT	4:19 PM	80	SLOPE	0	153	X	153		BJD			
152	**153**	6/6/2017	TT	4:48 PM	80	SLOPE	0	22	X	22		BJD			
145	**153**	6/6/2017	TT	4:49 PM	80	SLOPE	0	26	X	26		BJD			
154	**155**	6/6/2017	TT	4:50 PM	80	SLOPE	0	24	X	24		BJD			
145	**155**	6/6/2017	TT	5:09 PM	80	SLOPE	0	11	X	11		BJD			
146	**153**	6/6/2017	TT	5:15 PM	80	SLOPE	0	4	X	4		BJD			
146	**152**	6/6/2017	TT	5:19 PM	80	SLOPE	0	21	X	21		BJD			
155	**156**	6/7/2017	TT	2:04 PM	80	SLOPE	0	40		40		BJD			
155	**156**	6/7/2017	TT	2:15 PM	80	SLOPE	40	65		25		BJD			
155	**156**	6/7/2017	TT	2:20 PM	80	SLOPE	65	203	X	138		BJD	31	147	
157	**158**	6/7/2017	TT	2:44 PM	80	SLOPE	0	16	X	16		BJD			
156	**157**	6/7/2017	TT	2:50 PM	80	SLOPE	0	103	X	103		BJD			
156	**158**	6/7/2017	TT	3:08 PM	80	SLOPE	0	110	X	110		BJD			
157	**159**	6/7/2017	TT	3:31 PM	80	SLOPE	0	116	X	116		BJD			
158	**159**	6/7/2017	TT	3:49 PM	80	SLOPE	0	110	X	110		BJD	32	99	
159	**160**	6/7/2017	TT	4:20 PM	80	SLOPE	0	215	X	215		BJD	53	213	
159	**161**	6/7/2017	TT	5:00 PM	80	SLOPE	0	5	X	5		BJD			

Panel Seaming Log
AG 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
163	**164**	6/8/2017	TT	1:40 PM	80	SLOPE	0	107	X	107		BJD			
164	**165**	6/8/2017	TT	2:06 PM	80	SLOPE	0	16	X	16		BJD			
163	**165**	6/8/2017	TT	2:10 PM	80	SLOPE	0	78	X	78		BJD			
164	**166**	6/8/2017	TT	2:25 PM	80	SLOPE	0	77	X	77		BJD			
165	**166**	6/8/2017	TT	2:34 PM	80	SLOPE	0	84	X	84		BJD			
166	**167**	6/8/2017	TT	2:47 PM	80	SLOPE	0	134	X	134		BJD			
167	**168**	6/8/2017	TT	3:09 PM	80	SLOPE	0	108	X	108		BJD	33	4	
168	**169**	6/8/2017	TT	3:28 PM	80	SLOPE	0	56	X	56		BJD			
169	**170**	6/8/2017	TT	3:38 PM	80	SLOPE	0	29	X	29		BJD			
168	**170**	6/8/2017	TT	3:43 PM	80	SLOPE	0	33	X	33		BJD			
167	**170**	6/8/2017	TT	3:47 PM	80	SLOPE	0	33	X	33		BJD			
166	**170**	6/8/2017	TT	3:52 PM	80	SLOPE	0	33	X	33		BJD			
164	**170**	6/8/2017	TT	3:56 PM	80	SLOPE	0	33	X	33		BJD			
163	**170**	6/8/2017	TT	3:58 PM	80	SLOPE	0	30	X	30		BJD			
162	**170**	6/8/2017	TT	4:08 PM	80	SLOPE	0	28	X	28		BJD			
170	**171**	6/8/2017	TT	4:14 PM	80	SLOPE	0	268	X	268		BJD	34	121	
172	**173**	6/8/2017	TT	4:58 PM	80	SLOPE	0	16	X	16		BJD			
173	**174**	6/8/2017	TT	5:09 PM	80	SLOPE	0	140	X	140		BJD			
172	**174**	6/8/2017	TT	5:31 PM	80	SLOPE	0	10	X	10		BJD			
175	**176**	6/8/2017	TT	5:34 PM	80	SLOPE	0	75	X	75		BJD			
176	**177**	6/8/2017	TT	5:46 PM	80	SLOPE	0	37	X	37		BJD			
170	**178**	6/8/2017	TT	5:50 PM	80	SLOPE	0	13	X	13		BJD			
169	**178**	6/8/2017	TT	5:52 PM	80	SLOPE	0	18	X	18		BJD			
171	**179**	6/9/2017	TT	10:09 AM	75	SLOPE	6	35	X	29		BJD			0-6 Capped
173	**179**	6/9/2017	TT	10:14 AM	75	SLOPE	0	35	X	35		BJD	35	15	
174	**179**	6/9/2017	TT	10:19 AM	75	SLOPE	0	35	X	35		BJD			
175	**179**	6/9/2017	TT	10:26 AM	75	SLOPE	0	35	X	35		BJD			
176	**179**	6/9/2017	TT	10:34 AM	75	SLOPE	0	25	X	25		BJD			
179	**180**	6/9/2017	TT	10:38 AM	75	SLOPE	0	10		10		BJD			
179	**180**	6/9/2017	TT	10:39 AM	75	SLOPE	10	15	X	5		BJD			
176	**180**	6/9/2017	TT	10:40 AM	75	SLOPE	0	10	X	10		BJD			
177	**180**	6/9/2017	TT	10:50 AM	75	SLOPE	0	33	X	33		BJD			
181	**182**	6/9/2017	TT	10:52 AM	75	SLOPE	0	93	X	93		BJD			
181	**183**	6/9/2017	TT	11:17 AM	80	SLOPE	0	77	X	77		BJD			
182	**185**	6/9/2017	TT	11:40 AM	80	SLOPE	0	90	X	90		BJD			Note: 182/184 to be capped
184	**185**	6/9/2017	TT	1:02 PM	80	SLOPE	0	63	X	63		BJD			

Panel Seaming Log
AG 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
185	**186**	6/9/2017	TT	1:16 PM	80	SLOPE	0	5	X	5		BJD			
186	**187**	6/9/2017	TT	1:20 PM	80	SLOPE	0	91	X	91		BJD	36	4	
185	**187**	6/9/2017	TT	1:28 PM	80	SLOPE	0	42	X	42		BJD			
185	**189**	6/9/2017	TT	1:42 PM	80	SLOPE	0	79	X	79		BJD			
189	**190**	6/9/2017	TT	2:17 PM	85	SLOPE	0	187	X	187		BJD			
185	**190**	6/9/2017	TT	2:52 PM	85	SLOPE	0	40	X	40		BJD			
191	**192**	6/9/2017	TT	3:02 PM	85	SLOPE	0	16	X	16		BJD			
192	**193**	6/9/2017	TT	3:08 PM	85	SLOPE	0	26		26		BJD			
192	**193**	6/9/2017	TT	3:11 PM	85	SLOPE	26	91	X	65		BJD	37	18	
191	**193**	6/9/2017	TT	3:22 PM	85	SLOPE	0	118	X	118		BJD			
194	**195**	6/9/2017	TT	3:47 PM	85	SLOPE	0	47	X	47		BJD			
195	**196**	6/9/2017	TT	4:11 PM	85	SLOPE	0	16	X	16		BJD			
195	**197**	6/9/2017	TT	4:20 PM	85	SLOPE	0	37	X	37		BJD			
196	**197**	6/9/2017	TT	4:27 PM	85	SLOPE	0	146	X	146		BJD			
198	**199**	6/10/2017	TT	8:08 AM	80	SLOPE	0	36	X	36		BJD			
199	**200**	6/10/2017	TT	8:17 AM	80	SLOPE	0	11		11		BJD			11-16: Pipe Boat (16 EOS)
198	**200**	6/10/2017	TT	8:19 AM	80	SLOPE	0	51		51		BJD	44	42	
198	**200**	6/10/2017	TT	8:29 AM	80	SLOPE	59	128	X	69		BJD	54	126	51-59: Pipe Boat
201	**202**	6/10/2017	TT	8:46 AM	80	SLOPE	0	9		9		BJD			Patch: 9

Panel Seaming Log
SP 2479

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
171	**173**	6/8/2017	TT	4:38 PM	80	SLOPE	0	171	X	171		BJD			
171	**172**	6/8/2017	TT	5:03 PM	80	SLOPE	0	26	X	26		BJD			
174	**175**	6/8/2017	TT	5:13 PM	80	SLOPE	0	120	X	120		BJD			
180	**181**	6/9/2017	TT	10:40 AM	75	SLOPE	0	52	X	52		BJD			
179	**181**	6/9/2017	TT	10:50 AM	75	SLOPE	0	160	X	160		BJD	38	131	
181	**184**	6/9/2017	TT	11:26 AM	75	SLOPE	0	51	X	51		BJD			
171	**181**	6/9/2017	TT	11:40 AM	80	SLOPE	0	25	X	25		BJD			
183	**186**	6/9/2017	TT	1:16 PM	80	SLOPE	0	77	X	77		BJD			
187	**188**	6/9/2017	TT	1:37 PM	80	SLOPE	0	62	X	62		BJD			
188	**189**	6/9/2017	TT	1:51 PM	80	SLOPE	0	49	X	49		BJD			
187	**189**	6/9/2017	TT	2:01 PM	85	SLOPE	0	67	X	67		BJD			
190	**191**	6/9/2017	TT	2:25 PM	85	SLOPE	0	121	X	121		BJD	39	42	
190	**192**	6/9/2017	TT	2:55 PM	85	SLOPE	0	98	X	98		BJD			
193	**194**	6/9/2017	TT	3:20 PM	85	SLOPE	0	203	X	203		BJD			
194	**196**	6/9/2017	TT	4:12 PM	85	SLOPE	0	151	X	151		BJD			
197	**198**	6/10/2017	TT	7:50 AM	80	SLOPE	0	176	X	176		BJD	42	67	
199	**201**	6/10/2017	TT	8:36 AM	80	SLOPE	0	28	X	28		BJD			
200	**201**	6/10/2017	TT	8:45 AM	80	SLOPE	0	128	X	128		BJD			
201	**202**	6/10/2017	TT	9:12 AM	80	SLOPE	9	102	X	93		BJD			
201	**203**	6/10/2017	TT	9:32 AM	80	SLOPE	0	50	X	50		BJD			
202	**203**	6/10/2017	TT	9:45 AM	80	SLOPE	0	10		10		BJD			10-16: Repair (TMP)
202	**204**	6/10/2017	TT	10:04 AM	80	SLOPE	0	75	X	75		BJD			
203	**204**	6/10/2017	TT	10:15 AM	80	SLOPE	0	48	X	48		BJD	43	7	
198	**PS**	6/10/2017	TT	10:29 AM	80	SLOPE	0	15	X	15		BJD			
200	**PS**	6/10/2017	TT	10:31 AM	80	SLOPE	0	16	X	16		BJD			
201	**PS**	6/10/2017	TT	10:33 AM	80	SLOPE	0	9		9		BJD			
201	**PS**	6/10/2017	TT	10:36 AM	80	SLOPE	9	16	X	7		BJD			
203	**PS**	6/10/2017	TT	10:40 AM	80	SLOPE	0	16	X	16		BJD	55B	14	
204	**PS**	6/10/2017	TT	10:41 AM	80	SLOPE	0	16	X	16	X	BJD	55	12	

Panel Seaming Log
SP 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
202	**205**	6/12/2017	TT	8:59 AM	80	SLOPE	0	16	X	16		BJD			
204	**205**	6/12/2017	TT	8:00 AM	80	SLOPE	0	16	X	16		BJD			
207	**208**	6/12/2017	TT	9:10 AM	80	SLOPE	0	24		24		BJD			
207	**208**	6/12/2017	TT	9:15 AM	80	SLOPE	24	115	X	91		BJD	56	105	

Panel Seaming Log
CC 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
205	**206**	6/12/2017	TT	8:14 AM	80	SLOPE	0	14	X	14		BJD			
204	**206**	6/12/2017	TT	8:18 AM	80	SLOPE	0	120	X	120		BJD			
206	**207**	6/12/2017	TT	8:39 AM	80	SLOPE	0	126	X	126		BJD			
197	**R244**	6/12/2017	TT	9:40 AM	80	SLOPE	0	15	X	15		BJD			
196	**R244**	6/12/2017	TT	9:44 AM	80	SLOPE	0	16	X	16		BJD			
194	**R244**	6/12/2017	TT	9:46 AM	80	SLOPE	0	5	X	5		BJD			
194	**R245**	6/12/2017	TT	9:47 AM	80	SLOPE	0	10	X	10		BJD			
193	**R245**	6/12/2017	TT	9:49 AM	80	SLOPE	0	16	X	16		BJD			
R245	**PS**	6/12/2017	TT	10:01 AM	85	SLOPE	0	25	X	25		BJD			
R244	**PS**	6/12/2017	TT	10:04 AM	85	SLOPE	0	16		16		BJD			
R244	**PS**	6/12/2017	TT	10:06 AM	85	SLOPE	16	35	X	19		BJD			
191	**R246**	6/12/2017	TT	10:18 AM	85	SLOPE	0	12	X	12		BJD			
191	**R247**	6/12/2017	TT	10:20 AM	85	SLOPE	0	4	X	4		BJD			
190	**R247**	6/12/2017	TT	10:20 AM	85	SLOPE	0	8	X	8		BJD			
185	**R247**	6/12/2017	TT	10:22 AM	85	SLOPE	0	16	X	16		BJD			
184	**R248**	6/12/2017	TT	10:23 AM	85	SLOPE	0	16	X	16		BJD			
171	**R249**	6/12/2017	TT	10:31 AM	85	SLOPE	0	4		4		BJD			
171	**R249**	6/12/2017	TT	10:31 AM	85	SLOPE	4	13	X	9		BJD			
170	**R249**	6/12/2017	TT	10:33 AM	85	SLOPE	0	7	X	7		BJD			
R249	**PS**	6/12/2017	TT	10:38 AM	85	SLOPE	0	15		15		BJD			
R249	**PS**	6/12/2017	TT	10:42 AM	85	SLOPE	15	21	X	6		BJD			
R248	**PS**	6/12/2017	TT	10:43 AM	85	SLOPE	0	16	X	16		BJD			
R247	**PS**	6/12/2017	TT	10:46 AM	85	SLOPE	0	27	X	27		BJD	45	9	
R246	**PS**	6/12/2017	TT	10:50 AM	85	SLOPE	0	9	X	9		BJD			
R256	**R257**	6/12/2017	TT	10:58 AM	85	SLOPE	0	13	X	13		BJD			
160	**R256**	6/12/2017	TT	11:02 AM	85	SLOPE	0	10	X	10		BJD			
160	**R257**	6/12/2017	TT	11:04 AM	85	SLOPE	0	6	X	6		BJD			
162	**R257**	6/12/2017	TT	11:05 AM	85	SLOPE	0	4	X	4		BJD			
170	**R257**	6/12/2017	TT	11:06 AM	85	SLOPE	0	13	X	13		BJD			
170	**R256**	6/12/2017	TT	11:08 AM	85	SLOPE	0	8	X	8		BJD			
159	**R256**	6/12/2017	TT	11:12 AM	85	SLOPE	0	8		8		BJD			Patch: 8-10
159	**R256**	6/12/2017	TT	11:16 AM	85	SLOPE	10	16	X	6		BJD			
R258	**171**	6/12/2017	TT	11:19 AM	85	SLOPE	0	12	X	12		BJD			
R258	**181**	6/12/2017	TT	11:23 AM	85	SLOPE	0	4	X	4		BJD			
R258	**184**	6/12/2017	TT	11:24 AM	85	SLOPE	0	9	X	9		BJD			
170	**R250**	6/12/2017	TT	11:26 AM	85	SLOPE	0	6	X	6		BJD			

Panel Seaming Log
CC 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
R251	**R256**	6/12/2017	TT	11:28 AM	85	SLOPE	0	9	X	9		BJD			
159	**R251**	6/12/2017	TT	11:29 AM	85	SLOPE	0	6	X	6		BJD			
159	**R252**	6/12/2017	TT	11:30 AM	85	SLOPE	0	11	X	11		BJD			
157	**R253**	6/12/2017	TT	11:35 AM	85	SLOPE	0	20	X	20		BJD			
R250	**PS**	6/12/2017	TT	11:42 AM	85	SLOPE	0	8	X	8		BJD			
R251	**PS**	6/12/2017	TT	11:44 AM	85	SLOPE	0	9		9		BJD			
R251	**PS**	6/12/2017	TT	11:45 AM	85	SLOPE	9	16	X	7		BJD			
R252	**PS**	6/12/2017	TT	11:46 AM	85	SLOPE	0	12	X	12		BJD			
R253	**PS**	6/12/2017	TT	11:52 AM	85	SLOPE	0	21	X	21		BJD			
145	**R255**	6/12/2017	TT	1:13 PM	90	SLOPE	0	13	X	13		BJD			
155	**R254**	6/12/2017	TT	1:16 PM	90	SLOPE	0	10	X	10		BJD			
156	**R254**	6/12/2017	TT	1:18 PM	90	SLOPE	0	16	X	16		BJD			
R254	**PS**	6/12/2017	TT	1:25 PM	90	SLOPE	0	15	X	15		BJD			
R254	**PS**	6/12/2017	TT	1:33 PM	90	SLOPE	0	11	X	11		BJD			
R255	**PS**	6/12/2017	TT	1:39 PM	90	SLOPE	0	13	X	13		BJD			
181	**PE3**	6/12/2017	TT	1:47 PM	95	SLOPE	0	8	X	8		BJD			
182	**PE3**	6/12/2017	TT	1:50 PM	95	SLOPE	0	10	X	10		BJD			
186	**PE3**	6/12/2017	TT	1:54 PM	95	SLOPE	0	7	X	7		BJD			
183	**PE3**	6/12/2017	TT	2:01 PM	95	SLOPE	0	12	X	12		BJD			
206	**PS**	6/12/2017	TT	2:21 PM	95	SLOPE	0	16	X	16		BJD			
207	**PS**	6/12/2017	TT	2:24 PM	95	SLOPE	0	3		3		BJD			
207	**PS**	6/12/2017	TT	2:25 PM	95	SLOPE	3	16	X	13		BJD			
208	**PS**	6/12/2017	TT	2:30 PM	95	SLOPE	0	16	X	16		BJD			
226	**227**	6/14/2017	TT	9:24 AM	80	SLOPE	0	64		64		BJD			
226	**227**	6/14/2017	TT	9:35 AM	80	SLOPE	64	71		7		BJD			
226	**227**	6/14/2017	TT	9:40 AM	80	SLOPE	71	86	X	15		BJD			
228	**229**	6/14/2017	TT	9:50 AM	80	SLOPE	0	88	X	88		BJD	51	29	
230	**231**	6/14/2017	TT	10:13 AM	80	SLOPE	0	89	X	89		BJD			
232	**233**	6/14/2017	TT	10:37 AM	80	SLOPE	0	16	X	16		BJD			
227	**PS**	6/14/2017	TT	10:45 AM	80	SLOPE	0	15	X	15		BJD			
234	**235**	6/14/2017	TT	11:35 AM	80	SLOPE	0	67	X	67		BJD			
234	**236**	6/14/2017	TT	11:50 AM	80	SLOPE	0	17	X	17		BJD			
237	**238**	6/21/2017	TT	9:00 AM	80	SLOPE	0	80	X	80		AAW			
239	**240**	6/21/2017	TT	9:15 AM	80	SLOPE	0	16	X	16		AAW			
238	**240**	6/21/2017	TT	9:20 AM	80	SLOPE	0	34	X	34		AAW			
238	**239**	6/21/2017	TT	9:28 AM	80	SLOPE	0	41		41		AAW			

Panel Seaming Log
CC 45

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
240	**241**	6/21/2017	TT	9:58 AM	85	SLOPE	0	39	X	39		AAW			
239	**241**	6/21/2017	TT	10:08 AM	85	SLOPE	0	48	X	48		AAW	59	6	
241	**242**	6/21/2017	TT	10:32 AM	85	SLOPE	0	57	X	57		AAW			
236	**237**	6/21/2017	TT	10:54 AM	85	SLOPE	0	15		15		AAW			15-21 (eos) capped
241	**243**	6/21/2017	TT	10:45 AM	85	SLOPE	0	36	X	36		AAW			
242	**243**	6/21/2017	TT	10:29 AM	85	SLOPE	0	16	X	16		AAW			
242	**244**	6/21/2017	TT	11:15 AM	85	SLOPE	0	16	X	16		AAW			
241	**244**	6/21/2017	TT	11:18 AM	85	SLOPE	0	16	X	16		AAW			
239	**244**	6/21/2017	TT	11:20 AM	85	SLOPE	0	16	X	16		AAW			
238	**244**	6/21/2017	TT	11:25 AM	85	SLOPE	0	16	X	16		AAW			
237	**244**	6/21/2017	TT	11:28 AM	85	SLOPE	0	16	X	16		AAW	65	10	
235	**244**	6/21/2017	TT	11:30 AM	85	SLOPE	0	11	X	11		AAW			11-16 (eos) capped

Panel Seaming Log
CC 2650

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
209	**217**	6/13/2017	TT	10:40 AM	85	SLOPE	0	4		4	x	BJD			
209	**217**	6/13/2017	TT	10:40 AM	85	SLOPE	4	16	X	12		BJD			
210	**217**	6/13/2017	TT	10:45 AM	85	SLOPE	0	16	X	16		BJD			
211	**217**	6/13/2017	TT	10:47 AM	85	SLOPE	0	16	X	16		BJD			
212	**217**	6/13/2017	TT	10:50 AM	85	SLOPE	0	16	X	16		BJD			
215	**217**	6/13/2017	TT	10:54 AM	85	SLOPE	0	15	X	15		BJD			
216	**217**	6/13/2017	TT	10:55 AM	85	SLOPE	0	10		10		BJD			
216	**217**	6/13/2017	TT	10:58 AM	85	SLOPE	10	16	X	6		BJD			
219	**220**	6/13/2017	TT	11:01 AM	85	SLOPE	0	10	X	10		BJD			
218	**220**	6/13/2017	TT	11:02 AM	85	SLOPE	0	73		73		BJD			73-77: Patch (73-77)
218	**220**	6/13/2017	TT	11:25 AM	85	SLOPE	77	81	X	4		BJD			
220	**221**	6/13/2017	TT	11:36 AM	85	SLOPE	0	69	X	69		BJD	57B	67	
221	**222**	6/13/2017	TT	11:27 AM	85	SLOPE	0	8		8	x	BJD			Pipe Boot
221	**222**	6/13/2017	TT	11:27 AM	85	SLOPE	8	16	X	8	x	BJD			
220	**222**	6/13/2017	TT	11:47 AM	85	SLOPE	0	2		2	x	BJD			2-10: Pipe Boot
220	**222**	6/13/2017	TT	12:28 PM	90	SLOPE	10	20	X	10	x	BJD	57	18	

Panel Seaming Log
SP 1406

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
225	**226**	6/14/2017	TT	9:05 AM	80	SLOPE	0	87	X	87		BJD			
227	**228**	6/14/2017	TT	9:31 AM	80	SLOPE	0	83		83		BJD			83-88: CAP
229	**230**	6/14/2017	TT	10:00 AM	80	SLOPE	0	88	X	88		BJD			
232	**234**	6/14/2017	TT	10:21 AM	80	SLOPE	0	59	X	59		BJD			
231	**233**	6/14/2017	TT	10:42 AM	80	SLOPE	0	31	X	31		BJD			
231	**232**	6/14/2017	TT	10:47 AM	80	SLOPE	0	27		27		BJD			Pipe Boot: 27-30
231	**232**	6/14/2017	TT	10:51 AM	80	SLOPE	30	36		6		BJD			Pipe Boot: 36-37
231	**232**	6/14/2017	TT	10:53 AM	80	SLOPE	37	43		6		BJD			Pipe Boot: 43
231	**232**	6/14/2017	TT	10:55 AM	80	SLOPE	43	57	X	14		BJD			
233	**234**	6/14/2017	TT	11:15 AM	80	SLOPE	0	28	X	28		BJD			
235	**237**	6/21/2017	TT	8:45 AM	80	SLOPE	0	58	X	58		AAW	60	50	

Panel Seaming Log
WL x15

From	To	Date	Material Type	Start Time	Amb Temp	Location	Station Start	Station End	End of Seam	Seam Length	Capped	QA ID	DS #	DS Sta.	Comments
269	**PS**	6/23/2017	TT	2:10 PM	80	SLOPE	7	11	X	4		AAW			11-13 (eos) capped
268	**PS**	6/23/2017	TT	2:21 PM	80	SLOPE	0	16	X	16		AAW			
267	**PS**	6/23/2017	TT	2:29 PM	80	SLOPE	0	16	X	16		AAW			
266	**PS**	6/23/2017	TT	2:43 PM	80	SLOPE	0	16	X	16		AAW			
265	**PS**	6/23/2017	TT	3:17 PM	80	SLOPE	0	16	X	16		AAW			
263	**PS**	6/23/2017	TT	3:46 PM	80	SLOPE	0	16	X	16		AAW			
264	**PS**	6/23/2017	TT	3:51 PM	80	SLOPE	0	16	X	16		AAW			
262	**PS**	6/23/2017	TT	4:16 PM	80	SLOPE	0	16	X	16		AAW			
261	**PS**	6/23/2017	TT	4:52 PM	80	SLOPE	0	16	X	16		AAW			
260	**PS**	6/23/2017	TT	5:06 PM	80	SLOPE	0	16	X	16		AAW			
259	**PS**	6/23/2017	TT	5:31 PM	80	SLOPE	0	16	X	16		AAW			
258	**PS**	6/24/2017	TT	8:08 AM	70	SLOPE	0	16	X	16		AAW			
257	**PS**	6/24/2017	TT	8:12 AM	70	SLOPE	0	17	X	17		AAW			
256	**PS**	6/24/2017	TT	8:23 AM	70	SLOPE	0	17	X	17		AAW			
255	**PS**	6/24/2017	TT	9:10 AM	70	SLOPE	0	15	X	15		AAW			
253	**PS**	6/24/2017	TT	9:40 AM	70	SLOPE	0	17	X	17		AAW			
252	**PS**	6/24/2017	TT	10:01 AM	70	SLOPE	0	24	X	24		AAW			
245	**PS**	6/24/2017	TT	10:50 AM	70	SLOPE	0	17	X	17		AAW			
246	**PS**	6/24/2017	TT	11:17 AM	70	SLOPE	0	16	X	16		AAW			
247	**PS**	6/24/2017	TT	11:36 AM	70	SLOPE	0	16	X	16		AAW			
248	**PS**	6/24/2017	TT	1:25 PM	80	SLOPE	0	16	X	16		AAW	68	10	
249	**PS**	6/24/2017	TT	1:30 PM	80	SLOPE	14	16	X	2		AAW			
269	**PS**	6/26/2017	TT	11:21 AM	75	SLOPE	0	7		7		AAW			
282	**PS**	6/26/2017	TT	11:25 AM	75	SLOPE	0	13	X	13		AAW			
214	**286**	6/26/2017	TT	4:00 PM	80	SLOPE	0	4	X	4		AAW			
136	**286**	6/26/2017	TT	4:03 PM	80	SLOPE	0	12	X	12		AAW			
142	**286**	6/26/2017	TT	4:10 PM	80	SLOPE	0	34		34		AAW			

Sub-Appendix C.6

Non-Destructive Testing Results

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/17/2017	1	2	SLOPE	BOS	EOS	x	31	31	9:25 AM	9:30 AM	P			AT	AAW	
5/17/2017	2	3	SLOPE	BOS	EOS	x	32	31	9:40 AM	9:45 AM	P			AT	AAW	
5/17/2017	3	4	SLOPE	BOS	39		31	30	10:07 AM	10:12 AM	P			AT	AAW	
5/17/2017	3	4	SLOPE	39	72		31	30	10:14 AM	10:19 AM	P			AT	AAW	
5/17/2017	3	4	SLOPE	72	EOS	x	32	30	10:21 AM	10:26 AM	P			AT	AAW	
5/17/2017	4	5	SLOPE	BOS	EOS	x	31	29	10:29 AM	10:34 AM	P			AT	AAW	
5/17/2017	5	6	SLOPE	BOS	EOS	x	30	29	10:45 AM	10:50 AM	P			AT	AAW	
5/18/2017	6	7	SLOPE	BOS	EOS	X	30	30	9:54 AM	9:59 AM	P			KS	AAW	
5/18/2017	7	8	SLOPE	BOS	EOS	X	30	30	9:55 AM	10:00 AM	P			KS	AAW	
5/18/2017	8	9	SLOPE	BOS	EOS	X	30	30	9:59 AM	10:04 AM	P			KS	AAW	
5/18/2017	9	10	SLOPE	BOS	EOS	X	30	29	10:07 AM	10:12 AM	P			KS	AAW	
5/18/2017	10	11	SLOPE	BOS	EOS	X	30	30	10:10 AM	10:15 AM	P			KS	AAW	
5/18/2017	11	12	SLOPE	BOS	EOS	X	30	30	10:29 AM	10:34 AM	P			KS	AAW	
5/18/2017	11	13	SLOPE	BOS	EOS	X	30	30	10:14 AM	10:19 AM	P			KS	AAW	
5/18/2017	12	13	SLOPE	BOS	EOS	X	30	29	10:39 AM	10:44 AM	P			KS	AAW	
5/18/2017	12	14	SLOPE	BOS	EOS	X	30	30	10:40 AM	10:45 AM	P			KS	AAW	
5/18/2017	13	14	SLOPE	BOS	EOS	X	30	30	10:22 AM	10:27 AM	P			KS	AAW	
5/18/2017	14	15	SLOPE	BOS	EOS	X	30	30	10:23 AM	10:28 AM	P			KS	AAW	
5/18/2017	15	16	SLOPE	BOS	EOS	X	30	30	11:43 AM	11:48 AM	P			KS	AAW	
5/18/2017	16	17	SLOPE	BOS	EOS	X	30	30	11:44 AM	11:49 AM	P			KS	AAW	
5/18/2017	17	20	SLOPE	BOS	EOS	X	30	30	1:33 PM	1:38 PM	P			KS	AAW	
5/18/2017	20	21	SLOPE	BOS	EOS	X	30	30	1:52 PM	1:57 PM	P			KS	AAW	
5/22/2017	21	22	SLOPE	BOS	59		30	30	2:01 PM	2:06 PM	P			KS	AAW	
5/22/2017	21	22	SLOPE	59	62		-	-	-	-	-	X			AAW	
5/22/2017	21	22	SLOPE	62	EOS	X	30	30	9:53 AM	9:58 AM	P			KS	AAW	
5/22/2017	18	1	SLOPE	BOS	EOS	X	30	29	8:55 AM	9:00 AM	P			KS	AAW	
5/22/2017	18	19	SLOPE	BOS	10		30	30	9:46 AM	9:51 AM	P			KS	AAW	
5/22/2017	18	19	SLOPE	10	EOS	X	-	-	-	-	-	X			AAW	
5/22/2017	1	19	SLOPE	BOS	EOS	X	30	29	9:40 AM	9:45 AM	P			KS	AAW	
5/22/2017	22	23	SLOPE	BOS	EOS	X	30	29	10:01 AM	10:06 AM	P			KS	AAW	
5/22/2017	23	24	SLOPE	BOS	EOS	X	30	30	10:04 AM	10:09 AM	P			KS	AAW	
5/22/2017	24	25	SLOPE	BOS	70		30	30	10:15 AM	10:20 AM	P			KS	AAW	
5/22/2017	24	25	SLOPE	70	EOS	X	30	30	10:13 AM	10:18 AM	P			KS	AAW	
5/22/2017	25	26	SLOPE	BOS	EOS	X	30	30	10:30 AM	10:35 AM	P			KS	AAW	
5/22/2017	25	27	SLOPE	BOS	EOS	X	30	29	10:14 AM	10:19 AM	P			KS	AAW	
5/22/2017	26	27	SLOPE	BOS	EOS	X	30	29	10:27 AM	10:32 AM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/22/2017	27	28	SLOPE	BOS	31		30	30	4:43 PM	4:48 PM	P			KS	AAW	
5/22/2017	27	28	SLOPE	31	35		-	-	-	-	-	X			AAW	
5/22/2017	27	28	SLOPE	35	43		30	30	4:47 PM	4:52 PM	P			KS	AAW	
5/22/2017	27	28	SLOPE	43	EOS	X	30	29	4:55 PM	5:00 PM	P			KS	AAW	
5/22/2017	27	29	SLOPE	BOS	EOS	X	30	30	4:56 PM	5:01 PM	P			KS	AAW	
5/22/2017	28	31	SLOPE	BOS	EOS	X	30	29	4:38 PM	4:43 PM	P			KS	AAW	
5/22/2017	31	32	SLOPE	BOS	EOS	X	30	30	4:30 PM	4:35 PM	P			KS	AAW	
5/22/2017	28	32	SLOPE	BOS	EOS	X	30	30	4:32 PM	4:37 PM	P			KS	AAW	
5/22/2017	29	32	SLOPE	BOS	EOS	X	30	30	4:31 PM	4:36 PM	P			KS	AAW	
5/22/2017	28	29	SLOPE	BOS	26		30	29	4:33 PM	4:38 PM	P			KS	AAW	
5/22/2017	28	29	SLOPE	26	33		30	29	4:48 PM	4:53 PM	P			KS	AAW	
5/22/2017	28	29	SLOPE	33	EOS	X	30	29	4:50 PM	4:55 PM	P			KS	AAW	
5/22/2017	27	31	SLOPE	BOS	EOS	X	30	29	5:04 PM	5:09 PM	P			KS	AAW	
5/22/2017	29	30	SLOPE	BOS	EOS	X	30	30	5:05 PM	5:10 PM	P			KS	AAW	
5/22/2017	30	33	SLOPE	BOS	EOS	X	30	29	5:23 PM	5:28 PM	P			KS	AAW	
5/22/2017	33	34	SLOPE	BOS	EOS	X	30	30	5:31 PM	5:36 PM	P			KS	AAW	
5/22/2017	33	35	SLOPE	BOS	EOS	X	30	29	5:33 PM	5:38 PM	P			KS	AAW	
5/22/2017	34	35	SLOPE	BOS	EOS	X	30	29	5:54 PM	5:59 PM	P			KS	AAW	
5/22/2017	34	36	SLOPE	BOS	EOS	X	30	30	5:53 PM	5:58 PM	P			KS	AAW	
5/22/2017	35	36	SLOPE	BOS	EOS	X	30	30	6:02 PM	6:07 PM	P			KS	AAW	
5/24/2017	36	37	SLOPE	BOS	EOS	X	30	30	9:13 AM	9:18 AM	P			KS	AAW	
5/24/2017	36	38	SLOPE	BOS	EOS	X	30	29	9:10 AM	9:15 AM	P			KS	AAW	
5/24/2017	37	38	SLOPE	BOS	EOS	X	30	29	9:31 AM	9:36 AM	P			KS	AAW	
5/24/2017	37	39	SLOPE	BOS	EOS	X	30	29	9:19 AM	9:24 AM	P			KS	AAW	
5/24/2017	38	39	SLOPE	BOS	40		30	29	9:07 AM	9:12 AM	P			KS	AAW	
5/24/2017	38	39	SLOPE	40	EOS	X	30	29	9:08 AM	9:13 AM	P			KS	AAW	
5/24/2017	39	40	SLOPE	BOS	46		30	29	9:40 AM	9:45 AM	P			KS	AAW	
5/24/2017	39	40	SLOPE	46	EOS	X	30	30	9:41 AM	9:46 AM	P			KS	AAW	
5/24/2017	40	41	SLOPE	BOS	EOS	X	30	30	10:01 AM	10:06 AM	P			KS	AAW	
5/24/2017	41	43	SLOPE	BOS	24		30	29	11:06 AM	11:11 AM	P			KS	AAW	
5/24/2017	41	43	SLOPE	24	EOS	X	-	-	-	-	-	X			AAW	
5/24/2017	41	42	SLOPE	BOS	EOS	X	30	29	10:29 AM	10:34 AM	P			KS	AAW	
5/24/2017	42	43	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
5/24/2017	43	46	SLOPE	BOS	EOS	X	30	29	11:12 AM	11:17 AM	P			KS	AAW	
5/24/2017	42	46	SLOPE	BOS	EOS	X	30	30	11:16 AM	11:21 AM	P			KS	AAW	
5/24/2017	45	46	SLOPE	BOS	EOS	X	30	30	11:25 AM	11:30 AM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/24/2017	42	45	SLOPE	BOS	EOS	X	30	30	10:46 AM	10:51 AM	P			KS	AAW	
5/24/2017	44	45	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
5/24/2017	42	44	SLOPE	BOS	EOS	X	30	30	11:00 AM	11:05 AM	P			KS	AAW	
5/24/2017	45	47	SLOPE	BOS	EOS	X	30	29	11:18 AM	11:23 AM	P			KS	AAW	
5/24/2017	44	47	SLOPE	BOS	9		-	-	-	-	-	X			AAW	
5/24/2017	44	47	SLOPE	9	EOS	X	30	30	11:28 AM	11:33 AM	P			KS	AAW	
5/24/2017	47	48	SLOPE	BOS	EOS	X	30	30	11:39 AM	11:44 AM	P			KS	AAW	
5/24/2017	48	49	SLOPE	BOS	EOS	X	30	30	11:44 AM	11:49 AM	P			KS	AAW	
5/24/2017	48	50	SLOPE	BOS	EOS	X	30	30	1:22 PM	1:27 PM	P			KS	AAW	
5/24/2017	49	50	SLOPE	BOS	EOS	X	30	29	1:15 PM	1:20 PM	P			KS	AAW	
5/24/2017	49	51	SLOPE	BOS	EOS	X	30	30	1:06 PM	1:11 PM	P			KS	AAW	
5/24/2017	50	51	SLOPE	BOS	EOS	X	30	29	1:08 PM	1:13 PM	P			KS	AAW	
5/25/2017	52	53	SLOPE	BOS	EOS	X	30	30	10:11 AM	10:16 AM	P			KS	AAW	
5/25/2017	53	54	SLOPE	BOS	54		30	29	10:12 AM	10:17 AM	P			KS	AAW	
5/25/2017	53	54	SLOPE	54	EOS	X	30	30	10:13 AM	10:18 AM	P			KS	AAW	
5/25/2017	54	55	SLOPE	BOS	EOS	X	30	29	10:24 AM	10:29 AM	P			KS	AAW	
5/25/2017	55	56	SLOPE	BOS	EOS	X	30	29	10:25 AM	10:30 AM	P			KS	AAW	
5/25/2017	56	57	SLOPE	BOS	EOS	X	30	30	10:27 AM	10:32 AM	P			KS	AAW	
5/25/2017	56	58	SLOPE	BOS	EOS	X	30	30	10:26 AM	10:31 AM	P			KS	AAW	
5/25/2017	57	58	SLOPE	BOS	EOS	X	30	29	10:36 AM	10:41 AM	P			KS	AAW	
5/25/2017	57	59	SLOPE	BOS	EOS	X	30	29	10:35 AM	10:40 AM	P			KS	AAW	
5/25/2017	58	59	SLOPE	BOS	EOS	X	30	30	10:46 AM	10:51 AM	P			KS	AAW	
5/25/2017	59	60	SLOPE	BOS	EOS	X	30	30	10:49 AM	10:54 AM	P			KS	AAW	
5/25/2017	60	61	SLOPE	BOS	EOS	X	30	30	10:50 AM	10:55 AM	P			KS	AAW	
5/25/2017	61	62	SLOPE	BOS	EOS	X	30	29	10:51 AM	10:56 AM	P			KS	AAW	
5/25/2017	62	65	SLOPE	BOS	EOS	X	30	30	11:24 AM	11:29 AM	P			KS	AAW	
5/25/2017	62	63	SLOPE	BOS	EOS	X	30	29	11:07 AM	11:12 AM	P			KS	AAW	
5/25/2017	63	65	SLOPE	BOS	EOS	X	30	30	11:25 AM	11:30 AM	P			KS	AAW	
5/25/2017	63	64	SLOPE	BOS	EOS	X	30	30	11:18 AM	11:23 AM	P			KS	AAW	
5/25/2017	64	66	SLOPE	BOS	EOS	X	30	30	11:12 AM	11:17 AM	P			KS	AAW	
5/25/2017	66	67	SLOPE	BOS	120		30	30	11:13 AM	11:18 AM	P			KS	AAW	
5/25/2017	43	63	SLOPE	BOS	EOS	X	30	29	11:27 AM	11:32 AM	P			KS	AAW	
5/25/2017	43	65	SLOPE	BOS	EOS	X	30	30	11:29 AM	11:34 AM	P			KS	AAW	
5/25/2017	46	65	SLOPE	BOS	EOS	X	30	29	12:46 PM	12:51 PM	P			KS	AAW	
5/25/2017	46	62	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
5/25/2017	46	61	SLOPE	BOS	EOS	X	30	29	12:48 PM	12:53 PM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/25/2017	45	61	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
5/25/2017	45	60	SLOPE	BOS	EOS	X	30	30	12:50 PM	12:55 PM	P			KS	AAW	
5/25/2017	47	60	SLOPE	BOS	EOS	X	30	29	1:00 PM	1:05 PM	P			KS	AAW	
5/25/2017	47	59	SLOPE	BOS	EOS	X	30	29	1:01 PM	1:06 PM	P			KS	AAW	
5/25/2017	47	58	SLOPE	BOS	EOS	X	30	30	1:03 PM	1:08 PM	P			KS	AAW	
5/25/2017	48	58	SLOPE	BOS	EOS	X	30	30	1:13 PM	1:18 PM	P			KS	AAW	
5/25/2017	48	56	SLOPE	BOS	EOS	X	30	29	1:14 PM	1:19 PM	P			KS	AAW	
5/25/2017	48	55	SLOPE	BOS	EOS	X	30	29	1:15 PM	1:20 PM	P			KS	AAW	
5/25/2017	49	55	SLOPE	BOS	EOS	X	30	30	1:23 PM	1:28 PM	P			KS	AAW	
5/25/2017	49	54	SLOPE	BOS	EOS	X	30	29	1:25 PM	1:30 PM	P			KS	AAW	
5/25/2017	51	54	SLOPE	BOS	EOS	X	30	30	1:26 PM	1:31 PM	P			KS	AAW	
5/25/2017	51	53	SLOPE	BOS	EOS	X	30	30	1:30 PM	1:35 PM	P			KS	AAW	
5/25/2017	51	52	SLOPE	BOS	9		30	29	1:37 PM	1:42 PM	P			KS	AAW	
5/25/2017	51	52	SLOPE	9	EOS	X	-	-	-	-	-	X			AAW	
5/25/2017	41	63	SLOPE	BOS	EOS	X	30	29	4:23 PM	4:28 PM	P			KS	AAW	
5/26/2017	71	73	SLOPE	34	36		-	-	-	-	-	X			AAW	
5/26/2017	71	73	SLOPE	36	EOS	X	30	30	5:23 PM	5:28 PM	P			KS	AAW	
5/26/2017	73	74	SLOPE	BOS	33		30	30	5:56 PM	6:01 PM	P			KS	AAW	
5/26/2017	73	74	SLOPE	33	EOS	X	30	29	5:12 PM	5:17 PM	P			KS	AAW	
5/26/2017	73	72	SLOPE	BOS	EOS	X	30	29	5:14 PM	5:19 PM	P			KS	AAW	
5/26/2017	73	75	SLOPE	BOS	EOS	X	30	30	5:21 PM	5:26 PM	P			KS	AAW	
5/26/2017	74	75	SLOPE	BOS	EOS	X	30	29	5:35 PM	5:40 PM	P			KS	AAW	
5/26/2017	74	76	SLOPE	BOS	EOS	X	30	30	5:55 PM	6:00 PM	P			KS	AAW	
5/26/2017	75	76	SLOPE	BOS	EOS	X	30	29	5:45 PM	5:50 PM	P			KS	AAW	
5/26/2017	76	77	SLOPE	BOS	EOS	X	30	30	5:49 PM	5:54 PM	P			KS	AAW	
5/26/2017	77	78	SLOPE	BOS	EOS	X	30	30	10:12 AM	10:17 AM	P			KS	AAW	
5/26/2017	78	79	SLOPE	BOS	EOS	X	30	29	10:20 AM	10:25 AM	P			KS	AAW	
5/26/2017	79	80	SLOPE	BOS	EOS	X	30	29	10:21 AM	10:26 AM	P			KS	AAW	
5/27/2017	5	WT	SLOPE	BOS	2		-	-	-	-	-	X			AAW	
5/27/2017	5	WT	SLOPE	2	EOS	X	30	30	9:46 AM	9:51 AM	P			KS	AAW	
5/27/2017	4	WT	SLOPE	BOS	2		-	-	-	-	-	X			AAW	
5/27/2017	4	WT	SLOPE	2	EOS	X	30	30	9:47 AM	9:52 AM	P			KS	AAW	
5/27/2017	3	WT	SLOPE	BOS	1		-	-	-	-	-	X			AAW	
5/27/2017	3	WT	SLOPE	1	13		30	29	9:48 AM	9:53 AM	P			KS	AAW	
5/27/2017	3	WT	SLOPE	13	EOS	X	-	-	-	-	-	X			AAW	
5/27/2017	2	WT	SLOPE	BOS	13		30	30	9:49 AM	9:54 AM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/27/2017	2	WT	SLOPE	13	EOS	X	-	-	-	-	-	X			AAW	
5/27/2017	1	WT	SLOPE	BOS	1		-	-	-	-	-	X			AAW	
5/27/2017	1	WT	SLOPE	1	5		30	29	9:50 AM	9:55 AM	P			KS	AAW	
5/27/2017	1	WT	SLOPE	5	EOS	X	30	30	9:58 AM	10:03 AM	P			KS	AAW	
5/27/2017	18	WT	SLOPE	BOS	5		30	30	9:59 AM	10:04 AM	P			KS	AAW	
5/27/2017	18	WT	SLOPE	5	EOS	X	-	-	-	-	-	X			AAW	
5/27/2017	14	WT	SLOPE	BOS	5		-	-	-	-	-	X			AAW	
5/27/2017	14	WT	SLOPE	5	16		30	29	11:02 AM	11:07 AM	P			KS	AAW	
5/27/2017	12	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	12	WT	SLOPE	4	EOS	X	30	30	10:56 AM	11:01 AM	P			KS	AAW	
5/27/2017	11	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	11	WT	SLOPE	4	EOS	X	30	29	10:53 AM	10:58 AM	P			KS	AAW	
5/27/2017	10	WT	SLOPE	BOS	5		30	30	10:52 AM	10:57 AM	P			KS	AAW	
5/27/2017	10	WT	SLOPE	5	EOS	X	30	30	10:24 AM	10:29 AM	P			KS	AAW	
5/27/2017	9	WT	SLOPE	BOS	6		30	29	10:23 AM	10:28 AM	P			KS	AAW	
5/27/2017	9	WT	SLOPE	6	EOS	X	30	30	10:21 AM	10:26 AM	P			KS	AAW	
5/27/2017	8	WT	SLOPE	BOS	6		30	29	10:20 AM	10:25 AM	P			KS	AAW	
5/27/2017	8	WT	SLOPE	6	EOS	X	30	30	10:15 AM	10:20 AM	P			KS	AAW	
5/27/2017	7	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	7	WT	SLOPE	4	EOS	X	30	30	10:14 AM	10:19 AM	P			KS	AAW	
5/27/2017	6	WT	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
5/27/2017	15	WT	SLOPE	BOS	5		-	-	-	-	-	X			AAW	
5/27/2017	15	WT	SLOPE	5	EOS	X	30	30	11:13 AM	11:18 AM	P			KS	AAW	
5/27/2017	16	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	16	WT	SLOPE	4	EOS	X	30	30	11:16 AM	11:21 AM	P			KS	AAW	
5/27/2017	17	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	17	WT	SLOPE	4	EOS	X	30	30	11:19 AM	11:24 AM	P			KS	AAW	
5/27/2017	20	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	20	WT	SLOPE	4	EOS	X	30	30	11:22 AM	11:27 AM	P			KS	AAW	
5/27/2017	21	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	21	WT	SLOPE	4	EOS	X	30	30	11:28 AM	11:33 AM	P			KS	AAW	
5/27/2017	22	WT	SLOPE	BOS	6		-	-	-	-	-	X			AAW	
5/27/2017	22	WT	SLOPE	6	EOS	X	30	30	11:37 AM	11:42 AM	P			KS	AAW	
5/27/2017	23	WT	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/27/2017	23	WT	SLOPE	4	EOS	X	30	30	11:38 AM	11:43 AM	P			KS	AAW	
5/27/2017	24	WT	SLOPE	BOS	3		-	-	-	-	-	X			AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/27/2017	**24**	**WT**	SLOPE	3	EOS	X	30	30	11:39 AM	11:44 AM	P			KS	AAW	
5/27/2017	**25**	**WT**	SLOPE	BOS	5		-	-	-	-	-	X			AAW	
5/27/2017	**25**	**WT**	SLOPE	5	EOS	X	30	29	11:40 AM	11:45 AM	P			KS	AAW	
5/30/2017	**30**	**WT**	SLOPE	BOS	8		30	30	10:23 AM	10:28 AM	P			KS	AAW	
5/30/2017	**33**	**WT**	SLOPE	BOS	EOS	X	30	29	10:24 AM	10:29 AM	P			KS	AAW	
5/30/2017	**35**	**WT**	SLOPE	BOS	EOS	X	30	30	10:29 AM	10:34 AM	P			KS	AAW	
5/30/2017	**36**	**WT**	SLOPE	BOS	EOS	X	30	29	10:30 AM	10:35 AM	P			KS	AAW	
5/30/2017	**37**	**WT**	SLOPE	BOS	2		-	-	-	-	-	X			AAW	
5/30/2017	**37**	**WT**	SLOPE	2	14		30	30	10:35 AM	10:40 AM	P			KS	AAW	
5/30/2017	**37**	**WT**	SLOPE	14	EOS	X	-	-	-	-	-	X			AAW	
5/30/2017	**39**	**WT**	SLOPE	BOS	EOS	X	30	29	10:36 AM	10:41 AM	P			KS	AAW	
5/30/2017	**40**	**WT**	SLOPE	BOS	4		-	-	-	-	-	X			AAW	
5/30/2017	**40**	**WT**	SLOPE	4	EOS	X	30	29	10:40 AM	10:45 AM	P			KS	AAW	
5/30/2017	**41**	**WT**	SLOPE	BOS	2		-	-	-	-	-	X			AAW	
5/30/2017	**41**	**WT**	SLOPE	2	EOS	X	30	29	10:43 AM	10:48 AM	P			KS	AAW	
5/30/2017	**42**	**WT**	SLOPE	BOS	2		-	-	-	-	-	X			AAW	
5/30/2017	**42**	**WT**	SLOPE	2	EOS	X	30	30	10:47 AM	10:52 AM	P			KS	AAW	
5/30/2017	**44**	**WT**	SLOPE	BOS	2		-	-	-	-	-	X			AAW	
5/30/2017	**44**	**WT**	SLOPE	2	EOS	X	30	30	10:48 AM	10:53 AM	P			KS	AAW	
5/30/2017	**47**	**WT**	SLOPE	BOS	3		-	-	-	-	-	X			AAW	
5/30/2017	**47**	**WT**	SLOPE	3	EOS	X	30	29	10:52 AM	10:57 AM	P			KS	AAW	
5/30/2017	**48**	**WT**	SLOPE	BOS	13		-	-	-	-	-	X			AAW	
5/30/2017	**48**	**WT**	SLOPE	13	EOS	X	30	30	11:00 AM	11:05 AM	P			KS	AAW	
5/30/2017	**50**	**WT**	SLOPE	BOS	EOS	X	30	29	11:01 AM	11:06 AM	P			KS	AAW	
5/30/2017	**51**	**WT**	SLOPE	BOS	EOS	X	30	29	11:17 AM	11:22 AM	P			KS	AAW	
5/30/2017	**52**	**WT**	SLOPE	BOS	EOS	X	30	30	11:18 AM	11:23 AM	P			KS	AAW	
5/30/2017	**53**	**WT**	SLOPE	BOS	11		30	29	11:22 AM	11:27 AM	P			KS	AAW	
5/30/2017	**53**	**WT**	SLOPE	11	EOS	X	30	29	11:19 AM	11:24 AM	P			KS	AAW	
5/30/2017	**54**	**WT**	SLOPE	BOS	EOS	X	30	29	11:23 AM	11:28 AM	P			KS	AAW	
5/30/2017	**54**	**PS**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	AAW	
5/30/2017	**55**	**PS**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	AAW	
5/30/2017	**56**	**PS**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	AAW	
5/30/2017	**57**	**PS**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	AAW	
5/30/2017	**59**	**PS**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	AAW	
5/30/2017	**60**	**PS**	SLOPE	BOS	EOS	X	30	30	2:05 PM	2:10 PM	P			KS	AAW	
5/30/2017	**61**	**PS**	SLOPE	BOS	EOS	X	30	30	2:05 PM	2:10 PM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/30/2017	**62**	**PS**	SLOPE	BOS	EOS	X	30	30	2:05 PM	2:10 PM	P			KS	AAW	
5/30/2017	**63**	**PS**	SLOPE	BOS	EOS	X	30	29	1:56 PM	2:01 PM	P			KS	AAW	
5/30/2017	**64**	**PS**	SLOPE	BOS	EOS	X	30	29	1:57 PM	2:02 PM	P			KS	AAW	
5/30/2017	**66**	**PS**	SLOPE	BOS	EOS	X	30	29	1:57 PM	2:02 PM	P			KS	AAW	
5/30/2017	**67**	**PS**	SLOPE	BOS	EOS	X	30	29	1:57 PM	2:02 PM	P			KS	AAW	
5/30/2017	**71**	**PS**	SLOPE	BOS	11		30	29	1:37 PM	1:42 PM	P			KS	AAW	
5/30/2017	**71**	**PS**	SLOPE	11	EOS	X	-	-	-	-	-	X			AAW	
5/30/2017	**73**	**PS**	SLOPE	BOS	EOS	X	30	30	1:33 PM	1:38 PM	P			KS	AAW	
5/30/2017	**74**	**PS**	SLOPE	BOS	EOS	X	30	30	1:33 PM	1:38 PM	P			KS	AAW	
5/30/2017	**76**	**PS**	SLOPE	BOS	EOS	X	30	30	1:33 PM	1:38 PM	P			KS	AAW	
5/30/2017	**77**	**PS**	SLOPE	BOS	EOS	X	30	29	1:27 PM	1:32 PM	P			KS	AAW	
5/30/2017	**78**	**PS**	SLOPE	BOS	EOS	X	30	29	1:27 PM	1:32 PM	P			KS	AAW	
5/30/2017	**79**	**PS**	SLOPE	BOS	EOS	X	30	29	1:27 PM	1:32 PM	P			KS	AAW	
5/30/2017	**80**	**PS**	SLOPE	BOS	EOS	X	30	29	1:27 PM	1:32 PM	P			KS	AAW	
5/30/2017	**26**	**WT**	SLOPE	BOS	EOS	x	-	-	-	-	-		P	WE	AAW	
5/31/2017	**81**	**82**	SLOPE	BOS	7		30	30	11:51 AM	11:56 AM	P			KS	AAW	
5/31/2017	**81**	**82**	SLOPE	7	EOS	X	30	29	11:53 AM	11:58 AM	P			KS	AAW	
5/31/2017	**82**	**83**	SLOPE	BOS	28		30	29	11:39 AM	11:44 AM	P			KS	AAW	
5/31/2017	**82**	**83**	SLOPE	28	EOS	X	30	29	11:47 AM	11:52 AM	P			KS	AAW	
5/31/2017	**83**	**84**	SLOPE	BOS	EOS	X	30	29	11:31 AM	11:36 AM	P			KS	AAW	
5/31/2017	**84**	**85**	SLOPE	BOS	EOS	X	30	29	11:30 AM	11:35 AM	P			KS	AAW	
5/31/2017	**85**	**86**	SLOPE	BOS	3		-	-	-	-	-	X			AAW	
5/31/2017	**85**	**86**	SLOPE	3	16		30	30	1:03 PM	1:08 PM	P			KS	AAW	
5/31/2017	**85**	**86**	SLOPE	16	21		-	-	-	-	-	X			AAW	
5/31/2017	**85**	**86**	SLOPE	21	41		30	29	1:02 PM	1:07 PM	P			KS	AAW	
5/31/2017	**85**	**86**	SLOPE	41	56		30	30	1:01 PM	1:06 PM	P			KS	AAW	
5/31/2017	**85**	**86**	SLOPE	56	EOS	X	30	30	1:09 PM	1:14 PM	P			KS	AAW	
5/31/2017	**86**	**87**	SLOPE	BOS	25		30	29	1:18 PM	1:23 PM	P			KS	AAW	
5/31/2017	**86**	**87**	SLOPE	75	EOS	X	-	-	-	-	-	X			AAW	
5/31/2017	**87**	**88**	SLOPE	BOS	58		30	30	1:25 PM	1:30 PM	P			KS	AAW	
5/31/2017	**87**	**88**	SLOPE	58	77		30	30	1:27 PM	1:32 PM	P			KS	AAW	
5/31/2017	**87**	**88**	SLOPE	77	EOS	X	30	30	1:30 PM	1:35 PM	P			KS	AAW	
5/31/2017	**88**	**89**	SLOPE	BOS	EOS	X	30	30	1:44 PM	1:49 PM	P			KS	AAW	
5/31/2017	**89**	**90**	SLOPE	BOS	EOS	X	30	30	2:09 PM	2:14 PM	P			KS	AAW	
5/31/2017	**90**	**91**	SLOPE	BOS	EOS	X	30	30	2:28 PM	2:33 PM	P			KS	AAW	
5/31/2017	**91**	**92**	SLOPE	BOS	EOS	X	30	29	3:01 PM	3:06 PM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
5/31/2017	**92**	**93**	SLOPE	BOS	EOS	X	30	30	3:12 PM	3:17 PM	P			KS	AAW	
5/31/2017	**92**	**94**	SLOPE	BOS	EOS	X	30	30	3:25 PM	3:30 PM	P			KS	AAW	
5/31/2017	**91**	**93**	SLOPE	BOS	EOS	X	30	30	3:11 PM	3:16 PM	P			KS	AAW	
5/31/2017	**93**	**94**	SLOPE	BOS	EOS	X	30	30	3:32 PM	3:37 PM	P			KS	AAW	
5/31/2017	**94**	**95**	SLOPE	BOS	EOS	X	30	30	4:09 PM	4:14 PM	P			KS	AAW	
5/31/2017	**95**	**96**	SLOPE	BOS	160		30	30	4:36 PM	4:41 PM	P			KS	AAW	
5/31/2017	**95**	**96**	SLOPE	160	EOS	X	30	30	4:50 PM	4:55 PM	P			KS	AAW	
6/1/2017	**36**	**96**	SLOPE	BOS	EOS	X	30	29	7:50 AM	7:55 AM	P			KS	BJD	
6/1/2017	**36**	**95**	SLOPE	BOS	EOS	X	30	30	7:51 AM	7:56 AM	P			KS	BJD	
6/1/2017	**38**	**95**	SLOPE	BOS	EOS	X	30	30	7:52 AM	7:57 AM	P			KS	BJD	
6/1/2017	**38**	**94**	SLOPE	BOS	EOS	X	30	30	7:58 AM	8:03 AM	P			KS	BJD	
6/1/2017	**70**	**94**	SLOPE	BOS	12		30	30	8:06 AM	8:11 AM	P			KS	BJD	
6/1/2017	**70**	**94**	SLOPE	12	15		-	-	-	-	-	X			BJD	
6/1/2017	**70**	**94**	SLOPE	15	EOS	X	30	29	8:07 AM	8:12 AM	P			KS	BJD	
6/1/2017	**72**	**94**	SLOPE	BOS	EOS	X	30	29	8:17 AM	8:22 AM	P			KS	BJD	
6/1/2017	**72**	**93**	SLOPE	BOS	EOS	X	30	30	8:18 AM	8:23 AM	P			KS	BJD	
6/1/2017	**73**	**93**	SLOPE	BOS	EOS	X	30	30	8:26 AM	8:31 AM	P			KS	BJD	
6/1/2017	**73**	**91**	SLOPE	BOS	EOS	X	30	29	8:31 AM	8:36 AM	P			KS	BJD	
6/1/2017	**75**	**90**	SLOPE	BOS	EOS	X	30	30	8:36 AM	8:41 AM	P			KS	BJD	
6/1/2017	**75**	**89**	SLOPE	BOS	EOS	X	30	30	8:39 AM	8:44 AM	P			KS	BJD	
6/1/2017	**76**	**89**	SLOPE	BOS	EOS	X	30	30	8:53 AM	8:58 AM	P			KS	BJD	
6/1/2017	**77**	**87**	SLOPE	BOS	EOS	X	30	29	8:57 AM	9:02 AM	P			KS	BJD	
6/1/2017	**78**	**86**	SLOPE	BOS	EOS	X	30	30	9:10 AM	9:15 AM	P			KS	BJD	
6/1/2017	**78**	**85**	SLOPE	BOS	EOS	X	30	30	9:11 AM	9:16 AM	P			KS	BJD	
6/1/2017	**78**	**84**	SLOPE	BOS	EOS	X	30	30	9:17 AM	9:22 AM	P			KS	BJD	
6/1/2017	**79**	**84**	SLOPE	BOS	EOS	X	30	29	9:20 AM	9:25 AM	P			KS	BJD	
6/1/2017	**79**	**83**	SLOPE	BOS	EOS	X	30	30	9:24 AM	9:29 AM	P			KS	BJD	
6/1/2017	**80**	**83**	SLOPE	BOS	EOS	X	30	30	9:29 AM	9:34 AM	P			KS	BJD	
6/1/2017	**80**	**82**	SLOPE	BOS	EOS	X	30	30	9:36 AM	9:41 AM	P			KS	BJD	
6/1/2017	**76**	**88**	SLOPE	BOS	EOS	X	30	30	8:54 AM	8:59 AM	P			KS	BJD	
6/1/2017	**77**	**86**	SLOPE	BOS	EOS	X	30	29	8:58 AM	9:03 AM	P			KS	BJD	
6/1/2017	**96**	**97**	SLOPE	11	162		30	30	1:40 PM	1:45 PM	P			KS	BJD	
6/1/2017	**96**	**97**	SLOPE	BOS	9		30	30	2:01 PM	2:06 PM	P			KS	BJD	
6/1/2017	**98**	**99**	SLOPE	BOS	EOS	X	30	29	1:54 PM	1:59 PM	P			KS	BJD	
6/1/2017	**97**	**98**	SLOPE	BOS	6		30	30	2:02 PM	2:07 PM	P			KS	BJD	
6/1/2017	**97**	**98**	SLOPE	7	EOS	X	30	30	1:55 PM	2:00 PM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/1/2017	**97**	**99**	SLOPE	BOS	22		30	30	1:45 PM	1:50 PM	P			KS	BJD	
6/1/2017	**97**	**99**	SLOPE	24	EOS	X	30	30	1:41 PM	1:46 PM	P			KS	BJD	
6/1/2017	**99**	**100**	SLOPE	BOS	EOS	X	30	30	4:17 PM	4:22 PM	P			KS	BJD	
6/1/2017	**98**	**100**	SLOPE	BOS	EOS	X	30	30	4:21 PM	4:26 PM	P			KS	BJD	
6/1/2017	**100**	**101**	SLOPE	BOS	EOS	X	30	30	4:20 PM	4:25 PM	P			KS	BJD	
6/1/2017	**101**	**102**	SLOPE	BOS	15		30	29	4:26 PM	4:31 PM	P			KS	BJD	
6/1/2017	**101**	**102**	SLOPE	27	EOS	X	30	28	4:45 PM	4:50 PM	P			KS	BJD	
6/1/2017	**101**	**104**	SLOPE	BOS	113		30	30	4:35 PM	4:40 PM	P			KS	BJD	
6/1/2017	**101**	**104**	SLOPE	115	EOS	X	30	30	4:54 PM	4:59 PM	P			KS	BJD	
6/1/2017	**104**	**105**	SLOPE	BOS	92		30	30	4:33 PM	4:38 PM	P			KS	BJD	
6/1/2017	**104**	**105**	SLOPE	94	EOS	x	30	30	4:33 PM	4:38 PM	P			KS	BJD	
6/1/2017	**102**	**104**	SLOPE	BOS	EOS	X	30	29	4:40 PM	4:45 PM	P			KS	BJD	
6/1/2017	**103**	**105**	SLOPE	BOS	EOS	X	30	30	5:06 PM	5:11 PM	P			KS	BJD	
6/1/2017	**102**	**103**	SLOPE	BOS	33		30	29	4:36 PM	4:41 PM	P			KS	BJD	
6/1/2017	**102**	**103**	SLOPE	35	EOS	X	30	30	4:45 PM	4:50 PM	P			KS	BJD	
6/2/2017	**106**	**108**	SLOPE	BOS	EOS	X	30	28	7:58 AM	8:03 AM	P			KS	BJD	
6/2/2017	**103**	**106**	SLOPE	BOS	EOS	X	30	30	8:12 AM	8:17 AM	P			KS	BJD	
6/2/2017	**105**	**106**	SLOPE	BOS	EOS	X	30	29	8:09 AM	8:14 AM	P			KS	BJD	
6/2/2017	**105**	**108**	SLOPE	BOS	EOS	X	30	30	7:50 AM	7:55 AM	P			KS	BJD	
6/2/2017	**108**	**109**	SLOPE	BOS	EOS	X	30	30	7:46 AM	7:51 AM	P			KS	BJD	
6/2/2017	**107**	**109**	SLOPE	BOS	EOS	X	30	30	7:47 AM	7:52 AM	P			KS	BJD	
6/2/2017	**106**	**107**	SLOPE	BOS	EOS	X	30	28	7:55 AM	8:00 AM	P			KS	BJD	
6/2/2017	**23**	**107**	SLOPE	BOS	EOS	X	30	29	8:27 AM	8:32 AM	P			KS	BJD	
6/2/2017	**24**	**106**	SLOPE	BOS	EOS	X	30	29	8:26 AM	8:31 AM	P			KS	BJD	
6/2/2017	**27**	**103**	SLOPE	BOS	EOS	X	30	29	8:38 AM	8:43 AM	P			KS	BJD	
6/2/2017	**31**	**102**	SLOPE	BOS	EOS	X	30	30	8:44 AM	8:49 AM	P			KS	BJD	
6/2/2017	**32**	**101**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/2/2017	**29**	**101**	SLOPE	BOS	EOS	X	30	28	8:53 AM	8:58 AM	P			KS	BJD	
6/2/2017	**29**	**100**	SLOPE	BOS	EOS	X	30	30	9:00 AM	9:05 AM	P			KS	BJD	
6/2/2017	**30**	**100**	SLOPE	BOS	EOS	X	30	30	9:01 AM	9:06 AM	P			KS	BJD	
6/2/2017	**30**	**99**	SLOPE	BOS	EOS	X	30	30	9:21 AM	9:26 AM	P			KS	BJD	
6/2/2017	**33**	**99**	SLOPE	BOS	EOS	X	30	28	9:22 AM	9:27 AM	P			KS	BJD	
6/2/2017	**33**	**97**	SLOPE	BOS	EOS	X	30	28	9:23 AM	9:28 AM	P			KS	BJD	
6/2/2017	**34**	**97**	SLOPE	BOS	EOS	X	30	30	9:24 AM	9:29 AM	P			KS	BJD	
6/2/2017	**34**	**96**	SLOPE	BOS	EOS	X	30	29	9:25 AM	9:30 AM	P			KS	BJD	
6/2/2017	**82**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	CC	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/2/2017	**81**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	CC	BJD	
6/5/2017	**110**	**111**	SLOPE	BOS	27		30	30	8:51 AM	8:56 AM	P			KS	BJD	
6/5/2017	**110**	**111**	SLOPE	28	60		30	30	8:54 AM	8:59 AM	P			KS	BJD	
6/5/2017	**110**	**111**	SLOPE	62	72		30	29	9:08 AM	9:13 AM	P			KS	BJD	
6/5/2017	**110**	**111**	SLOPE	73	EOS	X	30	30	9:17 AM	9:22 AM	P			KS	BJD	
6/5/2017	**111**	**112**	SLOPE	BOS	EOS	X	30	28	8:56 AM	9:01 AM	P			KS	BJD	
6/5/2017	**112**	**113**	SLOPE	BOS	EOS	X	30	30	8:58 AM	9:03 AM	P			KS	BJD	
6/5/2017	**113**	**114**	SLOPE	BOS	EOS	X	30	30	9:00 AM	9:05 AM	P			KS	BJD	
6/5/2017	**114**	**115**	SLOPE	BOS	EOS	X	30	28	9:56 AM	10:01 AM	P			KS	BJD	
6/5/2017	**115**	**116**	SLOPE	BOS	EOS	X	30	30	9:57 AM	10:02 AM	P			KS	BJD	
6/5/2017	**116**	**118**	SLOPE	BOS	EOS	X	30	30	9:31 AM	9:36 AM	P			KS	BJD	
6/5/2017	**117**	**118**	SLOPE	BOS	EOS	X	30	29	9:40 AM	9:45 AM	P			KS	BJD	
6/5/2017	**118**	**119**	SLOPE	BOS	EOS	X	30	30	9:46 AM	9:51 AM	P			KS	BJD	
6/5/2017	**116**	**117**	SLOPE	BOS	EOS	X	30	30	9:58 AM	10:03 AM	P			KS	BJD	
6/5/2017	**117**	**119**	SLOPE	BOS	EOS	X	30	29	9:59 AM	10:04 AM	P			KS	BJD	
6/5/2017	**119**	**120**	SLOPE	BOS	EOS	X	30	30	10:00 AM	10:05 AM	P			KS	BJD	
6/5/2017	**120**	**121**	SLOPE	2	61		30	30	10:32 AM	10:37 AM	P			KS	BJD	
6/5/2017	**120**	**121**	SLOPE	61	EOS	X	30	30	10:12 AM	10:17 AM	P			KS	BJD	
6/5/2017	**121**	**122**	SLOPE	BOS	EOS	X	30	28	10:33 AM	10:38 AM	P			KS	BJD	
6/5/2017	**124**	**125**	SLOPE	BOS	16		30	30	10:25 AM	10:30 AM	P			KS	BJD	
6/5/2017	**124**	**125**	SLOPE	19	EOS	X	30	28	10:36 AM	10:41 AM	P			KS	BJD	
6/5/2017	**125**	**126**	SLOPE	BOS	EOS	X	30	30	10:57 AM	11:02 AM	P			KS	BJD	
6/5/2017	**126**	**127**	SLOPE	BOS	EOS	X	30	30	10:59 AM	11:04 AM	P			KS	BJD	
6/5/2017	**127**	**129**	SLOPE	BOS	EOS	X	30	30	11:01 AM	11:06 AM	P			KS	BJD	
6/5/2017	**129**	**130**	SLOPE	BOS	15		30	28	11:05 AM	11:10 AM	P			KS	BJD	
6/5/2017	**129**	**130**	SLOPE	16	EOS	X	30	29	11:11 AM	11:16 AM	P			KS	BJD	
6/5/2017	**130**	**131**	SLOPE	BOS	38		30	30	11:14 AM	11:19 AM	P			KS	BJD	
6/5/2017	**130**	**131**	SLOPE	39	EOS	X	30	30	11:19 AM	11:24 AM	P			KS	BJD	
6/5/2017	**131**	**132**	SLOPE	BOS	EOS	X	30	30	11:23 AM	11:28 AM	P			KS	BJD	
6/5/2017	**132**	**133**	SLOPE	BOS	EOS	X	30	30	11:25 AM	11:30 AM	P			KS	BJD	
6/5/2017	**133**	**134**	SLOPE	BOS	EOS	X	30	30	11:31 AM	11:36 AM	P			KS	BJD	
6/5/2017	**132**	**134**	SLOPE	BOS	EOS	X	30	30	11:29 AM	11:34 AM	P			KS	BJD	
6/5/2017	**134**	**135**	SLOPE	BOS	EOS	X	30	30	11:36 AM	11:41 AM	P			KS	BJD	
6/5/2017	**110**	**137**	SLOPE	BOS	24		30	28	3:19 PM	3:24 PM	P			KS	BJD	
6/5/2017	**110**	**137**	SLOPE	25	38		30	28	3:12 PM	3:17 PM	P			KS	BJD	
6/5/2017	**110**	**137**	SLOPE	54	78		30	29	2:56 PM	3:01 PM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/5/2017	**110**	**137**	SLOPE	79	EOS	X	30	30	2:36 PM	2:41 PM	P			KS	BJD	
6/5/2017	**137**	**138**	SLOPE	BOS	EOS	X	30	30	3:22 PM	3:24 PM	P			KS	BJD	
6/5/2017	**136**	**137**	SLOPE	BOS	EOS	X	30	30	3:23 PM	3:28 PM	P			KS	BJD	
6/5/2017	**138**	**139**	SLOPE	BOS	16		30	30	2:47 PM	2:52 PM	P			KS	BJD	
6/5/2017	**138**	**139**	SLOPE	20	38		30	30	2:41 PM	2:46 PM	P			KS	BJD	
6/5/2017	**138**	**139**	SLOPE	39	EOS	X	30	30	2:38 PM	2:43 PM	P			KS	BJD	
6/5/2017	**139**	**140**	SLOPE	BOS	EOS	X	30	30	3:34 PM	3:39 PM	P			KS	BJD	
6/5/2017	**140**	**141**	SLOPE	BOS	EOS	X	30	30	3:35 PM	3:40 PM	P			KS	BJD	
6/5/2017	**141**	**142**	SLOPE	BOS	EOS	X	30	29	3:36 PM	3:41 PM	P			KS	BJD	
6/5/2017	**136**	**142**	SLOPE	10	EOS	X	30	30	3:50 PM	3:55 PM	P			KS	BJD	
6/5/2017	**136**	**141**	SLOPE	BOS	EOS	X	30	28	3:46 PM	3:51 PM	P			KS	BJD	
6/5/2017	**136**	**140**	SLOPE	BOS	EOS	X	30	29	3:45 PM	3:50 PM	P			KS	BJD	
6/5/2017	**136**	**139**	SLOPE	BOS	EOS	X	30	30	3:44 PM	3:49 PM	P			KS	BJD	
6/5/2017	**136**	**138**	SLOPE	BOS	EOS	X	30	30	3:26 PM	3:31 PM	P			KS	BJD	
6/6/2017	**107**	**143**	SLOPE	BOS	EOS	X	30	30	1:43 PM	1:48 PM	P			KS	BJD	
6/6/2017	**109**	**143**	SLOPE	BOS	52		30	30	1:44 PM	1:49 PM	P			KS	BJD	
6/6/2017	**109**	**143**	SLOPE	52	102		30	28	1:51 PM	1:56 PM	P			KS	BJD	
6/6/2017	**109**	**143**	SLOPE	102	EOS	X	30	28	1:52 PM	1:57 PM	P			KS	BJD	
6/6/2017	**143**	**144**	SLOPE	BOS	113		30	30	2:11 PM	2:16 PM	P			KS	BJD	
6/6/2017	**143**	**144**	SLOPE	113	EOS	X	30	30	2:41 PM	2:46 PM	P			KS	BJD	
6/6/2017	**144**	**145**	SLOPE	BOS	EOS	X	30	30	2:32 PM	2:37 PM	P			KS	BJD	
6/6/2017	**144**	**146**	SLOPE	BOS	EOS	X	30	30	3:10 PM	3:15 PM	P			KS	BJD	
6/6/2017	**145**	**146**	SLOPE	BOS	EOS	X	30	30	2:22 PM	2:27 PM	P			KS	BJD	
6/6/2017	**146**	**147**	SLOPE	BOS	EOS	X	30	30	3:16 PM	3:21 PM	P			KS	BJD	
6/6/2017	**147**	**148**	SLOPE	BOS	EOS	X	30	30	2:56 PM	3:01 PM	P			KS	BJD	
6/6/2017	**146**	**148**	SLOPE	BOS	EOS	X	30	30	3:26 PM	3:31 PM	P			KS	BJD	
6/6/2017	**PE1**	**PE2**	SLOPE	BOS	EOS	X	30	30	4:15 PM	4:20 PM	P			KS	BJD	
6/6/2017	**149**	**PE2**	SLOPE	BOS	EOS	X	30	30	4:35 PM	4:40 PM	P			KS	BJD	
6/6/2017	**148**	**149**	SLOPE	BOS	EOS	X	30	30	3:28 PM	3:33 PM	P			KS	BJD	
6/6/2017	**149**	**150**	SLOPE	BOS	EOS	X	30	30	3:36 PM	3:41 PM	P			KS	BJD	
6/6/2017	**150**	**PE2**	SLOPE	BOS	EOS	X	30	30	4:32 PM	4:37 PM	P			KS	BJD	
6/6/2017	**147**	**151**	SLOPE	BOS	EOS	X	30	29	4:59 PM	5:04 PM	P			KS	BJD	
6/6/2017	**151**	**PE1**	SLOPE	BOS	EOS	X	30	30	4:24 PM	4:29 PM	P			KS	BJD	
6/6/2017	**150**	**151**	SLOPE	BOS	EOS	X	30	29	3:44 PM	3:49 PM	P			KS	BJD	
6/6/2017	**151**	**152**	SLOPE	BOS	EOS	X	30	30	5:28 PM	5:33 PM	P			KS	BJD	
6/6/2017	**152**	**154**	SLOPE	BOS	EOS	X	30	30	5:31 PM	5:36 PM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/6/2017	**153**	**154**	SLOPE	BOS	EOS	X	30	30	4:00 PM	4:05 PM	P			KS	BJD	
6/6/2017	**154**	**155**	SLOPE	BOS	EOS	X	30	30	5:35 PM	5:40 PM	P			KS	BJD	
6/6/2017	**153**	**155**	SLOPE	BOS	EOS	X	30	30	7:50 AM	7:55 AM	P			KS	BJD	
6/6/2017	**122**	**123**	SLOPE	BOS	EOS	X	30	30	10:34 AM	10:39 AM	P			KS	BJD	
6/6/2017	**123**	**124**	SLOPE	BOS	EOS	X	30	30	10:35 AM	10:40 AM	P			KS	BJD	
6/6/2017	**126**	**128**	SLOPE	BOS	EOS	X	30	29	10:50 AM	10:55 AM	P			KS	BJD	
6/6/2017	**127**	**128**	SLOPE	BOS	EOS	X	30	30	10:49 AM	10:54 AM	P			KS	BJD	
6/7/2017	**9**	**155**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/7/2017	**10**	**155**	SLOPE	BOS	EOS	X	30	28	8:45 AM	8:50 AM	P			KS	BJD	
6/7/2017	**10**	**154**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/7/2017	**11**	**154**	SLOPE	BOS	EOS	X	30	30	8:46 AM	8:51 AM	P			KS	BJD	
6/7/2017	**11**	**152**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/7/2017	**13**	**152**	SLOPE	BOS	EOS	X	30	30	8:47 AM	8:52 AM	P			KS	BJD	
6/7/2017	**14**	**151**	SLOPE	BOS	EOS	X	30	30	8:55 AM	9:00 AM	P			KS	BJD	
6/7/2017	**15**	**150**	SLOPE	BOS	EOS	X	30	28	8:59 AM	9:04 AM	P			KS	BJD	
6/7/2017	**16**	**149**	SLOPE	BOS	EOS	X	30	30	9:00 AM	9:05 AM	P			KS	BJD	
6/7/2017	**17**	**148**	SLOPE	BOS	EOS	X	30	30	9:03 AM	9:08 AM	P			KS	BJD	
6/7/2017	**20**	**146**	SLOPE	BOS	EOS	X	30	28	9:05 AM	9:10 AM	P			KS	BJD	
6/7/2017	**21**	**144**	SLOPE	BOS	EOS	X	30	30	9:08 AM	9:13 AM	P			KS	BJD	
6/7/2017	**22**	**143**	SLOPE	BOS	EOS	X	30	30	9:11 AM	9:16 AM	P			KS	BJD	
6/7/2017	**145**	**155**	SLOPE	BOS	EOS	X	30	30	8:01 AM	8:06 AM	P			KS	BJD	
6/7/2017	**145**	**153**	SLOPE	BOS	EOS	X	30	28	7:56 AM	8:01 AM	P			KS	BJD	
6/7/2017	**146**	**153**	SLOPE	BOS	EOS	X	30	28	7:56 AM	8:01 AM	P			KS	BJD	
6/7/2017	**146**	**152**	SLOPE	BOS	EOS	X	30	28	7:55 AM	8:00 AM	P			KS	BJD	
6/7/2017	**147**	**152**	SLOPE	BOS	14	X	30	30	8:14 AM	8:19 AM	P			KS	BJD	
6/7/2017	**147**	**152**	SLOPE	14	EOS	X	30	29	8:09 AM	8:14 AM	P			KS	BJD	
6/7/2017	**152**	**153**	SLOPE	BOS	22	X	30	30	7:46 AM	7:51 AM	P			KS	BJD	
6/7/2017	**152**	**153**	SLOPE	22	EOS	X	30	30	7:45 AM	7:50 AM	P			KS	BJD	
6/7/2017	**155**	**156**	SLOPE	BOS	40		30	30	2:51 PM	2:56 PM	P			KS	BJD	
6/7/2017	**155**	**156**	SLOPE	40	65		30	28	2:56 PM	3:01 PM	P			KS	BJD	
6/7/2017	**155**	**156**	SLOPE	65	EOS	X	30	30	3:13 PM	3:18 PM	P			KS	BJD	
6/7/2017	**156**	**157**	SLOPE	BOS	EOS	X	30	30	3:09 PM	3:14 PM	P			KS	BJD	
6/7/2017	**157**	**158**	SLOPE	BOS	EOS	X	30	28	2:49 PM	2:54 PM	P			KS	BJD	
6/7/2017	**157**	**159**	SLOPE	BOS	EOS	X	30	30	3:51 PM	3:56 PM	P			KS	BJD	
6/7/2017	**156**	**158**	SLOPE	BOS	EOS	X	30	30	3:28 PM	3:33 PM	P			KS	BJD	
6/7/2017	**158**	**159**	SLOPE	BOS	EOS	X	30	30	4:10 PM	4:15 PM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/7/2017	**159**	**160**	SLOPE	BOS	EOS	X	30	28	5:23 PM	5:28 PM	P			KS	BJD	
6/7/2017	**159**	**161**	SLOPE	BOS	EOS	X	30	28	8:01 PM	8:06 PM	P			KS	BJD	
6/7/2017	**160**	**161**	SLOPE	BOS	EOS	X	30	30	5:38 PM	5:43 PM	P			KS	BJD	
6/7/2017	**161**	**162**	SLOPE	BOS	EOS	X	30	30	7:54 PM	7:59 PM	P			KS	BJD	
6/7/2017	**160**	**162**	SLOPE	BOS	163		30	30	5:25 PM	5:30 PM	P			KS	BJD	
6/7/2017	**160**	**162**	SLOPE	169	EOS	X	30	30	5:37 PM	5:42 PM	P			KS	BJD	
6/7/2017	**162**	**163**	SLOPE	BOS	55		30	30	8:13 PM	8:18 PM	P			KS	BJD	
6/7/2017	**162**	**163**	SLOPE	57	EOS	X	30	30	8:12 PM	8:17 PM	P			KS	BJD	
6/8/2017	**163**	**164**	SLOPE	BOS	EOS	X	30	30	2:19 PM	2:24 PM	P			KS	BJD	
6/8/2017	**164**	**165**	SLOPE	BOS	EOS	X	30	30	2:20 PM	2:25 PM	P			KS	BJD	
6/8/2017	**163**	**165**	SLOPE	BOS	EOS	X	30	30	2:27 PM	2:32 PM	P			KS	BJD	
6/8/2017	**164**	**166**	SLOPE	BOS	EOS	X	30	30	2:43 PM	2:48 PM	P			KS	BJD	
6/8/2017	**165**	**166**	SLOPE	BOS	EOS	X	30	30	2:57 PM	3:02 PM	P			KS	BJD	
6/8/2017	**166**	**167**	SLOPE	BOS	EOS	X	30	29	3:12 PM	3:17 PM	P			KS	BJD	
6/8/2017	**167**	**168**	SLOPE	BOS	EOS	X	30	30	3:30 PM	3:35 PM	P			KS	BJD	
6/8/2017	**168**	**169**	SLOPE	BOS	EOS	X	30	29	3:57 PM	4:02 PM	P			KS	BJD	
6/8/2017	**169**	**170**	SLOPE	BOS	EOS	X	30	30	3:58 PM	4:03 PM	P			KS	BJD	
6/8/2017	**168**	**170**	SLOPE	BOS	EOS	X	30	28	3:59 PM	4:04 PM	P			KS	BJD	
6/8/2017	**167**	**170**	SLOPE	BOS	EOS	X	30	30	4:17 PM	4:22 PM	P			KS	BJD	
6/8/2017	**166**	**170**	SLOPE	BOS	EOS	X	30	29	4:18 PM	4:23 PM	P			KS	BJD	
6/8/2017	**164**	**170**	SLOPE	BOS	EOS	X	30	30	4:20 PM	4:25 PM	P			KS	BJD	
6/8/2017	**163**	**170**	SLOPE	BOS	EOS	X	30	30	4:42 PM	4:47 PM	P			KS	BJD	
6/8/2017	**162**	**170**	SLOPE	BOS	EOS	X	30	30	4:43 PM	4:48 PM	P			KS	BJD	
6/8/2017	**170**	**171**	SLOPE	BOS	EOS	X	30	29	5:00 PM	5:05 PM	P			KS	BJD	
6/8/2017	**171**	**172**	SLOPE	BOS	EOS	X	30	30	5:17 PM	5:22 PM	P			KS	BJD	
6/8/2017	**171**	**173**	SLOPE	BOS	EOS	X	30	30	5:16 PM	5:21 PM	P			KS	BJD	
6/8/2017	**172**	**173**	SLOPE	BOS	EOS	X	30	29	5:22 PM	5:27 PM	P			KS	BJD	
6/8/2017	**172**	**174**	SLOPE	BOS	EOS	X	30	30	5:49 PM	5:54 PM	P			KS	BJD	
6/8/2017	**173**	**174**	SLOPE	BOS	EOS	X	30	30	5:36 PM	5:41 PM	P			KS	BJD	
6/8/2017	**174**	**175**	SLOPE	BOS	EOS	X	30	30	5:37 PM	5:42 PM	P			KS	BJD	
6/8/2017	**175**	**176**	SLOPE	BOS	EOS	X	30	30	5:54 PM	5:59 PM	P			KS	BJD	
6/8/2017	**176**	**177**	SLOPE	BOS	EOS	X	30	30	5:59 PM	6:00 PM	P			KS	BJD	
6/8/2017	**169**	**178**	SLOPE	BOS	EOS	X	30	30	8:21 PM	8:26 PM	P			KS	BJD	
6/8/2017	**170**	**178**	SLOPE	BOS	EOS	X	30	30	8:15 PM	8:20 PM	P			KS	BJD	
6/9/2017	**177**	**180**	SLOPE	BOS	EOS	X	30	30	11:12 AM	11:17 AM	P			KS	BJD	
6/9/2017	**176**	**180**	SLOPE	BOS	EOS	X	30	28	11:13 AM	11:18 AM	P			KS	BJD	
6/9/2017	**179**	**180**	SLOPE	BOS	10		30	28	11:21 AM	11:26 AM	P			KS	BJD	
6/9/2017	**179**	**180**	SLOPE	10	EOS	X	30	29	11:14 AM	11:19 AM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/9/2017	**176**	**179**	SLOPE	BOS	EOS	X	30	30	11:24 AM	11:29 AM	P			KS	BJD	
6/9/2017	**180**	**181**	SLOPE	BOS	EOS	X	30	30	11:18 AM	11:23 AM	P			KS	BJD	
6/9/2017	**179**	**181**	SLOPE	BOS	EOS	X	30	30	11:46 AM	11:51 AM	P			KS	BJD	
6/9/2017	**175**	**179**	SLOPE	BOS	EOS	X	30	30	11:29 AM	11:34 AM	P			KS	BJD	
6/9/2017	**174**	**179**	SLOPE	BOS	EOS	X	30	30	11:43 AM	11:48 AM	P			KS	BJD	
6/9/2017	**173**	**179**	SLOPE	BOS	EOS	X	30	29	2:25 PM	2:30 PM	P			KS	BJD	
6/9/2017	**171**	**179**	SLOPE	BOS	EOS	X	30	30	2:26 PM	2:31 PM	P			KS	BJD	
6/9/2017	**171**	**181**	SLOPE	BOS	EOS	X	30	30	2:39 PM	2:44 PM	P			KS	BJD	
6/9/2017	**181**	**184**	SLOPE	BOS	EOS	X	30	29	2:30 PM	2:35 PM	P			KS	BJD	
6/9/2017	**181**	**185**	SLOPE	BOS	EOS	X	30	30	2:36 PM	2:41 PM	P			KS	BJD	
6/9/2017	**181**	**182**	SLOPE	BOS	EOS	X	30	30	11:45 AM	11:50 AM	P			KS	BJD	
6/9/2017	**182**	**185**	SLOPE	BOS	EOS	X	30	30	1:49 PM	1:54 PM	P			KS	BJD	
6/9/2017	**185**	**186**	SLOPE	BOS	EOS	X	30	30	1:41 PM	1:46 PM	P			KS	BJD	
6/9/2017	**181**	**183**	SLOPE	BOS	EOS	X	30	30	11:37 AM	11:42 AM	P			KS	BJD	
6/9/2017	**183**	**186**	SLOPE	BOS	EOS	X	30	29	1:36 PM	1:41 PM	P			KS	BJD	
6/9/2017	**186**	**187**	SLOPE	BOS	EOS	X	30	30	1:37 PM	1:42 PM	P			KS	BJD	
6/9/2017	**185**	**187**	SLOPE	BOS	EOS	X	30	30	1:46 PM	1:51 PM	P			KS	BJD	
6/9/2017	**187**	**188**	SLOPE	BOS	EOS	X	30	30	1:56 PM	2:01 PM	P			KS	BJD	
6/9/2017	**188**	**189**	SLOPE	BOS	EOS	X	30	29	2:04 PM	2:09 PM	P			KS	BJD	
6/9/2017	**187**	**189**	SLOPE	BOS	EOS	X	30	30	2:12 PM	2:17 PM	P			KS	BJD	
6/9/2017	**185**	**189**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	BJD	
6/9/2017	**185**	**190**	SLOPE	BOS	EOS	X	30	29	3:02 PM	3:07 PM	P			KS	BJD	
6/9/2017	**189**	**190**	SLOPE	BOS	EOS	X	30	30	3:01 PM	3:06 PM	P			KS	BJD	
6/9/2017	**190**	**192**	SLOPE	BOS	EOS	X	30	30	3:24 PM	3:29 PM	P			KS	BJD	
6/9/2017	**190**	**191**	SLOPE	BOS	EOS	X	30	30	3:11 PM	3:16 PM	P			KS	BJD	
6/9/2017	**191**	**193**	SLOPE	BOS	EOS	X	30	29	4:00 PM	4:05 PM	P			KS	BJD	
6/9/2017	**191**	**192**	SLOPE	BOS	EOS	X	30	29	3:25 PM	3:30 PM	P			KS	BJD	
6/9/2017	**192**	**193**	SLOPE	BOS	26		30	30	3:34 PM	3:39 PM	P			KS	BJD	
6/9/2017	**192**	**193**	SLOPE	26	EOS	X	30	30	3:31 PM	3:36 PM	P			KS	BJD	
6/9/2017	**193**	**194**	SLOPE	BOS	EOS	X	30	30	4:02 PM	4:07 PM	P			KS	BJD	
6/9/2017	**194**	**195**	SLOPE	BOS	EOS	X	30	30	4:01 PM	4:06 PM	P			KS	BJD	
6/9/2017	**195**	**196**	SLOPE	BOS	EOS	X	30	28	4:37 PM	4:42 PM	P			KS	BJD	
6/9/2017	**195**	**197**	SLOPE	BOS	EOS	X	30	30	4:36 PM	4:41 PM	P			KS	BJD	
6/9/2017	**196**	**197**	SLOPE	BOS	EOS	X	30	30	4:57 PM	5:02 PM	P			KS	BJD	
6/9/2017	**194**	**196**	SLOPE	BOS	EOS	X	30	29	4:56 PM	5:01 PM	P			KS	BJD	
6/10/2017	**197**	**198**	SLOPE	BOS	EOS	X	30	30	9:42 AM	9:47 AM	P			KS	BJD	
6/10/2017	**198**	**199**	SLOPE	BOS	EOS	X	30	30	9:24 AM	9:29 AM	P			KS	BJD	
6/10/2017	**199**	**200**	SLOPE	BOS	11		30	30	9:25 AM	9:30 AM	P			KS	BJD	11-EOS; Pipe B; No AT
6/10/2017	**199**	**201**	SLOPE	BOS	EOS	X	30	28	9:26 AM	9:31 AM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/10/2017	**200**	**201**	SLOPE	BOS	EOS	X	30	30	9:44 AM	9:49 AM	P			KS	BJD	
6/10/2017	**198**	**200**	SLOPE	BOS	51		30	30	9:33 AM	9:38 AM	P			KS	BJD	
6/10/2017	**198**	**200**	SLOPE	51	59		-	-	-	-	-	X			BJD	
6/10/2017	**198**	**200**	SLOPE	59	EOS	X	30	29	9:38 AM	9:43 AM	P			KS	BJD	
6/10/2017	**201**	**203**	SLOPE	BOS	EOS	X	30	30	9:50 AM	9:55 AM	P			KS	BJD	
6/10/2017	**202**	**203**	SLOPE	BOS	10		30	28	9:57 AM	10:02 AM	P			KS	BJD	
6/10/2017	**202**	**203**	SLOPE	10	EOS	X	-	-	-	-	-	X			BJD	
6/10/2017	**203**	**204**	SLOPE	BOS	EOS	X	30	30	10:26 AM	10:31 AM	P			KS	BJD	
6/10/2017	**201**	**202**	SLOPE	BOS	9		-	-	-	-	-	X			BJD	
6/10/2017	**201**	**202**	SLOPE	9	EOS	X	30	30	9:59 AM	10:04 AM	P			KS	BJD	
6/10/2017	**202**	**204**	SLOPE	BOS	EOS	X	30	30	10:20 AM	10:25 AM	P			KS	BJD	
6/10/2017	**198**	**PS**	SLOPE	BOS	EOS	X	30	30	10:35 AM	10:40 AM	P			KS	BJD	
6/10/2017	**200**	**PS**	SLOPE	BOS	EOS	X	30	28	10:36 AM	10:41 AM	P			KS	BJD	
6/10/2017	**201**	**PS**	SLOPE	BOS	9		30	28	10:46 AM	10:51 AM	P			KS	BJD	
6/10/2017	**201**	**PS**	SLOPE	9	EOS	X	30	29	10:47 AM	10:52 AM	P			KS	BJD	
6/10/2017	**203**	**PS**	SLOPE	BOS	EOS	X	30	30	11:03 AM	11:08 AM	P			KS	BJD	
6/10/2017	**204**	**PS**	SLOPE	BOS	EOS	X	30	28	11:04 AM	11:09 AM	P			KS	BJD	
6/10/2017	**19**	**167**	SLOPE	BOS	EOS	X	30	28	1:50 PM	1:55 PM	P			KS	BJD	
6/10/2017	**1**	**167**	SLOPE	BOS	EOS	X	30	30	1:51 PM	1:56 PM	P			KS	BJD	
6/10/2017	**1**	**166**	SLOPE	BOS	EOS	X	30	30	1:52 PM	1:57 PM	P			KS	BJD	
6/10/2017	**2**	**166**	SLOPE	BOS	EOS	X	30	28	1:56 PM	2:01 PM	P			KS	BJD	
6/10/2017	**2**	**165**	SLOPE	BOS	EOS	X	30	30	1:58 PM	2:03 PM	P			KS	BJD	
6/10/2017	**3**	**165**	SLOPE	BOS	EOS	X	30	30	2:00 PM	2:05 PM	P			KS	BJD	
6/10/2017	**3**	**163**	SLOPE	BOS	EOS	X	30	28	2:03 PM	2:08 PM	P			KS	BJD	
6/10/2017	**4**	**163**	SLOPE	BOS	EOS	X	30	29	2:06 PM	2:11 PM	P			KS	BJD	
6/10/2017	**4**	**162**	SLOPE	BOS	EOS	X	30	30	2:08 PM	2:13 PM	P			KS	BJD	
6/10/2017	**5**	**162**	SLOPE	BOS	EOS	X	30	28	2:10 PM	2:15 PM	P			KS	BJD	
6/10/2017	**5**	**161**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/10/2017	**6**	**161**	SLOPE	BOS	EOS	X	30	30	2:14 PM	2:19 PM	P			KS	BJD	
6/10/2017	**6**	**159**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/10/2017	**7**	**159**	SLOPE	BOS	EOS	X	30	30	2:18 PM	2:23 PM	P			KS	BJD	
6/10/2017	**7**	**158**	SLOPE	BOS	EOS	X	30	28	2:20 PM	2:25 PM	P			KS	BJD	
6/10/2017	**8**	**158**	SLOPE	BOS	EOS	X	30	30	2:24 PM	2:29 PM	P			KS	BJD	
6/10/2017	**8**	**156**	SLOPE	BOS	EOS	X	30	28	2:30 PM	2:35 PM	P			KS	BJD	
6/10/2017	**9**	**156**	SLOPE	BOS	EOS	X	30	30	2:31 PM	2:36 PM	P			KS	BJD	
6/10/2017	**135**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**134**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**133**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**132**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/10/2017	**131**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**130**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**129**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**127**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**128**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**125**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**124**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**123**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**122**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**121**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**120**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**119**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**117**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**116**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**115**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**114**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**113**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**112**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**111**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**110**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**137**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**PE1**	**147**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**PE1**	**148**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/10/2017	**PE2**	**148**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	BJD	
6/12/2017	**R256**	**R257**	SLOPE	BOS	EOS	X	30	30	1:46 PM	1:51 PM	P			KS	BJD	
6/12/2017	**160**	**R257**	SLOPE	BOS	EOS	X	30	28	1:47 PM	1:52 PM	P			KS	BJD	
6/12/2017	**162**	**R257**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			BJD	
6/12/2017	**170**	**R257**	SLOPE	BOS	EOS	X	30	30	1:40 PM	1:45 PM	P			KS	BJD	
6/12/2017	**170**	**R256**	SLOPE	BOS	EOS	X	30	28	1:49 PM	1:54 PM	P			KS	BJD	
6/12/2017	**159**	**R251**	SLOPE	BOS	EOS	X	30	28	2:59 PM	3:04 PM	P			KS	BJD	
6/12/2017	**159**	**R252**	SLOPE	BOS	EOS	X	30	30	3:09 PM	3:14 PM	P			KS	BJD	
6/12/2017	**157**	**R253**	SLOPE	BOS	EOS	X	30	30	3:15 PM	3:20 PM	P			KS	BJD	
6/12/2017	**156**	**R254**	SLOPE	BOS	EOS	X	30	30	3:21 PM	3:26 PM	P			KS	BJD	
6/12/2017	**155**	**R254**	SLOPE	BOS	EOS	X	30	30	3:27 PM	3:32 PM	P			KS	BJD	
6/12/2017	**145**	**R255**	SLOPE	BOS	EOS	X	30	30	3:33 PM	3:38 PM	P			KS	BJD	
6/12/2017	**R255**	**PS**	SLOPE	BOS	EOS	X	30	30	3:35 PM	3:40 PM	P			KS	BJD	
6/12/2017	**R254**	**PS**	SLOPE	BOS	EOS	X	30	29	3:29 PM	3:34 PM	P			KS	BJD	
6/12/2017	**R254**	**PS**	SLOPE	BOS	EOS	X	30	29	3:23 PM	3:28 PM	P			KS	BJD	
6/12/2017	**R253**	**PS**	SLOPE	BOS	EOS	X	30	30	3:16 PM	3:21 PM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/12/2017	R252	PS	SLOPE	BOS	EOS	X	30	29	3:10 PM	3:15 PM	P			KS	BJD	
6/12/2017	R251	PS	SLOPE	BOS	9		30	30	2:45 PM	2:50 PM	P			KS	BJD	
6/12/2017	R251	PS	SLOPE	9	EOS	X	30	29	3:00 PM	3:05 PM	P			KS	BJD	
6/12/2017	R250	PS	SLOPE	BOS	EOS	X	30	30	2:42 PM	2:47 PM	P			KS	BJD	
6/12/2017	R249	PS	SLOPE	BOS	15		30	30	11:26 AM	11:31 AM	P			KS	BJD	
6/12/2017	R249	PS	SLOPE	15	EOS	X	30	30	11:15 AM	11:20 AM	P			KS	BJD	
6/12/2017	R248	PS	SLOPE	BOS	EOS	X	30	28	11:14 AM	11:19 AM	P			KS	BJD	
6/12/2017	R247	PS	SLOPE	BOS	EOS	X	30	30	11:05 AM	11:10 AM	P			KS	BJD	
6/12/2017	R246	PS	SLOPE	BOS	EOS	X	30	29	11:06 AM	11:11 AM	P			KS	BJD	
6/12/2017	R245	PS	SLOPE	BOS	EOS	X	30	30	10:25 AM	10:30 AM	P			KS	BJD	
6/12/2017	R244	PS	SLOPE	BOS	16		30	28	10:17 AM	10:22 AM	P			KS	BJD	
6/12/2017	R244	PS	SLOPE	16	EOS	X	30	30	10:09 AM	10:14 AM	P			KS	BJD	
6/12/2017	186	PE3	SLOPE	BOS	EOS	X	30	30	2:09 PM	2:14 PM	P			KS	BJD	
6/12/2017	183	PE3	SLOPE	BOS	EOS	X	30	30	2:12 PM	2:17 PM	P			KS	BJD	
6/12/2017	181	PE3	SLOPE	BOS	EOS	X	30	29	2:05 PM	2:10 PM	P			KS	BJD	
6/12/2017	182	PE3	SLOPE	BOS	EOS	X	30	30	2:03 PM	2:08 PM	P			KS	BJD	
6/12/2017	197	R244	SLOPE	BOS	EOS	X	30	28	10:08 AM	10:13 AM	P			KS	BJD	
6/12/2017	196	R244	SLOPE	BOS	EOS	X	30	28	10:15 AM	10:20 AM	P			KS	BJD	
6/12/2017	194	R244	SLOPE	BOS	EOS	X	30	28	10:24 AM	10:29 AM	P			KS	BJD	
6/12/2017	194	R245	SLOPE	BOS	EOS	X	30	28	10:30 AM	10:35 AM	P			KS	BJD	
6/12/2017	193	R245	SLOPE	BOS	EOS	X	30	29	10:32 AM	10:37 AM	P			KS	BJD	
6/12/2017	191	R246	SLOPE	BOS	EOS	X	30	28	10:39 AM	10:44 AM	P			KS	BJD	
6/12/2017	191	R247	SLOPE	BOS	EOS	X	30	30	10:40 AM	10:45 AM	P			KS	BJD	
6/12/2017	190	R247	SLOPE	BOS	EOS	X	30	28	10:46 AM	10:51 AM	P			KS	BJD	
6/12/2017	185	R247	SLOPE	BOS	EOS	X	30	30	10:47 AM	10:52 AM	P			KS	BJD	
6/12/2017	184	R248	SLOPE	BOS	EOS	X	30	29	10:54 AM	10:59 AM	P			KS	BJD	
6/12/2017	171	R249	SLOPE	BOS	4		30	30	10:57 AM	11:02 AM	P			KS	BJD	
6/12/2017	171	R249	SLOPE	4	EOS	X	30	30	10:59 AM	11:04 AM	P			KS	BJD	
6/12/2017	171	R258	SLOPE	BOS	EOS	X	30	30	11:33 AM	11:38 AM	P			KS	BJD	
6/12/2017	181	R258	SLOPE	BOS	EOS	X	30	30	11:34 AM	11:39 AM	P			KS	BJD	
6/12/2017	184	R258	SLOPE	BOS	EOS	X	30	30	10:40 AM	10:45 AM	P			KS	BJD	
6/12/2017	170	R249	SLOPE	BOS	EOS	X	30	30	11:27 AM	11:32 AM	P			KS	BJD	
6/12/2017	170	R250	SLOPE	BOS	EOS	X	30	30	11:43 AM	11:48 AM	P			KS	BJD	
6/12/2017	R251	R256	SLOPE	BOS	EOS	X	30	29	2:53 PM	2:58 PM	P			KS	BJD	
6/12/2017	159	R256	SLOPE	BOS	8		30	28	2:44 PM	2:49 PM	P			KS	BJD	
6/12/2017	159	R256	SLOPE	10	EOS	X	30	30	11:55 AM	12:00 PM	P			KS	BJD	
6/12/2017	160	R256	SLOPE	BOS	EOS	X	30	29	1:52 PM	1:57 PM	P			KS	BJD	
6/12/2017	202	205	SLOPE	BOS	EOS	X	30	28	9:04 AM	9:09 AM	P			KS	BJD	
6/12/2017	204	205	SLOPE	BOS	EOS	X	30	29	9:08 AM	9:13 AM	P			KS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/12/2017	**205**	**206**	SLOPE	BOS	EOS	X	30	30	9:09 AM	9:14 AM	P			KS	BJD	
6/12/2017	**204**	**206**	SLOPE	BOS	EOS	X	30	30	9:50 AM	9:55 AM	P			KS	BJD	
6/12/2017	**206**	**207**	SLOPE	BOS	EOS	X	30	30	9:52 AM	9:57 AM	P			KS	BJD	
6/12/2017	**207**	**208**	SLOPE	BOS	24		30	28	9:58 AM	10:03 AM	P			KS	BJD	
6/12/2017	**207**	**208**	SLOPE	24	EOS	X	30	30	9:54 AM	9:59 AM	P			KS	BJD	
6/12/2017	**206**	**PS**	SLOPE	BOS	EOS	X	30	30	3:43 PM	3:48 PM	P			KS	BJD	
6/12/2017	**207**	**PS**	SLOPE	BOS	3		-	-	-	-	-	X			BJD	
6/12/2017	**207**	**PS**	SLOPE	3	EOS	X	30	30	3:45 PM	3:50 PM	P			KS	BJD	
6/12/2017	**208**	**PS**	SLOPE	BOS	EOS	X	30	30	3:50 PM	3:55 PM	P			KS	BJD	
6/13/2017	**209**	**210**	SLOPE	BOS	EOS	X	30	30	9:27 AM	9:32 AM	P			KS	BJD	
6/13/2017	**209**	**217**	SLOPE	4	EOS	X	30	30	11:09 AM	11:14 AM	P			KS	BJD	0-4: Patch: No Air Test
6/13/2017	**210**	**217**	SLOPE	BOS	EOS	X	30	29	11:18 AM	11:23 AM	P			KS	BJD	
6/13/2017	**210**	**211**	SLOPE	BOS	EOS	X	30	30	10:11 AM	10:16 AM	P			KS	BJD	
6/13/2017	**211**	**217**	SLOPE	BOS	EOS	X	30	28	11:19 AM	11:24 AM	P			KS	BJD	
6/13/2017	**211**	**212**	SLOPE	BOS	EOS	X	30	30	10:12 AM	10:17 AM	P			KS	BJD	
6/13/2017	**212**	**217**	SLOPE	BOS	EOS	X	30	28	11:20 AM	11:25 AM	P			KS	BJD	
6/13/2017	**212**	**215**	SLOPE	BOS	EOS	X	30	30	10:35 AM	10:40 AM	P			KS	BJD	
6/13/2017	**212**	**213**	SLOPE	BOS	5		30	30	10:53 AM	11:08 AM	P			KS	BJD	Patch: 5-7
6/13/2017	**212**	**213**	SLOPE	7	EOS	X	30	30	11:04 AM	11:09 AM	P			KS	BJD	
6/13/2017	**213**	**215**	SLOPE	BOS	11		30	30	10:47 AM	10:52 AM	P			KS	BJD	11-EOS: Pipe Boot
6/13/2017	**213**	**214**	SLOPE	4	EOS	X	30	30	11:06 AM	11:11 AM	P			KS	BJD	0-4: Pipe Boot
6/13/2017	**214**	**216**	SLOPE	7	EOS	X	30	29	10:56 AM	11:01 AM	P			KS	BJD	0-7: Pipe Boot
6/13/2017	**215**	**217**	SLOPE	BOS	EOS	X	30	28	11:27 AM	11:32 AM	P			KS	BJD	
6/13/2017	**215**	**216**	SLOPE	BOS	EOS	X	30	30	10:44 AM	10:49 AM	P			KS	BJD	
6/13/2017	**216**	**217**	SLOPE	BOS	10		30	29	11:28 AM	11:33 AM	P			KS	BJD	Patch: 10
6/13/2017	**216**	**217**	SLOPE	10	EOS	X	30	28	11:31 AM	11:36 AM	P			KS	BJD	
6/13/2017	**136**	**214**	SLOPE	BOS	EOS	X	30	29	1:35 PM	1:40 PM	P			KS	BJD	
6/13/2017	**136**	**213**	SLOPE	BOS	EOS	X	30	29	1:34 PM	1:39 PM	P			KS	BJD	
6/13/2017	**136**	**212**	SLOPE	BOS	EOS	X	30	30	11:51 AM	11:56 AM	P			KS	BJD	
6/13/2017	**136**	**211**	SLOPE	BOS	EOS	X	30	28	11:50 AM	11:55 AM	P			KS	BJD	
6/13/2017	**136**	**210**	SLOPE	BOS	EOS	X	30	30	11:46 AM	11:51 AM	P			KS	BJD	
6/13/2017	**136**	**209**	SLOPE	BOS	EOS	X	30	30	11:40 AM	11:45 AM	P			KS	BJD	
6/13/2017	**137**	**209**	SLOPE	BOS	EOS	X	30	30	11:39 AM	11:44 AM	P			KS	BJD	
6/13/2017	**217**	**219**	SLOPE	BOS	EOS	X	30	29	1:49 PM	1:54 PM	P			KS	BJD	
6/13/2017	**218**	**219**	SLOPE	BOS	EOS	X	30	30	1:56 PM	2:01 PM	P			KS	BJD	
6/13/2017	**219**	**220**	SLOPE	BOS	EOS	X	30	30	1:58 PM	2:03 PM	P			KS	BJD	
6/13/2017	**217**	**218**	SLOPE	BOS	16		30	30	1:50 PM	1:55 PM	P			KS	BJD	Patch: 16
6/13/2017	**217**	**218**	SLOPE	16	EOS	X	30	30	1:38 PM	1:43 PM	P			KS	BJD	
6/13/2017	**218**	**220**	SLOPE	BOS	73		30	30	1:53 PM	1:58 PM	P			KS	BJD	Patch: 73-77

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/13/2017	**218**	**220**	SLOPE	77	EOS	X	-	-	-	-	-	X			BJD	
6/13/2017	**220**	**221**	SLOPE	BOS	EOS	X	30	30	2:02 PM	2:07 PM	P			KS	BJD	
6/13/2017	**220**	**222**	SLOPE	BOS	10		-	-	-	-	-	X			BJD	
6/13/2017	**220**	**222**	SLOPE	10	EOS	X	30	30	2:50 PM	2:55 PM	P			KS	BJD	
6/13/2017	**221**	**222**	SLOPE	8	EOS	X	30	30	2:46 PM	2:51 PM	P			KS	BJD	BOS-8: Pipe Boot
6/13/2017	**222**	**223**	SLOPE	BOS	EOS	X	30	29	2:43 PM	2:48 PM	P			KS	BJD	
6/13/2017	**221**	**223**	SLOPE	BOS	21		30	30	2:13 PM	2:18 PM	P			KS	BJD	Patch: 21-26
6/13/2017	**221**	**223**	SLOPE	26	45		30	30	2:37 PM	2:42 PM	P			KS	BJD	Patch: 45-52
6/13/2017	**221**	**223**	SLOPE	52	EOS	X	30	29	2:35 PM	2:40 PM	P			KS	BJD	
6/14/2017	**223**	**224**	SLOPE	BOS	EOS	X	30	29	8:12 AM	8:17 AM	P			KS	BJD	
6/14/2017	**224**	**225**	SLOPE	BOS	13		30	30	8:13 AM	8:18 AM	P			KS	BJD	
6/14/2017	**224**	**225**	SLOPE	13	EOS	X	30	30	8:34 AM	8:39 AM	P			KS	BJD	
6/14/2017	**225**	**226**	SLOPE	BOS	EOS	X	30	30	9:56 AM	10:01 AM	P			KS	BJD	
6/14/2017	**226**	**222**	SLOPE	BOS	64		30	30	9:57 AM	10:02 AM	P			KS	BJD	
6/14/2017	**226**	**227**	SLOPE	64	72		30	28	10:05 AM	10:10 AM	P			KS	BJD	
6/14/2017	**226**	**227**	SLOPE	72	EOS	X	30	28	10:12 AM	10:17 AM	P			KS	BJD	
6/14/2017	**227**	**228**	SLOPE	BOS	EOS	X	30	30	9:58 AM	10:03 AM	P			KS	BJD	
6/14/2017	**228**	**229**	SLOPE	BOS	EOS	X	30	29	10:08 AM	10:13 AM	P			KS	BJD	
6/14/2017	**229**	**230**	SLOPE	BOS	EOS	X	30	30	10:21 AM	10:26 AM	P			KS	BJD	
6/14/2017	**230**	**231**	SLOPE	BOS	EOS	X	30	29	10:42 AM	10:47 AM	P			KS	BJD	
6/14/2017	**231**	**233**	SLOPE	BOS	EOS	X	30	30	10:50 AM	10:55 AM	P			KS	BJD	
6/14/2017	**232**	**233**	SLOPE	BOS	EOS	X	30	30	10:49 AM	10:54 AM	P			KS	BJD	
6/14/2017	**231**	**232**	SLOPE	BOS	28		30	28	10:54 AM	10:59 AM	P			KS	BJD	
6/14/2017	**231**	**232**	SLOPE	45	EOS	X	30	29	11:13 AM	11:18 AM	P			KS	BJD	
6/14/2017	**233**	**234**	SLOPE	BOS	EOS	X	30	28	11:23 AM	11:28 AM	P			KS	BJD	
6/14/2017	**232**	**234**	SLOPE	BOS	EOS	X	30	30	11:33 AM	11:38 AM	P			KS	BJD	
6/14/2017	**231**	**232**	SLOPE	28	36		30	30	11:07 AM	11:12 AM	P			KS	BJD	
6/14/2017	**231**	**232**	SLOPE	36	45		30	29	11:08 AM	11:13 AM	P			KS	BJD	
6/16/2017	**234**	**235**	SLOPE	BOS	55		30	30	7:47 AM	7:52 AM	P			KS	BJD	
6/16/2017	**234**	**235**	SLOPE	55	EOS	X	30	29	7:56 AM	8:01 AM	P			KS	BJD	
6/16/2017	**101**	**235**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**100**	**234**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**233**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**231**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**230**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**229**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**228**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**227**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**226**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/16/2017	**225**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**224**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**223**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**221**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**220**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**219**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**217**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**209**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/16/2017	**137**	**209**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	BS	BJD	
6/19/2017	**R478**	**100**	SLOPE	BOS	76		30	30	8:54 AM	8:59 AM	P			KS	BJV	
6/19/2017	**R478**	**100**	SLOPE	76	EOS	X	30	30	8:56 AM	9:01 AM	P			KS	BJV	
6/19/2017	**R478**	**99**	SLOPE	BOS	76		30	30	9:12 AM	9:17 AM	P			KS	BJV	
6/19/2017	**R478**	**99**	SLOPE	76	EOS	X	30	29	9:20 AM	9:25 AM	P			KS	BJV	
6/19/2017	**R478**	**98**	SLOPE	BOS	EOS	X	30	30	9:26 AM	9:31 AM	P			KS	BJV	
6/19/2017	**R479**	**93**	SLOPE	BOS	EOS	X	30	30	9:43 AM	9:48 AM	P			KS	BJV	
6/19/2017	**R479**	**91**	SLOPE	BOS	EOS	X	30	29	9:51 AM	9:56 AM	P			KS	BJV	
6/19/2017	**R480**	**87**	SLOPE	BOS	EOS	X	30	29	10:11 AM	10:16 AM	P			KS	BJV	
6/19/2017	**R480**	**86**	SLOPE	BOS	EOS	X	30	30	10:26 AM	10:31 AM	P			KS	BJV	
6/19/2017	**R481**	**86**	SLOPE	BOS	EOS	X	30	30	10:34 AM	10:39 AM	P			KS	BJV	
6/19/2017	**R481**	**85**	SLOPE	BOS	EOS	X	30	29	10:35 AM	10:40 AM	P			KS	BJV	
6/19/2017	**86**	**R482**	SLOPE	BOS	34		30	28	10:47 AM	10:52 AM	P			KS	BJV	
6/19/2017	**86**	**R482**	SLOPE	34	EOS	X	30	30	10:50 AM	10:55 AM	P			KS	BJV	
6/19/2017	**85**	**R482**	SLOPE	BOS	10		30	30	10:52 AM	10:57 AM	P			KS	BJV	
6/19/2017	**85**	**R482**	SLOPE	10	EOS	X	30	30	10:57 AM	11:02 AM	P			KS	BJV	
6/19/2017	**234**	**236**	SLOPE	BOS	EOS	X	30	30	1:56 PM	2:01 PM	P			KS	BJV	
6/21/2017	**235**	**237**	SLOPE	BOS	EOS	X	30	30	8:59 AM	9:04 AM	P			KS	AAW	
6/21/2017	**237**	**238**	SLOPE	BOS	9		30	28	9:30 AM	9:35 AM	P			KS	AAW	
6/21/2017	**237**	**238**	SLOPE	9	EOS	X	30	30	9:28 AM	9:33 AM	P			KS	AAW	
6/21/2017	**238**	**239**	SLOPE	BOS	41		30	30	9:47 AM	9:52 AM	P			KS	AAW	
6/21/2017	**236**	**237**	SLOPE	BOS	15		30	30	11:03 AM	11:08 AM	P			KS	AAW	
6/21/2017	**236**	**237**	SLOPE	15	EOS	X	-	-	-	-	-	X			AAW	
6/21/2017	**239**	**238**	SLOPE	41	EOS		-	-	-	-	-	X			AAW	
6/21/2017	**238**	**240**	SLOPE	BOS	EOS	X	30	30	9:55 AM	10:00 AM	P			KS	AAW	
6/21/2017	**239**	**240**	SLOPE	BOS	EOS	X	30	30	10:20 AM	10:25 AM	P			KS	AAW	
6/21/2017	**240**	**241**	SLOPE	BOS	28		30	30	10:16 AM	10:21 AM	P			KS	AAW	
6/21/2017	**240**	**241**	SLOPE	28	EOS	X	30	29	10:21 AM	10:26 AM	P			KS	AAW	
6/21/2017	**239**	**241**	SLOPE	BOS	21		30	30	10:22 AM	10:27 AM	P			KS	AAW	
6/21/2017	**239**	**241**	SLOPE	21	EOS	X	30	30	10:30 AM	10:35 AM	P			KS	AAW	
6/21/2017	**241**	**242**	SLOPE	BOS	EOS	X	30	29	11:00 AM	11:05 AM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/21/2017	**241**	**243**	SLOPE	BOS	EOS	X	30	30	11:11 AM	11:16 AM	P			KS	AAW	
6/21/2017	**242**	**243**	SLOPE	BOS	EOS	X	30	29	10:34 AM	10:39 AM	P			KS	AAW	
6/21/2017	**242**	**244**	SLOPE	BOS	EOS	X	30	30	11:29 AM	11:34 AM	P			KS	AAW	
6/21/2017	**241**	**244**	SLOPE	BOS	EOS	X	30	30	11:31 AM	11:36 AM	P			KS	AAW	
6/21/2017	**239**	**244**	SLOPE	BOS	EOS	X	30	29	11:33 AM	11:38 AM	P			KS	AAW	
6/21/2017	**238**	**244**	SLOPE	BOS	EOS	X	30	29	11:34 AM	11:39 AM	P			KS	AAW	
6/21/2017	**237**	**244**	SLOPE	BOS	EOS	X	30	29	1:10 AM	1:15 AM	P			KS	AAW	
6/21/2017	**235**	**244**	SLOPE	BOS	11		30	30	1:09 AM	1:14 AM	P			KS	AAW	
6/21/2017	**235**	**244**	SLOPE	11	EOS	X	-	-	-	-	-	X			AAW	
6/21/2017	**244**	**251**	SLOPE	BOS	EOS	X	30	30	2:59 AM	3:04 AM	P			KS	AAW	
6/21/2017	**242**	**251**	SLOPE	BOS	EOS	X	30	30	3:00 AM	3:05 AM	P			KS	AAW	
6/21/2017	**250**	**251**	SLOPE	BOS	EOS	X	30	30	3:01 AM	3:06 AM	P			KS	AAW	
6/21/2017	**242**	**250**	SLOPE	BOS	EOS	X	30	29	3:02 AM	3:07 AM	P			KS	AAW	
6/21/2017	**249**	**250**	SLOPE	BOS	EOS	X	30	30	3:15 AM	3:20 AM	P			KS	AAW	
6/21/2017	**242**	**249**	SLOPE	BOS	EOS	X	30	29	3:16 AM	3:21 AM	P			KS	AAW	
6/21/2017	**248**	**249**	SLOPE	BOS	EOS	X	30	30	3:17 AM	3:22 AM	P			KS	AAW	
6/21/2017	**242**	**248**	SLOPE	BOS	EOS	X	30	30	3:26 AM	3:31 AM	P			KS	AAW	
6/21/2017	**243**	**248**	SLOPE	BOS	EOS	X	30	30	3:27 AM	3:32 AM	P			KS	AAW	
6/21/2017	**248**	**247**	SLOPE	BOS	EOS	X	30	30	3:18 AM	3:23 AM	P			KS	AAW	
6/21/2017	**243**	**247**	SLOPE	BOS	EOS	X	30	30	3:39 AM	3:44 AM	P			KS	AAW	
6/21/2017	**246**	**247**	SLOPE	BOS	31		30	30	3:37 AM	3:42 AM	P			KS	AAW	31-36 capped
6/21/2017	**246**	**247**	SLOPE	36	EOS	X	30	30	3:38 AM	3:43 AM	P			KS	AAW	
6/21/2017	**245**	**246**	SLOPE	4	66		30	30	3:40 AM	3:45 AM	P			KS	AAW	Bos-4 capped; 66-71 (eos)
6/21/2017	**243**	**246**	SLOPE	BOS	4		30	28	3:57 PM	4:02 PM	P			KS	AAW	4-9 capped
6/21/2017	**243**	**246**	SLOPE	9	EOS	X	30	29	4:07 PM	4:12 PM	P			KS	AAW	
6/22/2017	**245**	**252**	SLOPE	BOS	26		30	30	9:13 AM	9:18 AM	P			KS	AAW	
6/22/2017	**245**	**252**	SLOPE	26	32		30	30	9:18 AM	9:23 AM	P			KS	AAW	
6/22/2017	**245**	**252**	SLOPE	32	54		30	30	9:19 AM	9:24 AM	P			KS	AAW	54-57
6/22/2017	**245**	**252**	SLOPE	57	69		30	30	10:41 AM	10:46 AM	P			KS	AAW	
6/22/2017	**245**	**252**	SLOPE	69	EOS	X	-	-	-	-	-	X			AAW	
6/22/2017	**252**	**253**	SLOPE	BOS	EOS	X	30	30	10:20 AM	10:25 AM	P			KS	AAW	
6/22/2017	**252**	**254**	SLOPE	BOS	EOS	X	30	30	10:45 AM	10:50 AM	P			KS	AAW	
6/22/2017	**253**	**254**	SLOPE	BOS	6		30	30	10:27 AM	10:32 AM	P			KS	AAW	6-8 capped
6/22/2017	**253**	**254**	SLOPE	8	EOS	X	30	29	10:21 AM	10:26 AM	P			KS	AAW	
6/22/2017	**253**	**255**	SLOPE				-	-	-	-	-	X			AAW	
6/22/2017	**254**	**255**	SLOPE	BOS	EOS	X	30	30	10:55 AM	11:00 AM	P			KS	AAW	
6/22/2017	**255**	**256**	SLOPE	BOS	EOS	X	30	29	10:56 AM	11:01 AM	P			KS	AAW	
6/22/2017	**256**	**257**	SLOPE	BOS	EOS	X	30	30	10:57 AM	11:02 AM	P			KS	AAW	
6/22/2017	**257**	**258**	SLOPE	BOS	14		30	30	11:09 AM	11:14 AM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/22/2017	**257**	**258**	SLOPE	14	EOS	X	30	28	11:08 AM	11:13 AM	P			KS	AAW	
6/22/2017	**258**	**259**	SLOPE	BOS	EOS	X	30	30	11:21 AM	11:26 AM	P			KS	AAW	
6/22/2017	**259**	**260**	SLOPE	BOS	EOS	X	30	30	11:23 AM	11:28 AM	P			KS	AAW	
6/22/2017	**260**	**261**	SLOPE	BOS	EOS	X	30	28	11:24 AM	11:29 AM	P			KS	AAW	
6/22/2017	**261**	**262**	SLOPE	BOS	EOS	X	30	30	11:35 AM	11:40 AM	P			KS	AAW	
6/22/2017	**262**	**263**	SLOPE	BOS	EOS	X	30	30	11:36 AM	11:41 AM	P			KS	AAW	
6/22/2017	**263**	**264**	SLOPE	BOS	EOS	X	30	29	11:38 AM	11:43 AM	P			KS	AAW	
6/22/2017	**264**	**265**	SLOPE	BOS	EOS	X	30	29	11:43 AM	11:48 AM	P			KS	AAW	
6/22/2017	**265**	**266**	SLOPE	BOS	20		30	29	11:48 AM	11:53 AM	P			KS	AAW	
6/22/2017	**265**	**266**	SLOPE	20	EOS	X	30	28	11:58 AM	12:03 PM	P			KS	AAW	
6/22/2017	**266**	**267**	SLOPE	3	EOS	X	30	30	1:04 PM	1:09 PM	P			KS	AAW	0-3 capped
6/22/2017	**267**	**268**	SLOPE	BOS	EOS	X	30	30	1:05 PM	1:10 PM	P			KS	AAW	
6/22/2017	**268**	**269**	SLOPE	BOS	EOS	X	30	30	1:07 PM	1:12 PM	P			KS	AAW	
6/23/2017	**281**	**PS**	SLOPE	BOS	EOS	X	30	28	1:58 PM	2:03 PM	P			KS	AAW	
6/23/2017	**208**	**281**	SLOPE	BOS	EOS	X	30	30	1:57 PM	2:02 PM	P			KS	AAW	
6/23/2017	**281**	**282**	SLOPE	BOS	EOS	X	30	30	2:04 PM	2:09 PM	P			KS	AAW	
6/23/2017	**274**	**282**	SLOPE	BOS	28		30	30	2:05 PM	2:10 PM	P			KS	AAW	
6/23/2017	**274**	**282**	SLOPE	28	EOS	X	30	29	2:08 PM	2:13 PM	P			KS	AAW	
6/23/2017	**269**	**274**	SLOPE	BOS	EOS	X	30	29	2:22 PM	2:27 PM	P			KS	AAW	
6/23/2017	**274**	**281**	SLOPE	BOS	EOS	X	30	30	3:25 PM	3:30 PM	P			KS	AAW	
6/23/2017	**280**	**281**	SLOPE	BOS	EOS	X	30	30	4:01 PM	4:06 PM	P			KS	AAW	
6/23/2017	**273**	**281**	SLOPE	BOS	EOS	X	30	30	4:17 PM	4:22 PM	P			KS	AAW	
6/23/2017	**271**	**281**	SLOPE	BOS	EOS	X	30	30	4:16 PM	4:21 PM	P			KS	AAW	
6/23/2017	**274**	**280**	SLOPE	BOS	EOS	X	30	28	3:40 PM	3:45 PM	P			KS	AAW	
6/23/2017	**275**	**280**	SLOPE	BOS	EOS	X	30	29	3:38 PM	3:43 PM	P			KS	AAW	
6/23/2017	**277**	**279**	SLOPE	BOS	EOS	X	30	29	2:57 PM	3:02 PM	P			KS	AAW	
6/23/2017	**278**	**279**	SLOPE	BOS	16		30	30	2:37 PM	2:42 PM	P			KS	AAW	
6/23/2017	**278**	**279**	SLOPE	16	EOS	X	30	30	2:44 PM	2:49 PM	P			KS	AAW	
6/23/2017	**276**	**279**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
6/23/2017	**275**	**279**	SLOPE	BOS	EOS	X	-	-	-	-	-	X			AAW	
6/23/2017	**274**	**275**	SLOPE	BOS	39		30	30	3:39 PM	3:44 PM	P			KS	AAW	39-46 capped
6/23/2017	**274**	**275**	SLOPE	46	EOS	X	30	28	2:23 PM	2:28 PM	P			KS	AAW	
6/23/2017	**275**	**277**	SLOPE	BOS	EOS	X	30	30	2:59 PM	3:04 PM	P			KS	AAW	
6/23/2017	**275**	**276**	SLOPE	BOS	EOS	X	30	30	2:24 PM	2:29 PM	P			KS	AAW	
6/23/2017	**276**	**277**	SLOPE	BOS	EOS	X	30	30	2:45 PM	2:50 PM	P			KS	AAW	
6/23/2017	**276**	**278**	SLOPE	BOS	EOS	X	30	29	2:25 PM	2:30 PM	P			KS	AAW	
6/23/2017	**279**	**280**	SLOPE	BOS	EOS	X	30	29	3:23 PM	3:28 PM	P			KS	AAW	
6/23/2017	**272**	**279**	SLOPE	BOS	EOS	X	30	30	2:48 PM	2:53 PM	P			KS	AAW	
6/23/2017	**272**	**280**	SLOPE	BOS	EOS	X	30	29	3:42 PM	3:47 PM	P			KS	AAW	

Non-Destructive Test Log

Date	Seam			Station			Air Testing					Capped, No Air Test	V-box P/F	Test Tech	QA ID	Comments
	From	To	Loc	Station Start	Station End	End of Seam	Beg Pressure	End Pressure	Start Time	End Time	P/F					
6/23/2017	**272**	**273**	SLOPE	BOS	EOS	X	30	30	3:50 PM	3:55 PM	P			KS	AAW	
6/23/2017	**273**	**280**	SLOPE	BOS	EOS	X	30	30	3:59 PM	4:04 PM	P			KS	AAW	
6/23/2017	**271**	**273**	SLOPE	BOS	EOS	X	30	30	3:58 PM	4:03 PM	P			KS	AAW	
6/23/2017	**270**	**271**	SLOPE	BOS	EOS	X	30	30	4:18 PM	4:23 PM	P			KS	AAW	
6/23/2017	**270**	**273**	SLOPE	BOS	EOS	X	30	30	4:19 PM	4:24 PM	P			KS	AAW	
6/23/2017	**270**	**272**	SLOPE	BOS	28		30	30	3:56 PM	4:01 PM	P			KS	AAW	28-30 capped
6/23/2017	**270**	**272**	SLOPE	30	EOS	X	30	28	2:50 PM	2:55 PM	P			KS	AAW	
6/23/2017	**283**	**284**	SLOPE	BOS	EOS	X	30	30	3:20 PM	3:25 PM	P			KS	AAW	
6/23/2017	**270**	**283**	SLOPE	BOS	EOS	X	30	30	2:54 PM	2:59 PM	P			KS	AAW	
6/23/2017	**284**	**285**	SLOPE	BOS	EOS	X	30	30	3:21 PM	3:26 PM	P			KS	AAW	
6/23/2017	**283**	**285**	SLOPE	BOS	27		30	30	3:12 PM	3:17 PM	P			KS	AAW	27-28 capped
6/23/2017	**283**	**285**	SLOPE	28	EOS	X	30	29	3:13 PM	3:18 PM	P			KS	AAW	
6/24/2017	**235**	**236**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**250**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**249**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/24/2017	**248**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**247**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**246**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**244**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**252**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**253**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**255**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/24/2017	**256**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**257**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**258**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**259**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/24/2017	**260**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**261**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**262**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/24/2017	**263**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**264**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**265**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/24/2017	**266**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/24/2017	**267**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/24/2017	**268**	**PS**	SLOPE	BOS	EOS	X	-	-	-	-	-		P	WE	AAW	
6/26/2017	**269**	**PS**	Slope	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	
6/26/2017	**282**	**PS**	Slope	BOS	EOS	X	-	-	-	-	-		P	PP	AAW	

Sub-Appendix C.7

Destructive Sampling

Sub-Appendix C.7.1

Destructive Sample Log

Destructive Log

Destruct Number	From	To	Technician	Machine	Station	Field Test Date	Field P/F	Lab P/F	QA ID	Reason / Comments
1	3	4	KS	45	73	5/17/2017	P	P	AAW	
2	5	6	MAY	2650	93	5/17/2017	P	P	AAW	
3	13	14	MAY	2650	77	5/18/2017	P	P	AAW	
4	14	15	KS	45	107	5/18/2017	P	P	AAW	
5	24	25	KS	45	70	5/18/2017	P	P	AAW	
6	23	24	MAY	2650	97	5/18/2017	P	P	AAW	
7	27	28	KS	45	44	5/22/2017	P	P	AAW	
8	34	36	MAY	2650	2	5/22/2017	P	P	AAW	
9	40	41	MAY	2650	107	5/24/2017	P	P	AAW	
10	47	48	KS	45	53	5/24/2017	P	P	AAW	
11	50	51	KS	45	9	5/24/2017	P	P	AAW	
12	48	49	MAY	2650	2	5/24/2017	P	P	AAW	
13	61	62	MAY	2650	70	5/29/2017	P	P	AAW	
14	62	63	KS	45	2	5/29/2017	P	P	AAW	
15	71	72	MAY	2650	16	5/29/2017	P	P	AAW	
16	71	73	KS	45	108	5/29/2017	P	P	AAW	
17	10	WT	MAY	2650	15	5/31/2017	P	F	AAW	
17A	9	WT	MAY	2650	9	6/2/2017	P	F	BJD	
17A2	11	WT	MAY	2650	11	6/8/2017	P	P	BJD	
17B	10	WT	MAY	2650	5	6/2/2017	P	F	BJD	
17B2	8	WT	MAY	2650	3	6/8/2017	P	P	BJD	
18	52	WT	MAY	2650	26	5/31/2017	P	P	AAW	
19	84	85	KS	45	4	5/31/2017	P	F	AAW	
19A	84	85	KS	45	14	6/2/2017	P	F	BJD	
19A2	84	85	Ks	45	24	6/8/2017	P	P	BJD	
19B	83	84	KS	45	41	6/2/2017	P	F	BJD	
19B2	83	84	KS	45	31	6/8/2017	P	P	BJD	
20	86	87	MAY	25	67	5/31/2017	P	F	AAW	

Destructive Log

Destruct Number	From	To	Technician	Machine	Station	Field Test Date	Field P/F	Lab P/F	QA ID	Reason / Comments
20A	86	87	MAY	25	77	6/2/2017	P	F	BJD	
20A2	99	100	MAY	25	12	6/8/2017	P	F	BJD	
20A3	99	100	MAY	25	22	6/12/2017	P	F	BJD	
20A4	99	100	MAY	25	32	6/14/2017	P	F	BJD	
20A5	99	100	MAY	25	75	6/16/2017	F	-	BJV	
20A6	98	100	MAY	25	4	6/16/2017	P	F	BJV	
20A7	98	100	MAY	25	14	6/20/2017	P	P	BJV	
20B	86	87	MAY	25	57	6/2/2017	P	F	BJD	
20B2	86	87	MAY	25	47	6/8/2017	P	F	BJD	
20B3	86	87	MAY	25	37	6/12/2017	P	F	BJD	
20B4	86	87	MAY	25	27	6/14/2017	P	F	BJD	
20B5	86	87	MAY	25	3	6/16/2017	F	-	BJV	
20B6	85	86	MAY	25	50	6/16/2017	F	-	BJV	
20B7	85	86	MAY	25	30	6/16/2017	F	-	BJV	
21	92	94	MAY	45	3	5/31/2017	P	F	AAW	
21A	92	94	MAY	45	13	6/2/2017	P	F	BJD	
21A2	92	94	MAY	45	23	6/8/2017	P	P	BJD	
21B	91	93	MAY	45	42	6/2/2017	P	F	BJD	
21B2	91	93	MAY	45	32	6/8/2017	P	F	BJD	
21B3	91	93	MAY	45	22	6/12/2017	P	F	BJD	
21B4	91	93	MAY	45	12	6/14/2017	P	P	BJD	
22	95	96	MAY	45	172	5/31/2017	P	P	AAW	
23	100	101	KS	45	7	6/2/2017	P	F	BJD	
23A	100	101	KS	45	17	6/8/2017	P	P	BJD	
23B	97	99	KS	45	123	6/8/2017	P	P	BJD	
24	105	108	MAY	25	56	6/2/2017	P	P	BJD	
25	107	109	KS	45	8	6/2/2017	P	P	BJD	
26	121	122	KS	45	22	6/6/2017	P	P	BJD	

Destructive Log

Destruct Number	From	To	Technician	Machine	Station	Field Test Date	Field P/F	Lab P/F	QA ID	Reason / Comments
27	127	128	CC	25	2	6/6/2017	P	P	BJD	
28	144	146	KS	45	97	6/8/2017	P	P	BJD	
29	152	153	SP	25	56	6/8/2017	P	P	BJD	
30	22	143	KS	45	14	6/8/2017	P	P	BJD	
31	155	156	SP	25	147	6/8/2017	P	P	BJD	
32	158	159	SP	25	99	6/8/2017	P	P	BJD	
33	167	168	AG	2650	4	6/11/2017	P	P	BJD	
34	170	171	AG	2650	121	6/11/2017	P	P	BJD	
35	173	179	AG	2650	15	6/12/2017	P	P	BJD	
36	186	187	AG	2650	4	6/12/2017	P	P	BJD	TRIMMED OFF IN ANCHOR TRENCH
37	192	193	AG	2650	18	6/12/2017	P	P	BJD	
38	179	181	SP	2479	131	6/12/2017	P	P	BJD	
39	190	191	SP	2479	42	6/12/2017	P	P	BJD	
40	131	PS	AG	83	12	6/12/2017	P	P	BJD	
41	138	139	CC	25	43	6/12/2017	P	P	BJD	
42	197	198	SP	2479	67	6/12/2017	P	P	BJD	
43	203	204	SP	2479	7	6/12/2017	P	P	BJD	
44	198	200	AG	2650	42	6/12/2017	P	P	BJD	
45	R247	PS	CC	45	9	6/14/2017	P	P	BJD	
46	27	103	MAY	25	13	6/14/2017	P	P	BJD	
47	88	PS	MAY	60	13	6/14/2017	P	F	BJD	
47B	87	PS	MAY	60	14	6/16/2017	P	P	BJV	
48	211	212	SP	45	13	6/14/2017	P	P	BJD	
49	80	82	MAY	45	9	6/14/2017	P	P	BJD	
50	223	224	SP	45	47	6/16/2017	P	P	BJD	
51	228	229	CC	45	29	6/16/2017	P	P	BJD	
52	98	PS	AG	211	5	6/16/2017	P	F	BJV	
52B	97	PS	AG	211	15	6/20/2017	P	P	BJV	
53	159	160	SP	25	213	6/16/2017	P	P	BJV	

Destructive Log

Destruct Number	From	To	Technician	Machine	Station	Field Test Date	Field P/F	Lab P/F	QA ID	Reason / Comments
54	198	200	AG	2650	126	6/16/2017	P	P	BJV	
55	204	PS	SP	2479	12	6/16/2017	P	F	BJV	
55B	203	PS	SP	2479	14	6/20/2017	P	P	BJV	
56	207	208	SP	2650	105	6/16/2017	P	P	BJV	
57	220	222	CC	2650	18	6/16/2017	P	F	BJV	
57B	220	221	CC	2650	104	6/20/2017	P	P	BJV	
58	91	R479	SP	45	21	6/20/2017	P	P	BJV	
59	239	241	CC	45	6	6/22/2017	P	P	AAW	
60	235	237	SP	1406	50	6/22/2017	P	P	AAW	
61	249	250	SP	45	14	6/22/2017	P	F	AAW	
61A	249	250	SP	45	24	6/25/2017	P	P	AAW	
61B	249	250	SP	45	4	6/25/2017	P	P	AAW	
62	255	256	SP	45	13	6/22/2017	P	P	AAW	
63	271	273	SP	45	21	6/25/2017	P	P	AAW	
64	281	282	SP	45	14	6/25/2017	P	P	AAW	
65	237	244	CC	45	10	6/25/2017	P	P	AAW	
66	283	285	SP	45	18	6/25/2017	P	P	AAW	
67	249	PS	AG	112	4	6/26/2017	P	F	AAW	
67A	249	PS	AG	112	14	6/27/2017	P	F	BJV	
67B	250	PS	AG	112	10	6/27/2017	P	P	BJV	
68	248	PS	WL	15	10	6/26/2017	P	P	AAW	
69	135	Tie-in	AG	211	5	6/27/2017	P	P	BJV	

Sub-Appendix C.7.2

Destructive Sample Laboratory Testing Results

Date: 2017-05-18

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

e-mail:aweber@feezorengineering.com

Bill To:

Feezor Engineering. Inc.

Dear Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**28948**
Material(s) Tested:	(2) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 28948

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-1 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	117	123	121	129	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	117	126	121	122	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	
Shear						**Shear**
Shear Strength (ppi)	150	154	152	152	153	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	123	124	107	120	118	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	98	118	120	86	119	**108**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	150	152	152	154	153	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-05-19

Mail To:
Arron Weber
Feezor Engineering. Inc.

Bill To:

Feezor Engineering. Inc.

, ,

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**28973**
Material(s) Tested:	(4) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 28973

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-3 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	126	119	127	126	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	116	113	116	118	113	**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)	148	149	147	148	148	**148**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-4 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	126	122	123	119	123	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	121	119	114	126	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)	153	151	151	150	151	**151**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 28973

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-5 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	117	124	126	127	128	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SE	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	116	116	116	115	119	**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)	149	151	149	148	150	**149**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-6 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	129	133	132	120	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	119	116	116	121	119	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	149	149	148	148	150	**149**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-05-23

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29049**
Material(s) Tested:	(2) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29049

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-7 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	122	127	124	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)	121	125	114	125	123	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	162	159	160	161	**160**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-8 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	116	126	118	122	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	124	120	129	124	123	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	155	154	154	153	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-05-25

Mail To:
Arron Weber
Feezor Engineering. Inc.

Bill To:

Feezor Engineering. Inc.

, ,

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29137**
Material(s) Tested:	(4) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29137

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-9 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	118	112	119	103	**114**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	109	115	108	113	110	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	143	143	144	143	142	**143**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-10 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	123	118	122	115	120	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	122	120	125	121	121	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	146	146	142	148	145	**145**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29137

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-11 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	113	109	116	106	110	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	110	124	117	116	117	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SE	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	156	151	153	153	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-12 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	110	113	112	117	113	**113**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	105	118	119	121	113	**115**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	146	147	144	146	146	**146**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-05-30

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29214**
Material(s) Tested:	(4) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29214

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-13 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	127	127	126	126	**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)	118	123	122	117	125	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	150	151	151	151	152	**151**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-14 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	135	118	124	120	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	128	128	125	127	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	149	155	153	154	153	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29214

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-15 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	139	139	130	124	**131**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	129	126	126	126	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	148	148	146	147	147	**147**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-16 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	130	129	130	128	**130**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	114	124	123	128	125	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	153	155	153	155	151	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-01

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29291**
Material(s) Tested:	(6) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29291

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-17 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	95	112	114	115	**111**
Peel Incursion (%)	<5	100	<5	<5	100	
Peel Locus Of Failure Code	SIP	AD	SIP	SIP	AD	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	131	117	124	114	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	154	150	154	150	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-18 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	118	114	116	116	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	116	124	122	119	120	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	160	159	158	160	**160**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29291

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-19 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	127	110	126	120	132	**123**
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD	SE	SE	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	81	123	96	125	121	**109**
Peel Incursion (%)	90	90	90	<5	<5	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	157	156	154	153	153	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	82	129	63	65	55	**79**
Peel Incursion (%)	90	90	100	100	100	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD	AD	AD	
Peel NSF Failure Code	FTB	FTB	NON-FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	121	132	138	100	98	**118**
Peel Incursion (%)	90	90	20	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	154	153	155	140	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29291

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-21 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	126	129	113	128	**124**
Peel Incursion (%)	<5	<5	100	<5	100	
Peel Locus Of Failure Code	SIP	SIP	AD	SIP	AD	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	128	127	125	122	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	144	149	147	147	145	**146**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-22 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	128	124	133	130	132	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	125	128	123	126	130	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	149	150	151	150	151	**150**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-06

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29404**
Material(s) Tested:	(11) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29404

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-17A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	120	111	120	89	118	**112**
Peel Incursion (%)	100	100	<5	100	<5	
Peel Locus Of Failure Code	AD	AD	SIP	AD	SIP	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	61	101	125	108	126	**104**
Peel Incursion (%)	100	100	<5	100	<5	
Peel Locus Of Failure Code	AD	AD	SIP	AD	SE	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	160	156	159	161	**158**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-17B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	93	99	103	85	81	**92**
Peel Incursion (%)	100	100	100	100	100	
Peel Locus Of Failure Code	AD	AD	AD	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	121	123	126	121	128	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	164	160	160	162	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29404

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-19A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	116	116	122	114	**118**
Peel Incursion (%)	100	100	100	100	100	
Peel Locus Of Failure Code	AD	AD	AD	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	122	119	116	121	123	**120**
Peel Incursion (%)	100	100	100	100	100	
Peel Locus Of Failure Code	AD	AD	AD	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	158	162	159	159	162	**160**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-19B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	133	120	121	126	116	**123**
Peel Incursion (%)	<5	30	100	<5	100	
Peel Locus Of Failure Code	SE	AD-BRK	AD	SE	AD	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	135	135	117	132	114	**127**
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	AD	SE	SIP	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	162	165	162	161	166	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29404

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-20A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	94	125	92	128	114	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	38	111	110	123	109	**98**
Peel Incursion (%)	100	100	100	100	100	
Peel Locus Of Failure Code	AD	AD	AD	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	143	149	148	150	147	**147**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	118	116	111	114	**114**
Peel Incursion (%)	100	100	100	100	100	
Peel Locus Of Failure Code	AD	AD	AD	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	126	120	127	125	**124**
Peel Incursion (%)	100	100	100	100	100	
Peel Locus Of Failure Code	AD	AD	AD	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	162	164	162	162	161	**162**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29404

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-21A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	123	134	134	127	128	**129**
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SIP	SE	AD	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	128	122	125	122	120	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	163	159	162	158	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-21B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	125	136	128	122	129	**128**
Peel Incursion (%)	100	<5	<5	100	<5	
Peel Locus Of Failure Code	AD	SIP	SIP	AD	SIP	
Peel NSF Failure Code	NON-FTB	FTB	FTB	NON-FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	109	123	96	131	**117**
Peel Incursion (%)	<5	<5	30	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	AD-BRK	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	158	159	160	157	**158**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29404

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-23 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	115	126	127	134	133	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	99	126	118	124	127	**119**
Peel Incursion (%)	100	<5	100	<5	70	
Peel Locus Of Failure Code	AD	SIP	AD	SIP	AD-BRK	
Peel NSF Failure Code	NON-FTB	FTB	NON-FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	157	157	154	154	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-24 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	129	121	124	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)	133	119	111	129	133	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	159	164	160	159	163	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29404

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-25 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	149	145	144	143	144	**145**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	146	148	147	143	146	**146**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SE	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	158	161	160	157	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-07

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29455**
Material(s) Tested:	(2) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29455

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-26 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	137	143	131	125	123	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	115	122	129	128	123	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	152	148	150	152	149	**150**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-27 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	106	93	118	91	123	**106**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	113	111	116	115	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	152	155	151	153	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-09

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29535**
Material(s) Tested:	(15) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-17 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	131	127	142	117	130	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	123	126	132	132	131	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	153	154	152	150	155	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-17 B2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	135	130	143	115	132	**131**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	129	136	136	125	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	155	157	157	155	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-19 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	126	128	109	128	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	120	112	118	122	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	163	164	166	168	162	**165**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-19 B2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	133	112	116	122	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	138	74	126	126	131	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	166	164	166	162	**165**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-20 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	115	120	117	103	**115**
Peel Incursion (%)	100	100	<5	60	100	
Peel Locus Of Failure Code	AD	AD	SIP	AD-BRK	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	115	100	113	115	109	**110**
Peel Incursion (%)	85	90	<5	<5	100	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	SIP	SIP	AD	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	156	155	152	155	150	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20 B2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	110	112	113	112	111	**112**
Peel Incursion (%)	90	100	100	100	100	
Peel Locus Of Failure Code	AD-BRK	AD	AD	AD	AD	
Peel NSF Failure Code	FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	102	102	117	128	98	**109**
Peel Incursion (%)	100	100	90	90	90	
Peel Locus Of Failure Code	AD	AD	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	152	165	158	166	164	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-21 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	127	131	123	114	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	114	114	118	116	128	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	159	158	161	160	**160**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-21 B2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	127	134	141	129	**133**
Peel Incursion (%)	100	<5	100	<5	100	
Peel Locus Of Failure Code	AD	SIP	AD	SIP	AD	
Peel NSF Failure Code	NON-FTB	FTB	NON-FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	121	119	95	120	125	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	164	160	161	160	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-23 A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	134	142	125	133	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	128	125	134	131	**130**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	159	159	156	155	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-23 B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	121	127	123	125	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	132	125	126	122	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	159	157	160	154	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-28 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	127	126	122	127	129	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	129	135	135	138	127	**133**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	158	156	154	157	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-29 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	113	121	118	116	117	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	114	122	123	119	122	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	152	154	149	153	151	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-30 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	108	109	116	97	92	**104**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	138	139	133	134	137	**136**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	157	159	155	158	155	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-31 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	134	133	121	129	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	128	126	122	119	115	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	160	156	157	157	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29535

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-32 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	125	123	118	119	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	124	127	116	119	119	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	153	152	153	150	153	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-12

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29577**
Material(s) Tested:	(2) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29577

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-33 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	115	111	113	112	**113**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	115	108	107	109	111	**110**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	143	144	145	146	145	**145**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-34 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	129	121	113	120	128	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	129	125	123	122	108	**121**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	156	158	155	157	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-13

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29617**
Material(s) Tested:	(12) Heat Fusion Weld Seam(s) (1) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-20 A3 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	129	131	128	134	134	**131**
Peel Incursion (%)	<5	<5	<5	<5	100	
Peel Locus Of Failure Code	SE	SE	SE	SIP	AD	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	117	74	113	112	43	**92**
Peel Incursion (%)	90	100	90	30	100	
Peel Locus Of Failure Code	AD-BRK	AD	AD-BRK	AD-BRK	AD	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	157	157	154	154	154	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20 B3 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	112	114	114	115	**115**
Peel Incursion (%)	90	40	100	40	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	130	122	117	117	135	**124**
Peel Incursion (%)	90	100	100	90	90	
Peel Locus Of Failure Code	AD-BRK	AD	AD	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	NON-FTB	NON-FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	166	159	165	165	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-21 B3 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	120	142	128	125	144	**132**
Peel Incursion (%)	100	<5	100	<5	100	
Peel Locus Of Failure Code	AD	SIP	AD	SIP	AD	
Peel NSF Failure Code	NON-FTB	FTB	NON-FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	112	80	98	98	123	**102**
Peel Incursion (%)	90	90	90	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	164	165	165	164	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-35 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	141	139	140	143	128	**138**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SE	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	123	123	121	124	119	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	163	163	162	163	163	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-36 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	118	120	116	113	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	116	121	118	117	122	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	162	160	160	161	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-37 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	112	114	125	131	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	121	112	118	117	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	160	158	155	155	**158**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-38 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	131	128	127	129	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SE	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	128	132	127	131	127	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	162	164	163	166	166	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-39 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	123	122	129	117	119	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SE	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	128	119	121	133	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	165	163	162	163	165	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-41 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	127	131	127	127	133	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	122	112	121	119	120	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	149	154	153	151	152	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-42 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	119	119	113	122	114	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	115	116	123	127	128	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	156	154	152	152	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-43 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	140	138	133	144	135	**138**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	137	134	140	127	**133**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	163	164	164	165	165	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-44 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	128	125	124	127	127	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	119	115	118	122	119	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	153	156	154	156	154	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29617

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-40 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	136	140	135	117	129	**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)	170	166	162	145	122	**153**
Shear Elongation @ Break (%)	>50	28	25	23	22	

Date: 2017-06-15

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29693**
Material(s) Tested:	(7) Heat Fusion Weld Seam(s) (1) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29693

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-20 A4 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	123	117	126	120	123	**122**
Peel Incursion (%)	100	100	20	100	<5	
Peel Locus Of Failure Code	AD	AD	AD-BRK	AD	SIP	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	54	117	107	116	111	**101**
Peel Incursion (%)	100	100	<5	100	<5	
Peel Locus Of Failure Code	AD	AD	SIP	AD	SIP	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	157	157	157	157	155	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-20 B4 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	109	82	109	85	63	**90**
Peel Incursion (%)	90	90	90	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	106	119	142	117	132	**123**
Peel Incursion (%)	100	100	<5	100	60	
Peel Locus Of Failure Code	AD	AD	SE	AD	AD-BRK	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	167	166	167	168	**167**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29693

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-21 B4 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	130	137	133	136	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SE	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	107	117	123	129	103	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	165	165	165	160	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-45 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	115	123	108	111	109	**113**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	119	115	125	118	109	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	167	166	165	168	**166**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29693

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-46 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	143	152	151	146	149	**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	
Side: B						**Peel B**
Peel Strength (ppi)	153	152	151	159	152	**153**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	179	179	178	176	177	**178**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-48 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	131	131	126	134	130	**130**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	101	123	110	98	108	**108**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	165	165	166	166	**165**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29693

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-49 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	125	129	129	131	132	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	125	131	125	151	134	**133**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	176	178	176	174	176	**176**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29693

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-47 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	87	79	76	86	83	**82**
Peel Incursion (%)	20	100	30	20	90	
Peel Locus Of Failure Code	AD-BRK	AD	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	167	164	168	168	165	**166**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-19

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29799**
Material(s) Tested:	(8) Heat Fusion Weld Seam(s) (2) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29799

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-20 A6 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	120	130	98	116	120	**117**
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	AD	SE	SIP	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	113	114	114	112	115	**114**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	156	153	154	154	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-50 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	126	99	141	142	132	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	142	134	138	138	**137**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	164	164	167	163	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29799

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-51 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	130	129	144	132	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	134	131	131	133	131	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	162	160	161	159	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-53 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	111	120	110	119	117	**115**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	123	121	128	129	119	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	157	161	160	158	159	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29799

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-54 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	126	122	130	122	114	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	118	125	108	116	120	**117**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	161	160	158	157	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-55 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	123	122	132	133	**127**
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	AD	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	136	125	116	128	116	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	158	151	155	151	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29799

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-56 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	118	103	107	124	105	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	110	112	106	105	115	**110**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	149	154	152	151	152	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-57 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	132	131	136	119	**130**
Peel Incursion (%)	100	100	<5	100	100	
Peel Locus Of Failure Code	AD	AD	SIP	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	67	59	80	75	71	**70**
Peel Incursion (%)	<5	100	100	100	100	
Peel Locus Of Failure Code	SIP	AD	AD	AD	AD	
Peel NSF Failure Code	FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	152	158	148	154	148	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29799

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-47 B | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	124	129	122	134	150	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	167	171	172	171	169	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-52 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	127	81	142	119	89	**112**
Peel Incursion (%)	<5	100	<5	<5	<5	
Peel Locus Of Failure Code	SIP	AD	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	163	159	160	143	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	20.87	

Date: 2017-06-21

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29875**
Material(s) Tested:	(4) Heat Fusion Weld Seam(s) (1) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29875

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-20 A7 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	140	138	140	109	148	**135**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	141	139	132	139	149	**140**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	165	166	163	161	163	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-55 B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	145	130	140	137	135	**137**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	140	138	140	146	140	**141**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	163	161	166	157	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29875

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-57 B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	138	138	138	143	137	**139**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	144	140	140	146	147	**143**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	164	162	161	164	**162**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-58 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	131	133	137	132	134	**133**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	134	129	134	133	138	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	163	167	169	164	164	**165**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29875

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-52 B | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	133	127	133	72	137	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	174	169	169	166	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-23

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29945**
Material(s) Tested:	(4) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29945

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-59 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	94	130	111	125	132	**118**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	116	107	123	116	116	**116**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	151	152	155	151	151	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-60 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	125	128	126	129	129	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	118	119	117	121	119	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	152	152	153	154	153	**153**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29945

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-61 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	109	116	114	106	108	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	108	90	98	117	120	**107**
Peel Incursion (%)	<5	100	<5	<5	<5	
Peel Locus Of Failure Code	SIP	AD	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	156	158	155	153	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-62 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	125	124	125	122	132	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	142	128	140	139	141	**138**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	155	161	161	160	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-26

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**29992**
Material(s) Tested:	(6) Heat Fusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29992

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-63 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	133	132	126	128	122	**128**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	130	137	123	137	134	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	161	160	159	158	**160**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-64 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	125	124	126	124	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	127	132	131	128	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	160	161	160	159	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29992

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-65 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	138	143	146	142	**140**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	138	149	149	147	147	**146**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	162	163	164	165	167	**164**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-66 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	118	119	125	124	123	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	128	126	133	128	131	**129**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	158	159	159	158	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 29992

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-61A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	107	94	100	107	116	**105**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	92	106	79	126	114	**103**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	150	156	154	159	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-61B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	136	127	108	128	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	118	120	124	123	110	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	160	159	161	162	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-27

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**30058**
Material(s) Tested:	(2) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 30058

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-67 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	72	119	103	99	84	**95**
Peel Incursion (%)	70	<5	<5	<5	<5	
Peel Locus Of Failure Code	AD-BRK	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	155	152	152	156	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-68 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	113	118	83	98	95	**101**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	155	157	156	158	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Date: 2017-06-28

Mail To:
Arron Weber
Feezor Engineering. Inc.

, ,

Bill To:

Feezor Engineering. Inc.

e-mail:
aweber@feezorengineering.com dfeezor@feezorengineering.com bvits@feezorengineering.com

Dear Mr. Weber ,

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:	**Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap**
TRI Job Reference Number:	**30104**
Material(s) Tested:	(3) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (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

DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK
TRI Client: Feezor Engineering. Inc.
Project: Bridgeton Landfill - N. Quarry Phase 1A and 1B Cap

Material: 60 mil. HDPE
SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)
TRI Log#: 30104

	TEST REPLICATE NUMBER					
PARAMETER	1	2	3	4	5	MEAN
Sample ID: DS-67A | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	92	104	110	103	124	**107**
Peel Incursion (%)	100	<5	<5	<5	<5	
Peel Locus Of Failure Code	AD	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	NON-FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	168	161	164	160	**163**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-67B | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	99	91	94	120	106	**102**
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	163	155	149	154	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	
Sample ID: DS-69 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	148	118	99	148	145	**132**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SE	SE	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	159	160	159	161	157	**159**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Sub-Appendix C.7.3

Memorandum Concerning Destructive Failure Tracking

Engineering for a Better World
FEEZOR ENGINEERING, INC.

406 EAST WALNUT STREET
CHATHAM, IL 62629
(217) 483-3118 PHONE

MEMORANDUM

TO:	FROM:
Dan Feezor	Brad Vits
COMPANY: .	DATE:
Feezor Engineering, Inc.	8/22/2017
PROJECT NAME:	PROJECT NUMBER:
Phase 1A and 1B EVOH Final Cover	BT-125
RE:	CC:
Project Seaming – Destructive Failures	

☐ URGENT ☒ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Acceptance criteria for destructive testing was obtained both from the Cornerstone Work Plan entitled *Re: Response to October 19, 2016 Comments for EVOH Cover System Work Plan, North Quarry, Bridgeton Landfill, Bridgeton, Missouri Revision 2* dated October 20, 2016. Page 36 of this document specifies strength requirements for both Hot Wedge Seams and Extrusion Fillet Seams.

Hot Wedge Seams	Minimum value
Shear Strength (lb/in)	80
Peel Strength (lb/in)	60
Extrusion Fillet Seams	
Shear Strength (lb/in)	80
Peel Strength (lb/in)	52

In addition to these strength requirements, standard acceptance criteria from the Geosynthetic Research Institute specification *GRI Test Method GM19* was utilized to for determination of acceptable break codes with the exception of Separation in Plane (SIP) which is identified by the manufacturer to be an acceptable break code for the EVOH material. Language from this specification states that a test should be acceptable if 4 out of 5 specimens meet the minimum required value and the fifth sample meets 80% of the required strength. It also states that a code AD-Brk should only be deemed as a failure if it is >25%.

This was the pass-fail criteria that was used in evaluating seams.

Out of 69 destructive samples that were obtained, 11 of these samples did not meet the above mentioned pass-fail criteria and were bound in accordance with the Project CQA Plan that was included with the Cornerstone Work Plan.

The following lists failing samples and the corrective action that was taken for bounding the failing sample:

DS-17

DS-17 was noted as a failure due to 2 specimens exhibiting full peel incursion.

Sample ID: DS-17 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	121	95	112	114	115	**111**
Peel Incursion (%)	<5	100	<5	<5	100	
Peel Locus Of Failure Code	SIP	AD	SIP	SIP	AD	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	127	131	117	124	114	**123**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	154	150	154	150	**152**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was eventually bound to samples DS-17B2 (before initial sample) and DS-17A2 (after initial sample).

Sample ID: DS-17 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	131	127	142	117	130	129
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	123	126	132	132	131	129
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	153	154	152	150	155	153
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Sample ID: DS-17 B2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	135	130	143	115	132	131
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	129	136	136	125	132
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	155	157	157	155	156
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-17B2 and DS-17A2 was capped with and non-destructively tested in its entirety.

DS-19

DS-19 was noted as a failure due to 3 specimens exhibiting a partial peel incursion >25% and 1 specimen exhibiting full peel incursion.

Sample ID: DS-19 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	127	110	126	120	132	123
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SE	SE	AD	SE	SE	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	81	123	96	125	121	109
Peel Incursion (%)	90	90	90	<5	<5	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	157	156	154	153	153	155
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was eventually bound to samples DS-19B2 (before initial sample) and DS-19A2 (after initial sample).

Sample ID: DS-19 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	126	128	109	128	123
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	120	120	112	118	122	118
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	163	164	166	168	162	165
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Sample ID: DS-19 B2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	133	112	116	122	123
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	138	74	126	126	131	119
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	166	166	164	166	162	165
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-19B2 and DS-19A2 was capped and non-destructively tested in its entirety.

DS-20

DS-20 was noted as a failure due to 6 specimens exhibiting partial peel incursion >25% and 3 specimens exhibiting full peel incursion.

Sample ID: DS-20 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	82	129	63	65	55	79
Peel Incursion (%)	90	90	100	100	100	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD	AD	AD	
Peel NSF Failure Code	FTB	FTB	NON-FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	121	132	138	100	98	118
Peel Incursion (%)	90	90	20	90	90	
Peel Locus Of Failure Code	AD-BRK	AD-BRK	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	154	153	155	140	152
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was eventually bound to sample DS-20A7 (after initial sample). No passing sample was able to be obtained from seaming produced prior to the failing sample.

Sample ID: DS-20 A7 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	140	138	140	109	148	135
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	141	139	132	139	149	140
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	165	166	163	161	163	164
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seaming between the beginning of production for this technician/machine and DS-20A7 was capped and non-destructively tested in its entirety.

DS-21

DS-21 was noted as a failure due to 2 specimens exhibiting full peel incursion.

Sample ID: DS-21 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	122	126	129	113	128	124
Peel Incursion (%)	<5	<5	100	<5	100	
Peel Locus Of Failure Code	SIP	SIP	AD	SIP	AD	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	128	127	125	122	126
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	144	149	147	147	145	146
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was eventually bound to sample DS-21B4 (before initial sample) and DS-21A2 (after initial sample).

Sample ID: DS-21 A2 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	127	131	123	114	125
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	114	114	118	116	128	118
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	159	158	161	160	160
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Sample ID: DS-21 B4 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	132	130	137	133	136	134
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SIP	SE	SE	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	107	117	123	129	103	116
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	165	165	165	160	163
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-21B4 and DS-21A2 was capped and non-destructively tested in its entirety.

DS-23

DS-23 was noted as a failure due to 1 specimen exhibiting a partial peel incursion of >25% and 2 specimens exhibiting full peel incursion.

Sample ID: DS-23 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	115	126	127	134	133	**127**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	99	126	118	124	127	**119**
Peel Incursion (%)	100	<5	100	<5	70	
Peel Locus Of Failure Code	AD	SIP	AD	SIP	AD-BRK	
Peel NSF Failure Code	NON-FTB	FTB	NON-FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	155	157	157	154	154	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was bound to sample DS-23B (before initial sample) and DS-23A (after initial sample)

Sample ID: DS-23 A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	134	134	142	125	133	**134**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	132	128	125	134	131	**130**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	159	159	156	155	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Sample ID: DS-23 B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	121	127	123	125	**125**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	126	132	125	126	122	**126**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	159	157	160	154	**157**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-23B and DS-23A was capped and non-destructively tested in its entirety.

DS-47

DS-47 was noted as a failure due to 2 specimens exhibiting partial peel incursion >25% and 1 specimen exhibiting full peel incursion.

Sample ID: DS-47 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	87	79	76	86	83	82
Peel Incursion (%)	20	100	30	20	90	
Peel Locus Of Failure Code	AD-BRK	AD	AD-BRK	AD-BRK	AD-BRK	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	167	164	168	168	165	166
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was bound to sample DS-47B (before initial sample). Due to the proximity of the initial sample to the end of the technican/machine production, no sample was obtained after the initial sample.

Sample ID: DS-47 B | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	124	129	122	134	150	132
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	167	171	172	171	169	170
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-47B and the end of production for this particular technician/machine combination was capped and non-destructively tested in its entirety.

DS-52

DS-52 was noted as a failure due to 1 specimen exhibiting full peel incursion.

Sample ID: DS-52 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	127	81	142	119	89	112
Peel Incursion (%)	<5	100	<5	<5	<5	
Peel Locus Of Failure Code	SIP	AD	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	163	159	160	143	157
Shear Elongation @ Break (%)	>50	>50	>50	>50	20.87	

This specimen was bound to sample DS-52B (before initial sample). Due to the proximity of the initial sample to the end of the technician/machine production, no sample was obtained after the initial sample.

Sample ID: DS-52 B | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	133	127	133	72	137	**120**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	170	174	169	169	166	**170**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-52B and the end of production for this particular technician/machine combination was capped and non-destructively tested in its entirety.

DS-55

DS-55 was noted as a failure due to 1 specimen exhibiting full peel incursion.

Sample ID: DS-55 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	124	123	122	132	133	**127**
Peel Incursion (%)	<5	<5	100	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	AD	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	NON-FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	136	125	116	128	116	**124**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	154	158	151	155	151	**154**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was bound to sample DS-55B (before initial sample). Due to proximity of the initial sample to the end of the technician/machine production, no sample was obtained after the initial sample.

Sample ID: DS-55 B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	145	130	140	137	135	**137**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	140	138	140	146	140	**141**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	163	161	166	157	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-55B and the end of production for this particular technician/machine combination was capped and non-destructively tested in its entirety.

DS-57

DS-57 was noted as a failure due to 8 specimens exhibiting full peel incursion.

Sample ID: DS-57 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	130	132	131	136	119	130
Peel Incursion (%)	100	100	<5	100	100	
Peel Locus Of Failure Code	AD	AD	SIP	AD	AD	
Peel NSF Failure Code	NON-FTB	NON-FTB	FTB	NON-FTB	NON-FTB	
Side: B						**Peel B**
Peel Strength (ppi)	67	59	80	75	71	70
Peel Incursion (%)	<5	100	100	100	100	
Peel Locus Of Failure Code	SIP	AD	AD	AD	AD	
Peel NSF Failure Code	FTB	NON-FTB	NON-FTB	NON-FTB	NON-FTB	
Shear						**Shear**
Shear Strength (ppi)	152	158	148	154	148	152
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was bound to sample DS-57B (before initial sample). Due to proximity of the initial sample to the end of the technician/machine production, no sample was obtained after the initial sample.

Sample ID: DS-57 B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	138	138	138	143	137	139
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	144	140	140	146	147	143
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	160	164	162	161	164	162
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-57B and the end of production for this particular technician/machine combination was capped and non-destructively tested in its entirety.

DS-61

DS-61 was noted as a failure due to 1 specimen exhibiting full peel incursion.

Sample ID: DS-61 | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	109	116	114	106	108	**111**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	108	90	98	117	120	**107**
Peel Incursion (%)	<5	100	<5	<5	<5	
Peel Locus Of Failure Code	SIP	AD	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	NON-FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	158	156	158	155	153	**156**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The specimen was bound to samples DS-61B (before initial specimen) and DS-61A (after initial specimen).

Sample ID: DS-61A | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	107	94	100	107	116	**105**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	92	106	79	126	114	**103**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	150	156	154	159	**155**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

Sample ID: DS-61B | Weld: Heat Fusion						
Side: A						**Peel A**
Peel Strength (ppi)	112	136	127	108	128	**122**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						**Peel B**
Peel Strength (ppi)	118	120	124	123	110	**119**
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SIP	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	161	160	159	161	162	**161**
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-61B and DS-61B was capped and non-destructively tested in its entirety.

DS-67

DS-67 was noted as a failure due to 1 specimen exhibiting partial peel incursion 25%.

Sample ID: DS-67 | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	72	119	103	99	84	95
Peel Incursion (%)	70	<5	<5	<5	<5	
Peel Locus Of Failure Code	AD-BRK	SIP	SIP	SIP	SIP	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						**Shear**
Shear Strength (ppi)	156	155	152	152	156	154
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

This specimen was bound to sample DS-67B (before initial sample). Due to proximity of the initial sample to the end of the technician/machine production, no sample was obtained after the initial sample.

Sample ID: DS-67B | Weld: Single Extrusion						
Side: Peel						**Peel**
Peel Strength (ppi)	99	91	94	120	106	102
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	163	155	149	154	156
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

All seam between DS-67B and the end of production for this particular technician/machine combination was capped and non-destructively tested in its entirety.

Sub-Appendix C.8

Geomembrane Repair Log

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
1	3	4					39		PATCH	5/17/2017	14:00	2	1	PH	211	5/22/2017	BS	AW	P		
2	3	4					73		PATCH	5/17/2017	14:10	4	2	PH	211	5/22/2017	BS	AW	P	1	
3	20	21					0	25	PATCH	5/18/2017	17:00	25	2	MAY	211	5/22/2017	BS	AW	P		
4	1	18					13		PATCH	5/22/2017	9:05	2	2	MAY	211	5/22/2017	BS	AW	P		
5	33	35					15		PATCH	5/25/2017	11:27	3	2	AG	112	5/26/2017	MAM	AW	P		
6	37	39					74		PATCH	5/25/2017	13:05	2	1	AG	112	5/26/2017	MAM	AW	P		
7	48	49	50				0		PATCH	5/25/2017	14:12	3	2	AG	112	5/26/2017	MAM	AW	P		
8	49	50	51				0		PATCH	5/25/2017	14:20	3	2	AG	112	5/26/2017	MAM	AW	P		
9	1	18	19				0		PATCH	5/22/2017	9:10	2	1	MAY	211	5/22/2017	BS	AW	P		
10	5	6					93		PATCH	5/17/2017	14:05	4	2	PH	211	6/16/2017	BS	AW	P	2	
11	9						42		PATCH	5/18/2017	16:10	5	5	MAY	211	6/28/2017	PP	AW	P		
12	11	12	13				0		PATCH	5/18/2017	16:25	2	2	MAY	211	6/28/2017	PP	AW	P		
13	12	13	14				0		PATCH	5/18/2017	16:30	2	2	MAY	211	6/28/2017	PP	AW	P		
14	21	22					61		PATCH	5/18/2017	17:28	5	5	MAY	211	5/26/2017	WE	AW	P		
15	24	25					70		PATCH	5/22/2017	11:05	4	2	MAY	211	5/26/2017	WE	AW	P	5	
16	25	26	27				55	63	PATCH	5/22/2017	11:30	8	3	MAY	211	5/26/2017	WE	AW	P		
17	27	28					31		PATCH	5/25/2017	9:40	5	5	AG	112	5/26/2017	WE	AW	P		
18	27	28					35		PATCH	5/25/2017	9:50	4	4	AG	112	5/26/2017	WE	AW	P		
19	27	28					43		PATCH	5/25/2017	10:18	5	3	AG	112	5/26/2017	WE	AW	P	7	
20	28	29					33		PATCH	5/25/2017	10:20	5	3	AG	112	5/26/2017	WE	AW	P		
21	27	28	29						PATCH	5/25/2017	10:25	5	4	AG	112	5/26/2017	WE	AW	P		
22	28	29					26		PATCH	5/25/2017	9:52	2	1	AG	112	5/26/2017	WE	AW	P		
23	28	29	32						PATCH	5/25/2017	10:36	3	2	AG	112	5/26/2017	BS	AW	P		
24	28	31	32						PATCH	5/25/2017	10:47	2	2	AG	112	5/26/2017	WE	AW	P		
25	33	34	35						PATCH	5/25/2017	10:51	2	2	AG	112	5/26/2017	BS	AW	P		
26	34	35	36						PATCH	5/25/2017	11:00	2	2	AG	112	5/26/2017	BS	AW	P		
27	38	39					40		PATCH	5/25/2017	11:53	5	2	AG	112	5/26/2017	BS	AW	P		
28	38						40		PATCH	5/25/2017	11:53	4	4	AG	112	5/26/2017	BS	AW	P		
29	36	37	38						PATCH	5/25/2017	11:10	5	3	AG	112	5/26/2017	BS	AW	P		
30	37	38	39						PATCH	5/25/2017	11:17	2	2	AG	112	6/28/2017	PP	AW	P		
31	40	41					107		PATCH	5/25/2017	13:09	4	2	AG	112	6/28/2017	PP	AW	P	9	
32	43						23		PATCH	5/25/2017	16:01	1	1	AG	112	5/26/2017	BS	AW	P		
33	41	43					24	26	PATCH	5/25/2017	15:50	2	2	AG	112	5/26/2017	BS	AW	P		CAPS 41/43 24'-26'
34	41	42	43				0	8	PATCH	5/25/2017	15:50	5	3	AG	112	5/26/2017	BS	AW	P		CAPS 42/43 8'-16'
35	42	43	46				8	16	PATCH	5/25/2017	15:50	9	2	AG	112	5/26/2017	BS	AW	P		CAPS 42/43 0'-8'
36	42	45	46						PATCH	5/25/2017	16:20	3	2	AG	112	5/26/2017	BS	AW	P		
37	42	44	45				2	16	PATCH	5/25/2017	15:02	3	14	AG	112	5/26/2017	WE	AW	P		CAPS 45/44 2'-16'
38	44	45	47				0	2	PATCH	5/25/2017	15:02	6	3	AG	112	5/26/2017	WE	AW	P		CAPS 45/44 0'-2'
39	44	47					5		PATCH	5/25/2017	15:02	3	6	AG	112	5/26/2017	WE	AW	P		
40	44	47					9		PATCH	5/25/2017	15:02	4	3	AG	112	5/26/2017	WE	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
41	47	48					53		PATCH	5/25/2017	13:50	4	2	AG	112	5/26/2017	WE	AW	P	10	
42	51	52	53						PATCH	5/26/2017	9:47	2	1	AG	112	5/26/2017	WE	AW	P		
43	53	54					54		PATCH	5/26/2017	9:40	6	4	AG	112	5/26/2017	WE	AW	P		
44	51	53	54						PATCH	5/26/2017	9:52	3	2	AG	112	5/26/2017	WE	AW	P		
45	49	51	54						PATCH	5/26/2017	9:55	3	2	AG	112	5/26/2017	WE	AW	P		
46	49	54	55						PATCH	5/26/2017	10:00	2	1	AG	112	5/26/2017	WE	AW	P		
47	48	49	55						PATCH	5/26/2017	10:05	5	2	AG	112	5/26/2017	WE	AW	P	12	
48	48	55	56						PATCH	5/26/2017	10:10	2	1	AG	112	5/26/2017	WE	AW	P		
49	48	56	58						PATCH	5/26/2017	10:15	3	1	AG	112	5/26/2017	WE	AW	P		
50	47	48	58						PATCH	5/26/2017	10:20	4	2	AG	112	5/26/2017	WE	AW	P		
51	47	58	59						PATCH	5/26/2017	11:01	3	2	AG	112	5/26/2017	WE	AW	P		
52	56	57	58						PATCH	5/26/2017	10:30	1	1	AG	112	6/28/2017	PP	AW	P		
53	57	58	59						PATCH	5/26/2017	10:35	1	1	AG	112	6/28/2017	PP	AW	P		
54	47	59	60						PATCH	5/26/2017	11:06	2	2	AG	112	5/26/2017	WE	AW	P		
55	45	47	60						PATCH	5/26/2017	11:14	3	1	AG	112	5/26/2017	WE	AW	P		
56	45	46	60	61					PATCH	5/26/2017	11:20	2	1	AG	112	5/26/2017	BS	AW	P		
57	61						50'S	8'E	PATCH	5/26/2017	13:20	5	5	AG	112	5/26/2017	WE	AW	P		
58	61	62					70		PATCH	5/26/2017	11:47	5	2	AG	112	5/26/2017	WE	AW	P	13	
59	46	61	65	62					PATCH	5/26/2017	11:34	2	4	AG	112	5/26/2017	WE	AW	P		
60	62	63	65						PATCH	5/26/2017	11:36	2	1	AG	112	5/26/2017	WE	AW	P		
61	43	46	65						PATCH	5/26/2017	13:15	2	3	AG	112	5/26/2017	WE	AW	P		
62	43	63	65						PATCH	5/26/2017	13:45	2	1	AG	112	5/26/2017	WE	AW	P		
63	41	43	63						PATCH	5/26/2017	11:36	2	3	MAY	60	5/26/2017	WE	AW	P		
64	41	63	64	68					PATCH	5/26/2017	11:30	5	2	MAY	60	5/26/2017	WE	AW	P		
65	64	66	68	69					PATCH	5/26/2017	11:49	4	3	MAY	60	5/26/2017	WE	AW	P		
66	40	41	68						PATCH	5/26/2017	11:20	4	2	MAY	60	5/26/2017	WE	AW	P		
67	39	40	68	69					PATCH	5/26/2017	11:15	12	2	MAY	60	5/26/2017	WE	AW	P		CAPS 39/68
68	38	39	69						PATCH	5/26/2017	10:59	10	2	MAY	60	5/26/2017	WE	AW	P		CAPS 39/69 0'-10'
69	70	72					21		PATCH	5/26/2017	15:20	8	3	MAY	60	6/23/2017	WE	AW	P		
70	71	72					9		PIPE BOOT	5/26/2017	16:30	11	7	AG	112	6/24/2017	WE	AW	P		
71	67	70	71	72					PIPE BOOT	5/26/2017	14:00	7	2	MAY	60	5/26/2017	WE	AW	P	15	
72	66	67	69	70					PATCH	5/26/2017	13:15	5	2	MAY	60	5/26/2017	WE	AW	P		
73	66	67					120		PATCH	5/26/2017	13:20	2	1	MAY	60	5/26/2017	WE	AW	P		
74	66						120 N	8 E	PATCH	5/26/2017	13:25	2	1	MAY	60	5/26/2017	WE	AW	P		
75	67						25 N	4 E	PATCH	5/26/2017	14:25	5	5	AG	112	5/26/2017	WE	AW	P		
76	71	73					35		PATCH	5/26/2017	15:24	2	8	AG	112	5/26/2017	WE	AW	P		
77	73	74					33		PATCH	5/26/2017	15:26	1	1	AG	112	6/1/2017	WE	AW	P		
78	73	74	75						PATCH	5/26/2017	15:29	3	2	AG	112	6/1/2017	WE	AW	P		
79	71	73					108		PATCH	5/26/2017	14:25	4	2	MAY	60	5/26/2017	WE	AW	P	16	
80	71	72	73						PATCH	5/26/2017	10:13	2	1	MAY	60	5/26/2017	WE	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
81	74	75	76						PATCH	5/26/2017	15:37	3	2	AG	112	6/1/2017	WE	AW	P		
82	18	WT					5	9	PATCH	5/27/2017	12:58	5	2	AG	112	5/30/2017	WE	AW	P		
83	1	18	WT						PATCH	5/27/2017	11:55	2	1	AG	112	5/30/2017	WE	AW	P		
84	1	WT					5		PATCH	5/27/2017	11:45	3	2	AG	112	5/30/2017	WE	AW	P		
85	2	WT					12	16	PATCH	5/27/2017	11:35	7	2	AG	112	5/30/2017	WE	AW	P		
86	3	WT					13	16	PATCH	5/27/2017	11:24	5	2	AG	112	5/30/2017	WE	AW	P		
87	3	4	WT						PATCH	5/27/2017	11:17	4	2	AG	112	5/30/2017	WE	AW	P		
88	4	5	WT						PATCH	5/27/2017	11:13	4	2	AG	112	5/30/2017	WE	AW	P		
89	5	6	7	WT					PATCH	5/27/2017	11:05	21	2	AG	112	5/30/2017	WE	AW	P		CAPS 6-WT
90	7	WT					15		PATCH	5/27/2017	11:03	4	1	AG	112	5/30/2017	WE	AW	P		
91	7	8	WT						PATCH	5/27/2017	13:08	6	2	AG	112	5/30/2017	WE	AW	P		
92	8	WT					6		PATCH	5/27/2017	1:12	2	1	AG	112	5/30/2017	WE	AW	P		
93	8	9	WT						PATCH	5/27/2017	13:15	3	1	AG	112	5/30/2017	WE	AW	P		
94	9	WT					6		PATCH	5/27/2017	13:20	2	1	AG	112	5/30/2017	WE	AW	P		
95	9	10	WT				6		PATCH	5/27/2017	13:26	5	2	AG	112	5/30/2017	WE	AW	P	15	
96	10	WT					6		PATCH	5/27/2017	13:30	1	1	AG	112	5/30/2017	WE	AW	P		
97	10	11	WT						PATCH	5/30/2017	13:35	1	1	AG	211	5/30/2017	WE	AW	P		
98	11	12	WT						PATCH	5/30/2017	8:30	6	1	AG	211	5/30/2017	WE	AW	P		
99	12	14	WT						PATCH	5/30/2017	8:35	7	1	AG	211	5/30/2017	WE	AW	P		
100	14	15	WT						PATCH	5/30/2017	8:49	6	1	AG	211	5/30/2017	WE	AW	P		
101	15	16	WT						PATCH	5/30/2017	9:09	8	2	AG	211	5/30/2017	WE	AW	P		
102	16	17	WT						PATCH	5/30/2017	9:15	6	2	AG	211	5/30/2017	WE	AW	P		
103	17	20	WT						PATCH	5/30/2017	9:45	6	2	AG	211	5/30/2017	WE	AW	P		
104	20	21	WT						PATCH	5/30/2017	10:08	6	1	AG	211	5/30/2017	WE	AW	P		
105	21	22	WT				0	4	PATCH	5/30/2017	10:35	5	2	AG	211	5/30/2017	WE	AW	P		
106	22	23	WT				0	5	PATCH	5/30/2017	10:55	6	2	AG	211	5/30/2017	WE	AW	P		
107	23	24	WT				0	4	PATCH	5/30/2017	11:00	5	1	AG	211	5/30/2017	WE	AW	P		
108	24	25	WT				0	4	PATCH	5/30/2017	11:05	5	1	AG	211	5/30/2017	WE	AW	P		
109	25	WT					3	5	PATCH	5/30/2017	11:20	2	2	AG	211	5/30/2017	WE	AW	P		
110	26	27	29	WT					PATCH	5/30/2017	11:35	9	3	AG	211	5/30/2017	WE	AW	P		CAPS 26-WT 0'-3'// 27-WT 0'-4'// 29-WT
111	29	30	WT				19	21	PATCH	5/30/2017	13:25	3	3	AG	211	5/30/2017	WE	AW	P		
112	30	WT					8	10	PATCH	5/30/2017	13:15	5	2	AG	211	5/30/2017	WE	AW	P		
113	30	33	WT				0	3	PATCH	5/30/2017	13:48	4	2	AG	211	5/30/2017	WE	AW	P		
114	33	35	WT						PATCH	5/30/2017	13:52	2	1	AG	211	5/30/2017	WE	AW	P		
115	35	36	WT				0	2	PATCH	5/30/2017	13:55	3	2	AG	211	5/30/2017	WE	AW	P		
116	36	37	WT				15	18	PATCH	5/30/2017	14:02	4	2	AG	211	5/30/2017	WE	AW	P		
117	32	31	WT				0	3	PATCH	5/30/2017	13:38	4	2	AG	211	5/30/2017	WE	AW	P		
118	39	40	WT						PATCH	5/30/2017	14:11	3	2	AG	211	5/30/2017	WE	AW	P		
119	40	41	WT				0	6	PATCH	5/30/2017	14:32	7	2	AG	211	5/30/2017	WE	AW	P		
120	41	42	WT				0	3	PATCH	5/30/2017	14:35	4	2	AG	211	5/30/2017	WE	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
121	42	44	WT				0	3	PATCH	5/30/2017	14:45	4	2	AG	211	5/30/2017	WE	AW	P		
122	44	47	WT				0	2	PATCH	5/30/2017	15:01	3	2	AG	211	5/30/2017	WE	AW	P		
123	47	48	WT				0	4	PATCH	5/30/2017	15:14	5	3	AG	211	5/30/2017	WE	AW	P		
124	48	WT					14		PATCH	5/30/2017	15:18	1	5	AG	211	5/30/2017	WE	AW	P		
125	48	49	WT						PATCH	5/30/2017	15:24	2	1	AG	211	5/30/2017	WE	AW	P		
126	50	51	WT				0	3	PATCH	5/30/2017	15:31	4	2	AG	211	5/30/2017	WE	AW	P	11	
127	51	52	WT				23	28	PATCH	5/30/2017	15:49	8	3	AG	211	5/30/2017	WE	AW	P	18	
128	52	53	WT						PATCH	5/30/2017	15:42	3	2	AG	211	5/30/2017	WE	AW	P		
129	53	WT					7	11	PATCH	5/30/2017	16:02	3	2	AG	211	5/30/2017	WE	AW	P		
130	53	54	WT				54	22	PATCH	5/30/2017	16:01	3	2	MAY	60	5/30/2017	WE	AW	P		
131	54	PS					7	10	PATCH	5/30/2017	15:40	4	2	MAY	60	5/30/2017	WE	AW	P		
132	54	55	PS						PATCH	5/30/2017	15:35	1	1	MAY	60	5/30/2017	WE	AW	P		
133	55	56	PS						PATCH	5/30/2017	15:32	1	1	MAY	60	5/30/2017	WE	AW	P		
134	56	57	PS						T-CAP	5/30/2017	15:59	1	1	MAY	60	5/30/2017	WE	BD	P		
135	57	59	PS						T-CAP	5/30/2017	15:27	1	2	MAY	60	5/30/2017	WE	BD	P		
136	59	60	PS						T-CAP	5/30/2017	15:22	1	1	MAY	60	5/30/2017	WE	BD	P		
137	60	61	PS						T-CAP	5/30/2017	15:20	1	1	MAY	60	5/30/2017	WE	BD	P		
138	61	62	PS						T-CAP	5/30/2017	15:15	1	1	MAY	60	5/30/2017	WE	BD	P		
139	62	63	PS						T-CAP	5/30/2017	15:10	3	1	MAY	60	5/30/2017	WE	BD	P		
140	62	63					2		T-CAP	5/26/2017	13:50	4	2	AG	112	5/30/2017	WE	BD	P	14	
141	63	64	PS						T-CAP	5/26/2017	15:05	3	2	MAY	60	5/30/2017	WE	BD	P		
142	64	66	PS						T-CAP	5/30/2017	14:57	2	1	MAY	60	5/30/2017	WE	BD	P		
143	66	67	PS						T-CAP	5/30/2017	14:55	2	1	MAY	60	5/30/2017	WE	BD	P		
144	67	71	PS						T-CAP	5/30/2017	14:53	1	1	MAY	60	5/30/2017	WE	BD	P		
145	71	PS					10		PATCH	5/30/2017	14:52	2	1	MAY	60	5/30/2017	WE	BD	P		
146	71	73	PS						T-CAP	5/30/2017	14:50	2	1	MAY	60	5/30/2017	WE	BD	P		
147	73	74	PS						T-CAP	5/30/2017	14:46	2	2	MAY	60	5/30/2017	WE	BD	P		
148	74	76	PS						T-CAP	5/30/2017	14:43	4	1	MAY	60	5/30/2017	WE	BD	P		
149	76	77	PS						T-CAP	5/30/2017	14:40	2	1	MAY	60	5/30/2017	WE	BD	P		
150	77	78	PS						T-CAP	5/30/2017	14:37	1	1	MAY	60	5/30/2017	WE	BD	P		
151	78	79	PS						T-CAP	5/30/2017	14:33	1	1	MAY	60	5/30/2017	WE	BD	P		
152	79	80	PS						T-CAP	5/30/2017	14:30	2	1	MAY	60	5/30/2017	WE	BD	P		
153	80	81	PS						T-CAP	6/1/2017	12:00	5	6	AG	211	6/2/2017	CC	BD	P		
154	81	82					6		PIPE BOOT	5/31/2017	16:24	4	5	AG	211	6/2/2017	CC	BD	P		
155	80	81	82						T-CAP	6/1/2017	11:45	2	7	AG	211	6/2/2017	CC	BD	P		
156	80	82	83						T-CAP	6/1/2017	11:31	3	1	AG	211	6/2/2017	CC	BD	P		
157	79	80	83						T-CAP	6/1/2017	11:28	5	2	AG	211	6/2/2017	CC	BD	P		
158	83								PATCH	6/1/2017	10:54	2	1	AG	211	6/2/2017	CC	BD	P		SE 75 (E from 83/84 and S from 79/83)
159	79	83	84						T-CAP	6/1/2017	10:55	3	2	AG	211	6/2/2017	CC	BD	P		
160	78	79	84						T-CAP	6/1/2017	10:49	3	2	AG	211	6/2/2017	CC	BD	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
161	84	85					14		PATCH											19	COVERED BY R626
162	78	84	85						T-CAP	6/1/2017	10:45	5	2	AG	211	6/2/2017	CC	BD	P		
163	85	86					16		PIPE BOOT	5/31/2017	15:37	4	7	AG	211	6/2/2017	CC	BD	P		
164	78	85	86						T-CAP	6/1/2017	10:30	2	4	AG	211	6/2/2017	CC	BD	P		
165	86								PIPE BOOT	5/31/2017	15:24	7	4	AG	211	6/2/2017	CC	BD	P		10S 7E (S from 77/86 and E from 86/87)
166	77	78	86						T-CAP	6/1/2017	10:22	3	2	AG	211	6/2/2017	CC	BD	P		
167	77	86	87						T-CAP	6/1/2017	10:13	3	2	AG	211	6/1/2017	RX	BD	P		
168	76	77	87	88					T-CAP	6/1/2017	10:08	3	2	AG	211	6/1/2017	RX	BD	P		4 WAY
169	76	88	89						T-CAP	6/1/2017	10:03	3	2	AG	211	6/1/2017	RX	BD	P		
170	75	76	89						T-CAP	6/1/2017	9:59	3	2	AG	211	6/1/2017	WE	BD	P		
171	75	89	90						T-CAP	6/1/2017	9:54	3	2	AG	211	6/1/2017	WE	BD	P		
172	73	75	90	91					T-CAP	6/1/2017	9:29	3	2	AG	211	6/1/2017	RX	BD	P		4 WAY
173	91	93					42		PATCH											21B	COVERED BY R429
174	73	91	93						T-CAP	6/1/2017	9:23	3	2	AG	211	6/1/2017	RX	BD	P		
175	72	73	93						T-CAP	6/1/2017	9:17	3	2	AG	211	6/1/2017	WE	BD	P		
176	72	93	94						T-CAP	6/1/2017	9:10	3	2	AG	211	6/1/2017	WE	BD	P		
177	70	72	94						T-CAP	6/1/2017	8:57	3	2	AG	211	6/1/2017	RX	BD	P		
178	70	94					11		PATCH	6/1/2017	8:53	4	2	AG	211	6/1/2017	RX	BD	P		
179	38	69	70	94					T-CAP	6/1/2017	8:40	7	2	AG	211	6/1/2017	WE	BD	P		
180	38	94	95						T-CAP	6/1/2017	8:33	2	2	AG	211	6/1/2017	WE	BD	P		
181	36	38	95						T-CAP	6/1/2017	8:28	3	2	AG	211	6/1/2017	RX	BD	P		
182	36	95	96						T-CAP	6/1/2017	8:24	5	2	AG	211	6/1/2017	RX	BD	P	22	
183	95	96					160		PATCH	6/1/2017	7:51	3	2	AG	211	6/1/2017	WE	BD	P		
184	96								PIPE BOOT	6/6/2017	14:52	6	5	AG	211	6/10/2017	WE	BD	P		4' S: 97 // 102' W PS
185	34	36	96						T-CAP	6/6/2017	15:22	5	2	AG	211	6/10/2017	WE	BD	P	8	
186	34	96	97						T-CAP	6/6/2017	15:26	6	3	AG	211	6/10/2017	WE	BD	P		
187	33	34	97						T-CAP	6/6/2017	15:41	4	2	AG	211	6/10/2017	WE	BD	P		
188	30	97	99						T-CAP	6/6/2017	15:45	4	1	AG	211	6/10/2017	WE	BD	P		
189	30	33	99						T-CAP	6/6/2017	15:51	2	2	AG	211	6/10/2017	WE	BD	P		
190	30	99	100						T-CAP	6/7/2017	11:00	2	2	AG	211	6/10/2017	WE	BD	P		
191	29	30	100						T-CAP	6/7/2017	10:48	2	2	AG	211	6/10/2017	WE	BD	P		
192	29	100	101						T-CAP	6/7/2017	10:54	3	3	AG	211	6/10/2017	WE	BD	P		
193	100	101							PATCH	6/7/2017	11:36	4	2	AG	211	6/28/2017	PP	AW	P	23A	
194	29	31	32	101	102				CAP	6/2/2017	10:36	10	3	MAY	60	6/20/2017	WE	BD	P		
195	27	31	102	103					CAP	6/2/2017	10:47	4	3	MAY	60	6/28/2017	PP	AW	P		
196	24	25	27	103	106				CAP	6/2/2017	10:17	5	4	MAY	60	6/10/2017	WE	BD	P		
197	23	24	106	107					CAP	6/2/2017	9:55	2	2	MAY	60	6/10/2017	WE	BD	P		
198	106	107	108	109					CAP	6/2/2017	9:35	3	2	MAY	60	6/10/2017	WE	BD	P		
199	105	106	108						T-CAP	6/2/2017	9:40	1	1	MAY	60	6/10/2017	WE	BD	P		
200	103	105	106						T-CAP	6/2/2017	9:49	2	1	MAY	60	6/24/2017	WE	BD	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
201	102	103	104	105					CAP	6/2/2017	8:05	8	2	MAY	60	6/10/2017	WE	BD	P		
202	102	103							PATCH	6/7/2017	10:43	2	9	AG	211	6/10/2017	WE	BD	P		7' W 103-105
203	101	102	104						T-CAP	6/2/2017	8:14	3	2	MAY	60	6/10/2017	WE	BD	P		
204	108								PATCH	6/2/2017	8:52	5	6	MAY	60	6/10/2017	WE	BD	P		7' N 105// 17' E 106// TMP 27
205	105	108							PATCH	6/2/2017	9:19	4	2	MAY	60	6/10/2017	WE	BD	P	24	
206	109								PATCH	6/2/2017	9:10	5	4	MAY	60	6/24/2017	WE	BD	P		4' E 143// 52' E 107// TMP 18
207	97	98	PS						T-CAP	6/1/2017	17:00	2	2	AG	211	6/2/2017	CC	BD	P		
208	96	97					13		PATCH	6/1/2017	16:11	4	3	AG	211	6/2/2017	CC	BD	P		
209	96	97	PS						T-CAP	6/1/2017	16:44	8	2	AG	211	6/2/2017	CC	BD	P		
210	96	PS					7		PATCH	6/1/2017	16:44	6	3	AG	211	6/2/2017	CC	BD	P		
211	95	96	PS						T-CAP	6/1/2017	15:34	2	1	AG	211	6/2/2017	CC	BD	P		
212	95	96					9		PATCH	6/1/2017	15:59	3	2	AG	211	6/2/2017	CC	BD	P		
213	95	PS					14		PATCH	6/1/2017	15:34	2	2	AG	211	6/2/2017	CC	BD	P		
214	92	95	PS						T-CAP	6/1/2017	15:21	2	2	AG	211	6/2/2017	CC	BD	P		
215	92	94					3		PATCH	6/1/2017	14:38	4	2	AG	211	6/2/2017	CC	BD	P		
216	92	PS					10		PATCH	6/1/2017	14:38	2	1	AG	211	6/2/2017	CC	BD	P		
217	92	PS					5		PIPE BOOT	6/1/2017	14:32	7	6	AG	211	6/2/2017	CC	BD	P		
218	91	93	PS						T-CAP	6/1/2017	14:31	2	2	AG	211	6/2/2017	CC	BD	P		
219	91	PS					10		PATCH	6/1/2017	14:30	3	1	AG	211	6/2/2017	CC	BD	P		
220	90	91	PS						T-CAP	6/1/2017	10:32	2	2	MAY	60	6/2/2017	CC	BD	P		
221	89	90	PS						T-CAP	6/1/2017	14:00	2	1	AG	211	6/2/2017	CC	BD	P		
222	89	PS					6		PATCH	6/1/2017	13:46	4	3	AG	211	6/2/2017	CC	BD	P		
223	88	89	PS						T-CAP	6/1/2017	13:40	2	2	AG	211	6/2/2017	CC	BD	P		
224	87	88	PS						T-CAP	6/1/2017	10:07	2	1	AG	211	6/2/2017	CC	BD	P		
225	87	88					77		PATCH	5/31/2017	17:06	3	2	AG	211	6/2/2017	CC	BD	P		
226	87	88					58		PATCH	5/31/2017	17:03	3	3	AG	211	6/2/2017	CC	BD	P		
227	86	87					67		PATCH	5/31/2017	15:54	4	2	AG	211	6/2/2017	CC	BD	P		
228	86	87	PS						PIPE BOOT	6/1/2017	9:58	6	3	MAY	60	6/2/2017	CC	BD	P		
229	86	PS					11		PATCH	6/1/2017	9:30	1	1	MAY	60	6/2/2017	CC	BD	P		
230	86	PS					5		PIPE BOOT	6/1/2017	9:17	5	3	MAY	60	6/2/2017	CC	BD	P		
231	85	86	PS						T-CAP	6/1/2017	9:05	1	1	MAY	60	6/2/2017	CC	BD	P		
232	85	86					56		PATCH	5/31/2017	15:49	3	2	AG	211	6/1/2017	WE	BD	P		
233	85	86					41		PATCH	5/31/2017	15:43	4	2	AG	211	6/1/2017	WE	BD	P		
234	84	85	PS						T-CAP	6/1/2017	8:56	1	1	MAY	60	6/2/2017	CC	BD	P		
235	83	84	PS						T-CAP	6/1/2017	8:13	1	1	MAY	60	6/2/2017	CC	BD	P		
236	83	PS					13		PATCH	6/1/2017	8:12	3	2	MAY	60	6/2/2017	CC	BD	P		
237	82	83					28		PATCH	5/31/2017	16:00	3	2	AG	211	6/2/2017	CC	BD	P		
238	82	83	PS						T-CAP	6/1/2017	8:08	2	2	MAY	60	6/2/2017	CC	BD	P		
239	82	PS					17		PATCH	6/1/2017	8:06	4	4	MAY	60	6/2/2017	CC	BD	P		
240	82	PS					10		PATCH	6/1/2017	8:00	2	1	MAY	60	6/2/2017	CC	BD	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
241	82	PS					3		PATCH	5/31/2017	16:46	4	1	AG	211	6/2/2017	CC	BD	P		
242	81	82	PS						T-CAP	5/31/2017	16:36	3	2	AG	211	6/2/2017	CC	BD	P		
243	110	PS	137				0		PATCH	6/6/2017	13:55	2	2	AG	211	6/10/2017	WE	AW	P		
244	SEE PANEL LAYOUT DIAGRAM									SEE PANEL SEAMING LOGS						SEE NON-DESTRUCTIVE TEST LOGS					
245																					
246																					
247																					
248																					
249																					
250																					
251																					
252																					
253																					
254																					
255																					
256																					
257																					
258																					
259	136	210	211						PATCH	6/13/2017	16:41	2	2	AG	112	6/18/2017	WE	AW	P		
260	136	139	140						PATCH	6/6/2017	10:55	2	1	AG	211	6/10/2017	WE	AW	P		
261	136	140	141						PATCH	6/6/2017	11:00	2	2	AG	211	6/10/2017	WE	AW	P		
262	136	211	212						PATCH	6/13/2017	16:45	2	2	AG	112	6/16/2017	WE	AW	P		
263	136	212	213						PATCH	6/13/2017	16:57	3	2	AG	112	6/16/2017	WE	AW	P		
264	136	213	214						PATCH	6/13/2017	17:04	2	2	AG	112	6/16/2017	WE	AW	P		
265	136	141	142						PATCH	6/6/2017	11:04	1	1	AG	211	6/10/2017	WE	AW	P		
266	136	142					6		PATCH	6/13/2017	17:07	2	2	AG	112	6/28/2017	PP	AW	P		
267	141						24' N	4' W	PATCH	6/6/2017	11:32	4	4	AG	211	6/10/2017	WE	AW	P		
268	138	139					38		PATCH	6/6/2017	10:56	1	1	AG	211	6/10/2017	WE	AW	P		
269	138	139					40	45	PATCH	6/14/2017	7:27	5	2	AG	112	6/16/2017	WE	AW	P		
270	110	137					78		PATCH	6/6/2017	9:55	2	1	AG	211	6/10/2017	WE	AW	P		
271	116	117	118						PATCH	6/6/2017	9:42	2	1	AG	211	6/10/2017	WE	AW	P		
272	272	117	118	119					PATCH	6/6/2017	9:32	2	2	AG	211	6/10/2017	WE	AW	P		
273	120	121					3		PATCH	6/6/2017	9:38	3	2	AG	211	6/10/2017	WE	AW	P		
274	124	125					16		PATCH	6/6/2017	9:00	4	2	AG	211	6/10/2017	WE	AW	P		
275	130	131					34	41	Bead	6/6/2017	8:44	7	8	AG	211	6/10/2017	WE	AW	P		
276	132	139	134				34	41	PATCH	6/6/2017	8:48	3	2	AG	211	6/10/2017	WE	AW	P		
277	135	EX					CORNER		PATCH	6/6/2017	8:50	4	2	AG	211	6/10/2017	WE	AW	P		
278	134	135	EX						PATCH	6/6/2017	8:54	2	2	AG	211	6/10/2017	WE	AW	P		
279	133	134	EX						PATCH	6/6/2017	8:57	5	2	AG	211	6/10/2017	WE	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
280	133	134					17		PATCH	6/6/2017	9:05	3	2	AG	211	6/10/2017	WE	AW	P		
281	132	133					18		PATCH	6/6/2017	9:13	2	1	AG	211	6/10/2017	WE	AW	P		
282	132	133	PS						PATCH	6/6/2017	9:18	1	1	AG	211	6/10/2017	WE	AW	P		
283	131	132	PS						PATCH	6/3/2017	16:49	6	2	AG	83	6/10/2017	WE	AW	P	40	
284	130	131	PS						PATCH	6/3/2017	16:40	2	2	AG	83	6/10/2017	WE	AW	P		
285	129	130	PS						PATCH	6/3/2017	16:30	1	1	AG	83	6/10/2017	WE	AW	P		
286	127	129	PS						PATCH	6/3/2017	16:20	2	1	AG	83	6/10/2017	WE	AW	P		
287	128	127	PS						PATCH	6/3/2017	16:12	2	1	AG	83	6/10/2017	WE	AW	P		
288	126	128	PS						PATCH	6/3/2017	16:02	2	1	AG	83	6/10/2017	WE	AW	P		
289	126	127	128						PATCH	6/3/2017	15:45	7	2	AG	83	6/10/2017	WE	AW	P	27	
290	125	126	PS						PATCH	6/3/2017	15:38	2	2	AG	83	6/10/2017	WE	AW	P		
291	124	125	PS						PATCH	6/3/2017	15:15	1	1	AG	83	6/10/2017	WE	AW	P		
292	123	124	PS				0	9	PATCH	6/3/2017	15:03	10	2	AG	83	6/10/2017	WE	AW	P		0-9 ON 125
293	122	123	PS						PATCH	6/3/2017	14:34	1	1	AG	83	6/10/2017	WE	AW	P		
294	121	122	PS						PATCH	6/3/2017	14:02	2	2	AG	83	6/10/2017	WE	AW	P		
295	121	122					22		PATCH	6/6/2017	9:23	3	2	AG	211	6/10/2017	WE	AW	P	26	
296	120	121					61		PATCH	6/3/2017	13:52	3	2	AG	83	6/10/2017	WE	AW	P		
297	120	121	PS						PATCH	6/3/2017	13:45	1	1	AG	83	6/10/2017	WE	AW	P		
298	119	120	PS						PATCH	6/3/2017	13:35	1	1	AG	83	6/10/2017	WE	AW	P		
299	117	119	PS						PATCH	6/3/2017	11:44	1	1	AG	83	6/10/2017	WE	AW	P		
300	116	117	PS						PATCH	6/3/2017	11:35	1	1	AG	83	6/10/2017	WE	AW	P		
301	115	116	PS						PATCH	6/3/2017	11:22	2	1	AG	83	6/10/2017	WE	AW	P		
302	114	115	PS						PATCH	6/3/2017	11:10	2	2	AG	83	6/10/2017	WE	AW	P		
303	113	114	PS						PATCH	6/3/2017	10:36	2	2	AG	83	6/10/2017	WE	AW	P		
304	112	113	PS						PATCH	6/3/2017	10:28	2	2	AG	83	6/10/2017	WE	AW	P		
305	137	209	PS				0	13	T-CAP	6/6/2017	13:41	13	2	AG	211	6/10/2017	WE	AW	P		
306	110	111					27		PATCH	6/6/2017	10:01	2	1	AG	211	6/10/2017	WE	AW	P		
307	110	111	PS				0		PATCH	6/3/2017	9:59	2	2	AG	83	6/10/2017	WE	AW	P		
308	110	111					72		PATCH	6/3/2017	10:01	2	1	AG	83	6/10/2017	WE	AW	P		
309	111	PS					6		PATCH	6/3/2017	10:19	1	1	AG	83	6/10/2017	WE	AW	P		
310	111	112	PS				66		PATCH	6/3/2017	10:25	2	2	AG	83	6/10/2017	WE	AW	P		
311	110	111					60		PATCH	6/6/2017	10:26	3	2	AG	211	6/10/2017	WE	AW	P		
312	110	137					24		PATCH	6/6/2017	10:25	2	1	AG	211	6/10/2017	WE	AW	P		
313	110	137					38		PATCH	6/6/2017	10:25	2	1	AG	211	6/10/2017	WE	AW	P		
314	137	209					CORNER		PATCH	6/13/2017	16:23	2	2	AG	112	6/16/2017	BS	AW	P		
315	136	137	209						PATCH	6/13/2017	16:30	3	2	AG	112	6/16/2017	BS	AW	P		
316	136	209	210						PATCH	6/13/2017	16:36	3	2	AG	112	6/16/2017	BS	AW	P		
317	136	137	138						PATCH	6/6/2017	10:30	3	2	AG	211	6/10/2017	WE	AW	P		
318	138	139					15	20	PATCH	6/6/2017	10:45	5	2	AG	211	6/10/2017	WE	AW	P	41	
319	136	138	139						PATCH	6/6/2017	10:40	1	1	AG	211	6/10/2017	WE	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
320	22	23	107	143					PATCH	6/7/2017	11:44	5	3	AG	211	6/10/2017	WE	AW	P		
321	22	143					14		PATCH	6/23/2017	9:48	5	2	AG	211	6/23/2017	WE	AW	P	30	
322	21	22	143	144					PATCH	6/7/2017	13:19	3	2	AG	112	6/10/2017	WE	AW	P		
323	20	21	144	146					PATCH	6/7/2017	13:29	5	2	AG	112	6/10/2017	WE	AW	P		
324	144	146					95	100	PATCH	6/10/2017	13:14	5	2	AG	112	6/16/2017	BS	AW	P	28	
325	143	144					113	115	PATCH	6/10/2017	13:10	2	1	AG	112	6/16/2017	BS	AW	P		
326	107	109	143						PATCH	6/10/2017	13:06	2	1	AG	112	6/16/2017	BS	AW	P		
327	107	109					7	10	PATCH	6/2/2017	9:30	3	2	AG	211	6/10/2017	WE	AW	P	25	
328	107	109					10	12	PATCH	6/10/2017	12:58	2	2	AG	112	6/16/2017	BS	AW	P		
329	109	143					52	53	PATCH	6/10/2017	13:21	2	4	AG	112	6/16/2017	BS	AW	P		
330	109	143					99	104	PIPE BOOT	6/10/2017	13:23	5	3	AG	112	6/28/2017	PP	AW	P		
331	144	145	146						PATCH	6/7/2017	16:47	3	2	AG	112	6/28/2017	PP	AW	P		
332	105	108					122	126	PATCH	6/2/2017	15:03	6	4	AG	83	6/28/2017	PP	AW	P		
333	109						7' N	124' E	PATCH	6/2/2017	15:24	1	1	AG	83	6/16/2017	BS	AW	P		
334	143						8' N	168' E	PATCH	6/7/2017	17:02	2	1	AG	112	6/16/2017	BS	AW	P		
335	143	PS							PIPE BOOT	6/7/2017	13:32	7	8	AG	112	6/16/2017	BS	AW	P		
336	17	20	146	148					PATCH	6/7/2017	13:57	3	2	AG	112	6/10/2017	WE	AW	P		
337	16	17	146	148					PATCH	6/7/2017	14:02	2	2	AG	112	6/10/2017	WE	AW	P		
338	15	16	149	150					PIPE BOOT	6/7/2017	14:24	7	6	AG	112	6/16/2017	BS	AW	P		
339	150	338							PIPE BOOT	6/7/2017	14:24	4	2	AG	112	6/16/2017	BS	AW	P		
340	149	150	PE2						PATCH	6/6/2017	17:40	3	2	AG	211	6/16/2017	BS	AW	P		
341	148	149	PE2						PATCH	6/6/2017	17:01	4	2	AG	211	6/10/2017	WE	AW	P		
342	148	PE1	PE2						PATCH	6/6/2017	17:05	1	1	AG	211	6/16/2017	PP	AW	P		
343	147	148	PE1						PATCH	6/6/2017	17:25	1	1	AG	211	6/16/2017	PP	AW	P		
344	146	147	148						PATCH	6/6/2017	17:20	3	2	AG	211	6/16/2017	PP	AW	P		
345	147	151	PE1						PATCH	6/6/2017	17:30	4	3	AG	211	6/16/2017	PP	AW	P		
346	150	151	PE1	PE2					PATCH	6/6/2017	17:34	5	2	AG	211	6/16/2017	PP	AW	P		
347	14	15	150	151					PATCH	6/7/2017	14:40	3	2	AG	112	6/16/2017	BS	AW	P		
348	14	15	R347						PATCH	6/7/2017	14:42	3	2	AG	112	6/16/2017	BS	AW	P	4	
349	141	151	152						PATCH	6/7/2017	15:36	3	2	AG	112	6/16/2017	BS	AW	P		
350	147	152					14		PATCH	6/7/2017	15:39	2	1	AG	112	6/16/2017	BS	AW	P		
351	146	147	152						PATCH	6/7/2017	16:22	4	2	AG	112	6/16/2017	BS	AW	P		
352	152	153					22	27	PIPE BOOT	6/7/2017	16:38	6	4	AG	112	6/16/2017	BS	AW	P		
353	146	152	153						PATCH	6/7/2017	16:48	2	1	AG	112	6/16/2017	BS	AW	P		
354	145	146	153						PATCH	6/7/2017	16:52	2	1	AG	112	6/16/2017	BS	AW	P		
355	145	153	155						PATCH	6/7/2017	16:55	2	1	AG	112	6/16/2017	BS	AW	P		
356	155	156					38	42	PATCH	6/10/2017	13:48	4	2	AG	112	6/16/2017	BS	AW	P		
357	155	156					65	68	PATCH	6/10/2017	13:40	3	2	AG	112	6/16/2017	BS	AW	P		
358	152	153					56	62	PATCH	6/10/2017	13:54	6	2	AG	112	6/16/2017	BS	AW	P	29	
359	155	156					147		PATCH	6/10/2017	14:04	6	2	AG	112	6/16/2017	BS	AW	P	31	

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
360	153	154	155						PATCH	6/7/2017	15:24	1	1	AG	112	6/16/2017	BS	AW	P		
361	152	153	154						PATCH	6/7/2017	15:27	2	3	AG	112	6/16/2017	BS	AW	P		
362	13	14	151	152					PATCH	6/7/2017	14:50	9	3	AG	112	6/16/2017	BS	AW	P	3	
363	11	13	152	154					PATCH	6/7/2017	15:03	4	2	AG	112	6/16/2017	BS	AW	P		
364	10	11	154	155					PATCH	6/7/2017	15:21	5	2	AG	112	6/16/2017	BS	AW	P		
365	9	10	155						PATCH	6/10/2017	16:45	2	1	AG	112	6/16/2017	BS	AW	P		
366	9	155	156						PATCH	6/10/2017	16:41	3	3	AG	112	6/16/2017	BS	AW	P		
367	8	9	156						PATCH	6/10/2017	16:37	7	2	AG	112	6/16/2017	BS	AW	P		
368	8	156	158						PATCH	6/10/2017	16:41	3	2	AG	112	6/16/2017	BS	AW	P		
369	7	8	158	159					PATCH	6/10/2017	16:21	1	1	AG	112	6/16/2017	BS	AW	P		
370	7	158	159						PATCH	6/10/2017	16:17	1	1	AG	112	6/16/2017	BS	AW	P		
371	6	7	159	161					PATCH	6/10/2017	16:14	9	3	AG	112	6/16/2017	BS	AW	P		
372	6	159	161						PATCH	6/10/2017	16:02	2	2	AG	112	6/16/2017	BS	AW	P		
373	159	161	160						PATCH	6/10/2017	16:04	2	2	AG	112	6/16/2017	BS	AW	P		
374	158	159					99		PATCH	6/10/2017	14:14	6	2	AG	112	6/16/2017	BS	AW	P	32	
375	157	158	159						PATCH	6/10/2017	14:22	3	2	AG	112	6/16/2017	BS	AW	P		
376	156	157	158						PATCH	6/10/2017	14:18	2	1	AG	112	6/16/2017	BS	AW	P		
377	162	163	170						PATCH	6/10/2017	14:30	6	3	AG	112	6/16/2017	BS	AW	P		
378	162	163					55	57	PIPE BOOT	6/27/2017	11:25	6	8	WL	15	6/27/2017	PP	AW	P		
379	160	162					163	169	PIPE BOOT	6/16/2017	10:43	6	8	WL	211	6/19/2017	BS	AW	P		
380	163	164	165						PATCH	6/10/2017	14:52	4	2	AG	112	6/16/2017	BS	AW	P		
381	160	161	162						PATCH	6/10/2017	16:07	2	2	AG	112	6/16/2017	BS	AW	P		
382	5	6	161	162					PATCH	6/10/2017	15:58	8	2	AG	112	6/16/2017	BS	AW	P		
383	5						53 E	11 N	PATCH	6/10/2017	16:54	1	1	AG	112	6/16/2017	BS	AW	P		
384	4	5	162						PATCH	6/10/2017	15:50	2	2	AG	112	6/16/2017	BS	AW	P		
385	4	162	163						PATCH	6/10/2017	15:48	2	2	AG	112	6/16/2017	BS	AW	P		
386	3	4	163						PATCH	6/10/2017	15:43	2	2	AG	112	6/16/2017	BS	AW	P		
387	3	165	165						PATCH	6/12/2017	10:41	8	4	AG	112	6/16/2017	BS	AW	P		
388	2	3	165						PATCH	6/10/2017	15:38	2	2	AG	112	6/16/2017	BS	AW	P		
389	2	165	166						PATCH	6/10/2017	15:34	2	2	AG	112	6/16/2017	BS	AW	P		
390	1	2	166						PATCH	6/10/2017	15:31	2	2	AG	112	6/16/2017	BS	AW	P		
391	1	16	167						PATCH	6/10/2017	15:24	4	2	AG	112	6/16/2017	BS	AW	P		
392	1	19	167						PATCH	6/10/2017	15:14	2	2	AG	112	6/16/2017	BS	AW	P		
393	19	167	169						PATCH	6/10/2017	15:11	4	8	AG	112	6/16/2017	BS	AW	P		
394	18	19					5	12	PATCH	6/12/2017	9:42	7	5	AG	112	6/16/2017	BS	AW	P		
395	165						12 W	11 N	PATCH	6/10/2017	15:05	1	1	AG	112	6/16/2017	BS	AW	P		
396	165						5 W	11 N	PATCH	6/10/2017	14:54	2	1	AG	112	6/16/2017	BS	AW	P		
397	164	165	166						PATCH	6/10/2017	14:56	2	1	AG	112	6/16/2017	BS	AW	P		
398	167	168					4		PATCH	6/12/2017	10:48	5	2	AG	112	6/16/2017	BS	AW	P	33	
399	167	168	170						PATCH	6/12/2017	10:51	3	2	AG	112	6/16/2017	BS	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
400	166	167	170						PATCH	6/10/2017	14:45	3	2	AG	112	6/16/2017	BS	AW	P		
401	164	166	170						PATCH	6/10/2017	14:40	2	1	AG	112	6/16/2017	BS	AW	P		
402	163	164	170						PATCH	6/10/2017	14:34	2	1	AG	112	6/16/2017	BS	AW	P		
403	171	179	181						PATCH	6/12/2017	13:30	3	2	AG	112	6/16/2017	BS	AW	P		
404	171	179					6		PATCH	6/12/2017	13:26	5	2	AG	112	6/16/2017	BS	AW	P		
405	171	173	179						PATCH	6/12/2017	13:16	3	2	AG	112	6/16/2017	BS	AW	P		
406	173	179					15		PATCH	6/12/2017	11:46	5	2	AG	112	6/16/2017	BS	AW	P	35	
407	173	174	179						PATCH	6/12/2017	11:53	2	2	AG	112	6/16/2017	BS	AW	P		
408	170	171					121		PATCH	6/12/2017	11:39	6	2	AG	112	6/16/2017	BS	AW	P	34	
409	171	172	173				121		PATCH	6/12/2017	10:57	2	2	AG	112	6/16/2017	BS	AW	P		
410	172	173	174						PATCH	6/12/2017	11:02	2	1	AG	112	6/16/2017	BS	AW	P		
411	169	170	178						PATCH	6/12/2017	8:52	6	6	AG	112	6/16/2017	BS	AW	P		
412	169	178					5		PATCH	6/12/2017	8:44	2	1	AG	112	6/16/2017	BS	AW	P		
413	168	169	170						PATCH	6/12/2017	10:45	2	1	AG	112	6/16/2017	BS	AW	P		
414	175	176	179						PATCH	6/12/2017	11:26	3	2	AG	112	6/19/2017	PP	AW	P		
415	174	175	179						PATCH	6/12/2017	11:31	2	2	AG	112	6/19/2017	PP	AW	P		
416	176	179	180						PATCH	6/12/2017	11:16	5	2	AG	112	6/19/2017	PP	AW	P		
417	176	178	180						PATCH	6/12/2017	11:11	4	4	AG	112	6/19/2017	PP	AW	P		
418	179	180							PIPE BOOT	6/27/2017	10:58	10	5	WL	15	6/27/2017	PP	AW	P		
419	179	180	181						PATCH	6/12/2017	11:21	3	2	AG	112	6/19/2017	PP	AW	P		
420	181	183	PE3						PATCH	6/12/2017	16:18	5	3	AG	112	6/19/2017	PP	AW	P		
421	183	186	PE3						PATCH	6/12/2017	15:37	4	2	AG	112	6/19/2017	PP	AW	P		
422	182	185	186	PE3					PATCH	6/12/2017	15:11	9	6	AG	112	6/19/2017	PP	AW	P		
423	181	182	PE3						PATCH	6/12/2017	15:49	4	2	AG	112	6/19/2017	PP	AW	P		
424	189	182	184	185					PIPE BOOT	6/27/2017	9:47	16	10	AG	112	6/27/2017	PP	AW	P		CAPS 182/184
425	179	181							PATCH	6/12/2017	13:22	6	2	AG	112	6/19/2017	PP	AW	P	38	
426	184	185	PS	R247	R248				PATCH	6/20/2017	14:32	3	2	BS	15	6/20/2017	BS	AW	P		
427	171	184	R258	R248	R249	PS			PATCH	6/20/2017	14:06	6	3	BS	15	6/20/2017	BS	AW	P		
428	185	190	R247						PATCH	6/20/2017	14:44	2	1	BS	15	6/20/2017	BS	AW	P		
429	190	191	R247						PATCH	6/20/2017	14:48	2	1	BS	15	6/20/2017	BS	AW	P		
430	191	R246	R247	PS					PATCH	6/20/2017	14:52	3	2	BS	15	6/20/2017	BS	AW	P		
431	R246	PS							PATCH	6/20/2017	15:00	3	2	BS	15	6/20/2017	BS	AW	P		
432	191	193	R245	R246	PS				PATCH	6/20/2017	15:08	3	3	BS	15	6/20/2017	BS	AW	P		
433	185	189	190						PATCH	6/20/2017	16:58	5	2	BS	15	6/27/2017	PP	AW	P		
434	190	191					42		PATCH	6/12/2017	16:34	6	2	AG	112	6/19/2017	PP	AW	P	39	
435	155	187	189						PATCH	6/12/2017	13:42	5	3	AG	112	6/19/2017	PP	AW	P		
436	201	202					0	9	CAP	6/20/2017	14:20	9	2	WL	211	6/20/2017	PP	AW	P		
437	202	204	205						PATCH	6/20/2017	14:22	5	4	WL	211	6/20/2017	PP	AW	P		
438	204	205	206						PATCH	6/16/2017	14:30	3	3	WL	211	6/19/2017	PP	AW	P		
439	198	200					126		PATCH	6/20/2017	15:53	6	2	BS	15	6/20/2017	BS	AW	P	54	

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
440	203	PS					10	15	PATCH	6/20/2017	16:25	5	2	WL	211	6/24/2017	WE	AW	P	55B	
441	207	204					2	4	PATCH	6/20/2017	16:53	2	1	WL	211	6/24/2017	WE	AW	P		
442	207	208					105		PATCH	6/20/2017	15:08	6	2	WL	211	6/24/2017	WE	AW	P	56	
443	249	PS					2	7	PATCH	6/27/2017	8:09	20	2	AG	112	6/27/2017	PP	AW	P	67, 67A, 67B	
444	248	PS					6	11	PATCH	6/27/2017	8:04	5	2	AG	112	6/27/2017	PP	AW	P	68	
445	252	245					25	27	PIPE BOOT	6/24/2017	16:42	9	3	AG	112	6/27/2017	WE	AW	P		
446	190	191	192						PATCH	6/12/2017	13:42	5	3	AG	112	6/19/2017	PP	AW	P		
447	185	186	187						PATCH	6/12/2017	13:46	2	2	AG	112	6/19/2017	PP	AW	P		
448	185	186	PE3						PIPE BOOT	6/27/2017	13:00	10	5	WL	15	6/27/2017	PP	AW	P		
449	187	188	189						PATCH	6/12/2017	13:55	5	3	AG	112	6/19/2017	PP	AW	P		
450	192	193					18		PATCH	6/16/2017	14:50	6	2	WL	211	6/19/2017	PP	AW	P	37	
451	192	193					20		PATCH	6/12/2017	14:58	2	2	AG	112	6/19/2017	PP	AW	P		
452	192	191	193						PATCH	6/12/2017	14:07	2	1	AG	112	6/19/2017	PP	AW	P		
453	193	194	R245						PATCH	6/20/2017	15:14	2	1	BS	15	6/20/2017	BS	AW	P		
454	194	R244	R245	PS					PATCH	6/20/2017	15:27	2	2	BS	15	6/20/2017	BS	AW	P		
455	194	196	R244						PATCH	6/20/2017	15:30	2	2	BS	15	6/20/2017	BS	AW	P		
456	R244	PS							PATCH	6/20/2017	15:36	5	3	BS	15	6/20/2017	BS	AW	P		
457	196	197	R244						PATCH	6/20/2017	15:40	2	1	BS	15	6/20/2017	BS	AW	P		
458	194	195	196						PATCH	6/12/2017	17:10	4	3	AG	112	6/19/2017	PP	AW	P		
459	195	196	197						PATCH	6/12/2017	17:13	3	2	AG	112	6/19/2017	PP	AW	P		
460	198	199	200						PATCH	6/16/2017	11:50	7	5	WL	211	6/19/2017	PP	AW	P		
461	199	200	201						PATCH	6/16/2017	13:25	3	2	WL	211	6/19/2017	PP	AW	P		
462	197	198					67		PATCH	6/16/2017	13:32	6	2	WL	211	6/19/2017	PP	AW	P	42	
463	198	200					42		PATCH	6/16/2017	15:45	6	2	WL	211	6/19/2017	PP	AW	P	44	
464	198	200					51	59	PIPE BOOT	6/27/2017	7:48	8	3	WL	15	6/27/2017	PP	AW	P		
465	197	198	R244	PS					PATCH	6/20/2017	15:46	4	3	BS	15	6/20/2017	BS	AW	P		
466	198	200	PS						PATCH	6/20/2017	15:57	2	2	BS	15	6/20/2017	BS	AW	P		
467	200	201	PS						PATCH	6/20/2017	16:01	2	2	BS	15	6/24/2017	WE	AW	P		
468	201	PS							PATCH	6/20/2017	16:14	5	3	BS	15	6/24/2017	WE	AW	P		
469	201	203	PS						PATCH	6/20/2017	16:26	4	2	BS	15	6/24/2017	WE	AW	P		
470	203	204	PS						PATCH	6/20/2017	16:17	14	2	WL	211	6/24/2017	WE	AW	P	55	
471	204	206	PS						PATCH	6/20/2017	15:29	3	2	WL	211	6/24/2017	WE	AW	P		
472	203	204					7		PATCH	6/20/2017	16:38	6	2	WL	211	6/24/2017	WE	AW	P	43	
473	202	203	204						PATCH	6/20/2017	16:43	2	2	WL	211	6/20/2017	PP	AW	P		
474	201	202	203						PIPE BOOT	6/26/2017	14:42	8	8	WL	15	6/27/2017	PP	AW	P		
475	207	208					24		PATCH	6/16/2017	14:40	2	1	WL	211	6/19/2017	PP	AW	P		
476	206	207	PS						PATCH	6/20/2017	15:12	5	2	WL	211	6/24/2017	WE	AW	P		
477	207	208	PS						PATCH	6/20/2017	14:51	2	1	WL	211	6/24/2017	WE	AW	P		
478	100	98	99						CAP	SEE PANEL SEAMING LOGS						SEE NON-DESTRUCTIVE TEST LOGS				20A2, 20A3, 20A4, 20A5, 20A6	

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
479	91	93					0	43	CAP	SEE PANEL SEAMING LOGS						SEE NON-DESTRUCTIVE TEST LOGS				21B, 21B2, 21B3, 21B4	
480	86	87					0	70	CAP											20, 20B, 20B2, 20B3, 20B4, 20B5	
481	85	86					0	16	CAP												
482	85	86					21	65	CAP											20B6, 20B7	
483	209	217	PS				0	4	PATCH, T-cap	6/13/2017	11:23	4	2	AG	112	6/16/2017	BS	BV	P		
484	209	210	217						T-CAP	6/19/2017	10:13	2	2	AG	112	6/19/2017	PP	AW	P		
485	210	211	217						T-CAP	6/19/2017	10:18	2	2	AG	112	6/19/2017	PP	AW	P		
486	211	212	217						T-CAP	6/19/2017	10:24	3	2	AG	112	6/19/2017	PP	AW	P		
487	211	212					13		PATCH	6/19/2017	10:29	5	2	AG	112	6/19/2017	PP	AW	P	48	
488	212	213					5	7	PATCH	6/19/2017	11:44	3	2	AG	112	6/19/2017	PP	AW	P		
489	212	213	215						T-CAP	6/19/2017	11:38	2	2	AG	112	6/19/2017	PP	AW	P		
490	213	214	215	216					T-CAP, PATCH	6/19/2017	11:36	11	5	AG	112	6/20/2017	BS	AW	P		
491	216	217					10		PATCH	6/19/2017	10:45	2	2	AG	112	6/19/2017	PP	AW	P		
492	215	216	217						T-CAP	6/19/2017	10:34	2	2	AG	112	6/19/2017	PP	AW	P		
493	212	215	217						T-CAP	6/19/2017	10:32	2	2	AG	112	6/19/2017	PP	AW	P		
494	218	220					73	81	PATCH	6/19/2017	10:05	9	2	AG	112	6/19/2017	PP	AW	P		
495	217	218					16		PATCH	6/19/2017	10:12	2	2	AG	112	6/19/2017	PP	AW	P		
496	217	218	219						T-CAP	6/19/2017	10:10	2	2	AG	112	6/19/2017	PP	AW	P		
497	218	219	220						T-CAP	6/19/2017	10:07	2	2	AG	112	6/19/2017	PP	AW	P		
498	219	220	PS						T-CAP	6/13/2017	15:21	2	2	AG	112	6/16/2017	BS	BV	P		
499	217	219	PS						T-CAP	6/13/2017	15:18	2	2	AG	112	6/16/2017	BS	BV	P		
500	220	221	PS						T-CAP	6/13/2017	15:38	2	2	AG	112	6/16/2017	BS	BV	P		
501	221	223	PS						T-CAP	6/13/2017	15:48	2	2	AG	112	6/16/2017	BS	BV	P		
502	221	223					21	26	PATCH	6/16/2017	15:49	6	2	AG	112	6/19/2017	PP	AW	P		
503	221	223					45	52	PATCH	6/16/2017	15:45	8	2	AG	112	6/19/2017	PP	AW	P		
504	220	221	222						T-CAP	6/16/2017	15:54	2	2	AG	112	6/19/2017	PP	AW	P		
505	220	222					0	5	PIPE BOOT	6/19/2017	8:47	5	2	AG	112	6/20/2017	PP	AW	P		
506	220	222					5	10	PIPE BOOT	6/19/2017	9:01	5	4	AG	112	6/19/2017	PP	AW	P		
507	220	222					13	20	PATCH	6/19/2017	9:07	7	2	AG	112	6/19/2017	PP	AW	P	57	
508	221	222					7	14	PIPE BOOT	6/19/2017	8:18	7	6	AG	112	6/19/2017	PP	AW	P		
509	221	222	223						T-CAP	6/16/2017	15:57	2	2	AG	112	6/24/2017	WE	AW	P		
510	223	224					47		PATCH	6/16/2017	15:38	5	2	AG	112	6/19/2017	PP	AW	P	50	
511	224	225					13		PATCH	6/19/2017	8:28	2	2	AG	112	6/19/2017	PP	AW	P		
512	223	224	PS						T-CAP	6/14/2017	9:09	2	2	AG	112	6/16/2017	BS	BV	P		
513	224	225	PS						T-CAP	6/14/2017	9:07	2	2	AG	112	6/16/2017	BS	BV	P		
514	225	226	PS						T-CAP	6/14/2017	10:25	4	2	AG	112	6/16/2017	BS	BV	P		
515	226	227	PS						T-CAP	6/14/2017	10:38	3	2	AG	112	6/16/2017	BS	BV	P		
516	227	PS					4		PATCH	6/14/2017	10:44	3	3	AG	112	6/16/2017	BS	BV	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
517	226	227					64		PIPE BOOT	6/16/2017	15:32	8	4	AG	112	6/19/2017	PP	AW	P		
518	226	227					72		PIPE BOOT	6/21/2017	10:13	6	4	AG	211	6/24/2017	WE	AW	P		
519	227	228					83	88	PATCH	6/21/2017	11:17	5	2	AG	211	6/28/2017	PP	AW	P		
520	228	229					29		PATCH	6/16/2017	15:04	5	2	AG	112	6/16/2017	BS	BV	P	51	
521	227	228	PS						T-CAP	6/14/2017	10:53	2	2	AG	112	6/16/2017	BS	BV	P		
522	228	229	PS						T-CAP	6/14/2017	11:14	2	2	AG	112	6/16/2017	BS	BV	P		
523	229	230	PS						T-CAP	6/14/2017	11:25	3	2	AG	112	6/16/2017	BS	BV	P		
524	230	231	PS						T-CAP	6/16/2017	8:37	2	2	AG	112	6/16/2017	BS	BV	P		
525	230								PIPE BOOT	6/16/2017	11:25	12	10	AG	112	6/16/2017	BS	BV	P		
526	231	232					31		PIPE BOOT	6/16/2017	14:14	12	6	AG	112	6/19/2017	PP	AW	P		
527	231	232					36		PIPE BOOT	6/21/2017	13:20	13	6	AG	211	6/24/2017	PP	AW	P		
528	231	232					45		PIPE BOOT	6/21/2017	13:04	8	3	AG	211	6/24/2017	PP	AW	P		
529	232						23 E	5 N	PIPE BOOT	6/16/2017	10:13	7	3	AG	112	6/16/2017	BS	BV	P		
530	232	233	234						T-CAP	6/16/2017	10:16	2	2	AG	112	6/16/2017	BS	BV	P		
531	231	232	233						T-CAP	6/16/2017	10:18	2	2	AG	112	6/16/2017	BS	BV	P		
532	231	233	PS						T-CAP	6/16/2017	8:49	2	2	AG	112	6/16/2017	BS	BV	P		
533	233	234	PS						T-CAP	6/16/2017	8:52	4	2	AG	112	6/16/2017	BS	BV	P		
534	234	235	101						T-CAP	6/16/2017	9:07	2	2	AG	112	6/16/2017	BS	BV	P		
535	234	235					55		PIPE BOOT	6/16/2017	10:00	7	4	AG	112	6/19/2017	PP	AW	P		
536	235						74 E	9 N	PIPE BOOT	6/24/2017	9:25	4	4	AG	112	6/24/2017	PP	AW	P		
537	234	235	236						PIPE BOOT, T-CAP	6/21/2017	17:25	7	6	AG	211	6/24/2017	WE	AW	P		
538	8	9	10	11	WT				CAP	6/16/2017	8:30	54	2	WL	211	6/19/2017	BS	BV	P	17,A,A2,B,B2	
539	43						9 W	7 S	PATCH	5/26/2017	13:35	5	2	AG	112	5/26/2017	WE	AW	P		
540	39	40					46		PATCH	5/25/2017	13:00	2	2	AG	112	6/28/2017	PP	AW	P		
541	80	82					9		PATCH	6/19/2017	13:30	5	2	WL	211	6/19/2017	PP	AW	P	49	
542	83	84					28	37	PATCH	6/19/2017	13:18	9	2	WL	211	6/19/2017	PP	AW	P	19B2	
543	83	84					37	40	PATCH	6/6/2017	14:30	3	2	AG	211	6/19/2017	PP	AW	P	19B	
544	83	84					40	44	PATCH	6/2/2017	17:13	4	2	AG	83	6/19/2017	PP	AW	P	19B	
545	83	84					44	48	PATCH	6/20/2017	10:38	4	2	WL	211	6/20/2017	PP	AW	P	19	
546	85	86	R482	R231					PATCH	6/19/2017	13:54	6	2	WL	211	6/19/2017	PP	AW	P		
547	85	86	R482				66	68	PATCH	6/19/2017	13:38	6	2	WL	211	6/19/2017	PP	AW	P		
548	86	87	R480						PATCH	6/19/2017	14:05	6	2	WL	211	6/19/2017	PP	AW	P	20A	
549	84	85					18	27	PATCH	6/19/2017	13:20	9	2	WL	211	6/19/2017	PP	AW	P		
550	84	85					15	18	PATCH	6/6/2017	14:25	3	2	AG	211	6/19/2017	PP	AW	P		
551	84	85					4	11	PATCH	6/19/2017	13:25	7	2	WL	211	6/19/2017	PP	AW	P		
552	85	R482							PATCH	6/19/2017	14:16	2	2	WL	211	6/20/2017	PP	AW	P		
553	86	R482							PATCH	6/19/2017	14:12	2	2	WL	211	6/20/2017	PP	AW	P		
554	85	86	R481				14	17	PATCH	6/19/2017	15:00	5	3	WL	211	6/20/2017	PP	AW	P		
555	85	86	R481				2	4	PATCH	6/19/2017	14:55	5	3	WL	211	6/20/2017	PP	AW	P		
556	78	85	86						PATCH	6/1/2017	10:30	4	2	AG	211	6/20/2017	PP	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
557	77	86	R480				56	58	PATCH	6/19/2017	15:20	2	2	WL	211	6/19/2017	PP	AW	P		
558	77	87	R480						PATCH	6/19/2017	15:27	2	2	WL	211	6/19/2017	PP	AW	P		
559	84	85					11	15	PATCH	6/2/2017	17:04	4	2	AG	83	6/20/2017	PP	AW	P	19B	
560	87	PS					10	15	PATCH	6/19/2017	14:18	5	2	WL	211	6/28/2017	PP	AW	P	47B	
561	88	PS							PATCH	6/14/2017	11:35	16	2	AG	112	6/28/2017	PP	AW	P	47	
562	92	94					6	12	PATCH	6/20/2017	8:07	6	2	WL	211	6/28/2017	PP	AW	P		
563	92	94					12	16	PATCH	6/2/2017	16:54	4	2	AG	83	6/28/2017	PP	AW	P		
564	92	94					16	19	PATCH	6/6/2017	14:43	3	2	AG	211	6/28/2017	PP	AW	P		
565	92	94					19	27	PATCH	6/20/2017	7:50	8	2	WL	211	6/28/2017	PP	AW	P	21, 21A, 21A2	
566	91	92	93						PATCH	6/1/2017	8:07	2	2	AG	211	6/19/2017	PP	AW	P		
567	92	93	94						PATCH	6/1/2017	7:58	3	2	AG	211	6/19/2017	PP	AW	P		
568	91	93	R479				6	8	PATCH	6/19/2017	16:10	3	2	WL	211	6/19/2017	PP	AW	P		
569	91	R479					25	30	PATCH	6/19/2017	15:42	5	2	WL	211	6/19/2017	PP	AW	P	58	
570	73	91	93						PATCH	6/19/2017	15:55	6	2	WL	211	6/19/2017	PP	AW	P		
571	100	101					2	6	PATCH	6/19/2017	17:07	4	2	WL	211	6/20/2017	PP	AW	P		
572	100	101					11	14	PATCH	6/7/2017	11:30	3	2	AG	211	6/20/2017	PP	AW	P		
573	100	101					14	22	PATCH	6/19/2017	16:58	8	2	WL	211	6/20/2017	PP	AW	P		
574	95						31 W	1 S	PIPE BOOT	6/2/2017	16:39	7	4	AG	83	6/10/2017	WE	AW	P		
575	97	PS					9	14	PATCH	6/23/2017	15:50	16	3	AG	211	6/24/2017	WE	AW	P	52,52B	
576	97	98					5	8	PATCH	6/1/2017	16:54	3	2	AG	211	6/10/2017	WE	AW	P		
577	98	PS					3	9	PATCH	6/16/2017	14:31	6	2	AG	112	6/16/2017	BS	AW	P		
578	98	100	PS						PIPE BOOT	6/2/2017	10:30	7	7	AG	211	6/10/2017	WE	AW	P		
579	98	100	R478						PATCH	6/20/2017	8:27	7	3	WL	211	6/24/2017	PP	AW	P	20A7	
580	98	99	R478						PATCH	6/20/2017	8:37	2	2	WL	211	6/24/2017	PP	AW	P		
581	97	98	99						PATCH	6/1/2017	17:30	3	2	AG	211	6/10/2017	WE	AW	P		
582	97	99					21	24	PATCH	6/20/2017	10:25	10	3	WL	211	6/24/2017	WE	AW	P		
583	99	100	R478						PATCH	6/20/2017	11:05	6	2	WL	211	6/24/2017	PP	AW	P	20A5	
584	97	99					120	124	PATCH	6/19/2017	16:21	4	2	WL	211	6/19/2017	PP	AW	P	23B	
585	27	103					9	14	PATCH	6/20/2017	11:33	5	2	WL	211	6/20/2017	BS	AW	P	46	
586	101	102					32	28	PIPE BBOT	6/7/2017	10:24	6	5	AG	211	6/10/2017	WE	AW	P		
587	30	99	100	R478					PATCH	6/19/2017	16:46	7	3	WL	211	6/19/2017	PP	AW	P		
588	101	102					14	22	PIPE BOOT	6/7/2017	10:21	8	6	AG	211	6/10/2017	WE	AW	P		
589	104	105					92	97	PIPE BOOT	6/10/2017	10:56	5	5	AG	112	6/24/2017	PP	AW	P		
590	101	104					113	115	PATCH	6/2/2017	11:10	2	2	AG	211	6/10/2017	WE	AW	P		
591	100	101	PS						PATCH	6/2/2017	10:55	1	1	AG	211	6/16/2017	BS	AW	P		
592	100	PS					8	15	PIPE BOOT	6/2/2017	10:45	7	3	AG	211	6/10/2017	WE	AW	P		
593	109	143	PS						PATCH	6/19/2017	16:15	3	2	BS	15	6/20/2017	BS	AW	P		
594	143	144	PS				0	4	PATCH	6/19/2017	16:20	4	2	BS	15	6/20/2017	BS	AW	P		
595	143	144	PS						PATCH	6/19/2017	14:40	2	2	BS	15	6/24/2017	WE	AW	P		
596	144	PS					3	5	PATCH	6/19/2017	13:05	2	1	BS	15	6/20/2017	BS	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
597	144	PS					9	15	PATCH	6/19/2017	13:10	6	5	BS	15	6/20/2017	BS	AW	P		
598	144	145	R255	PS					PATCH	6/19/2017	13:15	7	10	BS	15	6/20/2017	BS	AW	P		
599	145	155	R255	R254	PS				PATCH	6/19/2017	13:20	4	5	BS	15	6/20/2017	BS	AW	P		
600	155	156	R254						PATCH	6/19/2017	13:25	2	2	BS	15	6/20/2017	BS	AW	P		
601	249	250	PS						PATCH	6/19/2017	13:44	16	2	BS	15	6/20/2017	BS	AW	P		
602	238	239	240						T-CAP	6/24/2017	11:02	2	2	AG	112	6/24/2017	WE	AW	P		
603	154	R253	R252	PS					PATCH	6/19/2017	13:31	5	3	BS	15	6/20/2017	BS	W	P		
604	R603	R252	PS						PATCH	6/20/2017	13:53	7	2	BS	15	6/20/2017	BS	AW	P		
605	154	R251	R252	PS					PATCH	6/20/2017	13:40	3	2	BS	15	6/20/2017	BS	AW	P		
606	R251	PS					8	10	PATCH	6/20/2017	13:57	3	2	BS	15	6/20/2017	BS	AW	P		
607	R251	159	R256						PATCH	6/20/2017	13:49	3	2	BS	15	6/20/2017	BS	AW	P		
608	R250	R251	R256	170	PS				PATCH	6/20/2017	14:00	3	3	BS	15	6/20/2017	BS	AW	P		
609	170	R219	R250	PS					PATCH	6/20/2017	14:03	11	3	BS	15	6/20/2017	BS	AW	P		
610	170	171	R249						PATCH	6/20/2017	14:07	2	2	BS	15	6/20/2017	BS	AW	P		
611	171	R249	PS						PATCH	6/20/2017	14:10	4	2	BS	15	6/20/2017	BS	AW	P		
612	181	184	R258						PATCH	6/20/2017	14:12	3	3	BS	15	6/20/2017	BS	AW	P		
613	171	181	R258						PATCH	6/20/2017	14:18	1	1	BS	15	6/20/2017	BS	AW	P		
614	CENTER PF R258								PATCH	6/20/2017	14:22	3	3	BS	15	6/20/2017	BS	AW	P		
615	R247	PS							PATCH	6/20/2017	14:38	6	2	BS	15	6/20/2017	BS	AW	P	45	
616	243	R617					6	9	PATCH	6/2/2017	10:47	3	2	AG	211	6/27/2017	PP	AW	P		
617	243	246	AT						PATCH	6/21/2017	14:47	11	6	SP	45	6/21/2017	KS	AW	P		
618	27	28	31						PATCH	5/26/2017	10:50	3	2	MAY	60	5/26/2017	WE	AW	P		
619	29	30	100						T-CAP	6/7/2017	10:48	2	2	AG	211	6/10/2017	WE	BD	P		DUPLICATE OF R191
620	44	47	WT				0	2	PATCH	5/30/2017	15:01	3	2	AG	211	5/30/2017	WE	AW	P		DUPLICATE OF R122
621	100	101							PATCH	6/7/2017	11:36	4	3	AG	211	6/20/2017	WE	AW	P	23	
622	100	101							PATCH	6/23/2017	9:17	12	3	AG	211	6/23/2017	PP	AW	P		
623	97	99							PATCH	6/23/2017	9:20	7	3	AG	211	6/23/2017	PP	AW	P		
624	220	221					64		PATCH	6/20/2017	9:11	7	2	AG	112	6/20/2017	PP	AW	P	57B	
625	83	84					27	50	PATCH	6/23/2017	9:25	23	3	AG	211	6/28/2017	PP	AW	P	19B, 19B2	
626	78	84	85				0	27	PATCH	6/23/2017	14:20	28	3	AG	211	6/28/2017	PP	AW	P	19,19A, 19A2	
627	131	PS					9	14	PATCH	6/19/2017	17:08	5	2	AG	112	6/28/2017	PP	AW	P	40	
628	231	232					36		PIPE BOOT	6/21/2017	13:20	13	6	AG	211	6/24/2017	PP	AW	P		DUPLICATE OF R527
629	231	232					45		PIPE BOOT	6/21/2017	13:04	8	3	AG	211	6/24/2017	PP	AW	P		DUPLICATE OF R528
630	103	104	235	244					T-CAP	6/23/2017	16:01	4	2	AG	211	6/24/2017	WE	AW	P		
631	235	244					11		PATCH	6/23/2017	15:58	2	1	AG	211	6/24/2017	WE	AW	P		
632	235	237	244						T-CAP	6/24/2017	9:46	3	2	AG	112	6/24/2017	WE	AW	P		
633	235	237					50		PATCH	6/24/2017	9:40	5	2	AG	112	6/24/2017	WE	AW	P	60	
634	237	244					10		PATCH	6/24/2017	9:49	6	2	AG	112	6/24/2017	WE	AW	P	65	
635	235	236	237						T-CAP	6/24/2017	9:31	2	1	AG	112	6/24/2017	PP	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
636	236	237					16		PATCH	6/24/2017	9:32	7	3	AG	112	6/24/2017	WE	AW	P		
637	237	238					9		PATCH	6/21/2017	15:06	2	1	AG	211	6/24/2017	PP	AW	P		
638	238						6'S 20'W		PIPE BOOT	6/21/2017	14:55	4	4	AG	211	6/24/2017	PP	AW	P		
639	240						5'S 10'W		PIPE BOOT	6/21/2017	14:43	7	8	AG	211	6/24/2017	WE	AW	P		
640	240	241					23	31	PATCH	6/24/2017	11:24	8	2	AG	112	6/24/2017	WE	AW	P		
641	238						7'S 25'W		PIPE BOOT	6/24/2017	11:11	3	3	AG	112	6/24/2017	WE	AW	P		
642	238	239	240						T-CAP	6/24/2017	11:02	2	2	AG	112	6/24/2017	WE	AW	P		
643	239	240	241						T-CAP	6/24/2017	10:45	2	2	AG	112	6/24/2017	WE	AW	P		
644	239	241					6		PATCH	6/24/2017	10:42	5	2	AG	112	6/24/2017	PP	AW	P	59	
645	239	241					21		PATCH	6/24/2017	10:36	3	2	AG	112	6/24/2017	PP	AW	P		
646	237	238	244						T-CAP	6/24/2017	9:56	3	2	AG	112	6/24/2017	PP	AW	P		
647	238	244					7		PATCH	6/24/2017	9:59	3	1	AG	112	6/24/2017	WE	AW	P		
648	238	239					41	46	PIPE BOOT	6/24/2017	10:28	5	5	AG	112	6/24/2017	WE	AW	P		
649	238	239	244						T-CAP	6/24/2017	10:10	1	1	AG	112	6/24/2017	WE	AW	P		
650	239	241	244						T-CAP	6/24/2017	10:32	2	2	AG	112	6/24/2017	WE	AW	P		
651	241	242	244						T-CAP	6/24/2017	13:51	2	2	WL	15	6/24/2017	WE	AW	P		
652	242	244	251						T-CAP	6/24/2017	13:55	2	2	WL	15	6/24/2017	PP	AW	P		
653	244	251	PS						T-CAP	6/24/2017	8:26	4	2	AG	112	6/24/2017	PP	AW	P		
654	108	109	244						T-CAP	6/23/2017	16:36	2	2	AG	211	6/24/2017	PP	AW	P		
655	104	105	244						T-CAP	6/23/2017	16:14	2	2	AG	211	6/24/2017	WE	AW	P		
656	242	250	251						T-CAP	6/24/2017	14:00	2	2	WL	15	6/24/2017	PP	AW	P		
657	242	249	250						T-CAP	6/24/2017	13:15	2	2	AG	112	6/24/2017	PP	AW	P		
658	249	250	PS				0	26	PATCH	6/24/2017	9:02	26	2	AG	112	6/24/2017	PP	AW	P	61, 61A, 61B	
659	242	248	249						T-CAP	6/24/2017	13:34	22	2	AG	112	6/24/2017	PP	AW	P		
660	242	243	248						T-CAP	6/24/2017	11:39	2	2	AG	112	6/24/2017	PP	AW	P		
661	242						2'W 8'N		PIPE BOOT	6/24/2017	13:55	6	3	AG	112	6/24/2017	WE	AW	P		
662	241	242	243						T-CAP	6/24/2017	11:27	2	2	AG	112	6/24/2017	WE	AW	P		
663	243	247	248						T-CAP	6/24/2017	11:47	2	2	AG	112	6/24/2017	WE	AW	P		
664	243	246	247						T-CAP	6/24/2017	13:30	3	2	AG	112	6/24/2017	WE	AW	P		
665	243	246	R617						PATCH	6/22/2017	14:21	9	3	AG	211	6/24/2017	WE	AW	P		
666	250	251	PS						T-CAP	6/24/2017	8:35	2	2	AG	112	6/24/2017	WE	AW	P		
667	248	249	PS						T-CAP	6/24/2017	13:47	2	2	WL	15	6/24/2017	WE	AW	P		
668	247	248	PS						T-CAP	6/24/2017	13:20	2	2	WL	15	6/24/2017	WE	AW	P		
669	247						7'W 20'N		PATCH	6/24/2017	14:50	5	5	AG	112	6/24/2017	WE	AW	P		
670	246	247					31	37	PATCH	6/24/2017	14:45	8	6	AG	112	6/24/2017	WE	AW	P		
671	246	247	PS						T-CAP	6/24/2017	11:35	2	2	WL	15	6/24/2017	WE	AW	P		
672	245	246	PS						T-CAP	6/24/2017	11:04	4	2	WL	15	6/24/2017	WE	AW	P		
673	252	245					25	27	PIPE BOOT	6/24/2017	16:42	9	3	AG	112	6/27/2017	WE	AW	P		DUPLICATE OF R445
674	245	252					28	32	PIPE BOOT	6/26/2017	9:07	6	4	AG	112	6/27/2017	PP	AW	P		
675	245	252	PS						T-CAP	6/24/2017	10:40	3	2	WL	15	6/24/2017	PP	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
676	245	PS					0	5	PATCH	6/24/2017	10:45	5	3	WL	15	6/24/2017	WE	AW	P		
677	253	254					6	8	PATCH	6/24/2017	9:30	3	1	WL	15	6/24/2017	WE	AW	P		
678	252	253	R679						PATCH	6/24/2017	10:00	2	2	WL	15	6/24/2017	PP	AW	P		
679	252	253	PS						T-CAP	6/24/2017	9:47	6	3	WL	15	6/24/2017	PP	AW	P		
680	252	253	254						T-CAP	6/24/2017	10:15	4	2	WL	15	6/24/2017	WE	AW	P		
681	253	254	255						T-CAP	6/24/2017	9:21	6	2	WL	15	6/24/2017	WE	AW	P		
682	255	256	PS						T-CAP	6/24/2017	8:45	3	2	WL	15	6/24/2017	WE	AW	P		
683	255	256					13		PATCH	6/24/2017	8:52	5	2	WL	15	6/24/2017	WE	AW	P	62	
684	256	257	PS						T-CAP	6/24/2017	8:18	2	2	WL	15	6/24/2017	WE	AW	P		
685	257	258	PS						T-CAP	6/24/2017	8:10	2	2	WL	15	6/24/2017	WE	AW	P		
686	257	258					14		PATCH	6/24/2017	14:15	3	2	WL	15	6/24/2017	PP	AW	P		
687	258	259	PS						T-CAP	6/23/2017	17:41	2	2	WL	15	6/24/2017	WE	AW	P		
688	259	260	PS						T-CAP	6/23/2017	17:30	2	2	WL	15	6/24/2017	PP	AW	P		
689	260	261	PS						T-CAP	6/23/2017	17:05	2	2	WL	15	6/24/2017	WE	AW	P		
690	261	262	PS						T-CAP	6/23/2017	16:51	2	2	WL	15	6/24/2017	WE	AW	P		
691	262	263					2	4	PATCH	6/23/2017	16:15	2	2	WL	15	6/24/2017	WE	AW	P		
692	263	264	PS						T-CAP	6/23/2017	15:45	2	2	WL	15	6/24/2017	WE	AW	P		
693	264	265	PS						T-CAP	6/23/2017	15:30	1	1	WL	15	6/24/2017	PP	AW	P		
694	265	266	PS						T-CAP	6/23/2017	15:16	2	2	WL	15	6/24/2017	PP	AW	P		
695	265	266					19	21	PATCH	6/23/2017	15:25	2	2	WL	15	6/24/2017	WE	AW	P		
696	266	267	PS						T-CAP	6/23/2017	14:42	3	1	WL	15	6/24/2017	WE	AW	P		
697	267	268	PS						T-CAP	6/23/2017	14:28	2	2	WL	15	6/24/2017	PP	AW	P		
698	268	269	PS						T-CAP	6/23/2017	14:20	2	2	WL	15	6/24/2017	PP	AW	P		
699	269	274	282						T-CAP	6/26/2017	10:48	3	2	WL	15	6/26/2017	PP	AW	P		
700	274	282					5	7	PATCH	6/24/2017	14:40	2	1	WL	15	6/24/2017	PP	AW	P		
701	281	282	PS						T-CAP	6/24/2017	14:38	3	2	WL	15	6/24/2017	WE	AW	P		
702	208	281	PS						T-CAP	6/24/2017	14:28	3	3	WL	15	6/24/2017	WE	AW	P		
703	274	281					14		PATCH	6/24/2017	14:52	6	2	WL	15	6/24/2017	WE	AW	P	64	
704	274	281	282						T-CAP	6/24/2017	15:00	3	3	WL	15	6/24/2017	WE	AW	P		
705	274	280	281						T-CAP	6/24/2017	15:07	2	2	WL	15	6/24/2017	WE	AW	P		
706	273	280	281						T-CAP	6/24/2017	15:14	3	2	WL	15	6/24/2017	PP	AW	P		
707	271	273	281						T-CAP	6/24/2017	15:22	3	2	WL	15	6/24/2017	PP	AW	P		
708	272	273	280						T-CAP	6/24/2017	15:48	2	2	WL	15	6/24/2017	PP	AW	P		
709	274	275	280						T-CAP	6/24/2017	15:32	2	2	WL	15	6/24/2017	WE	AW	P		
710	272	279	280						T-CAP	6/24/2017	16:00	3	3	WL	15	6/24/2017	WE	AW	P		
711	275	277	279	280					T-CAP	6/24/2017	16:01	4	3	WL	15	6/24/2017	WE	AW	P		
712	276	277	278	279					T-CAP	6/26/2017	14:35	3	2	WL	15	6/26/2017	WE	AW	P		
713	278	279							PATCH	6/26/2017	9:48	4	2	WL	15	6/26/2017	WE	AW	P		
714	276						2'E 5'S		PIPE BOOT	6/26/2017	8:34	4	3	WL	15	6/26/2017	WE	AW	P		
715	275	276	277						T-CAP	6/26/2017	15:55	2	2	WL	15	6/26/2017	WE	AW	P		

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
716	274	275					38	47	PATCH	6/26/2017	10:40	9	5	WL	15	6/26/2017	WE	AW	P		
717	270	272					28	31	PATCH	6/26/2017	16:16	3	2	WL	15	6/26/2017	WE	AW	P		
718	270	283							PATCH	6/24/2017	16:51	4	2	WL	15	6/26/2017	WE	AW	P		
719	270	272	273						T-CAP	6/24/2017	15:40	3	3	WL	15	6/24/2017	PP	AW	P		
720	270	271	273						T-CAP	6/24/2017	15:32	2	2	WL	15	6/26/2017	WE	AW	P		
721	271	273					21		PATCH	6/24/2017	15:27	6	2	WL	15	6/24/2017	WE	AW	P	63	
722	283	284	285						T-CAP	6/24/2017	16:21	2	2	WL	15	6/24/2017	WE	AW	P		
723	283	285					18		PATCH	6/24/2017	16:41	6	2	WL	15	6/26/2017	WE	AW	P	66	
724	283	285					27	29	PATCH	6/24/2017	16:48	3	2	WL	15	6/26/2017	WE	AW	P		
725	170	160	R256	R257					PIPE BOOT	6/27/2017	7:58	8	6	AG	112	6/27/2017	PP	AW	P		
726	160	162	170	R257					PATCH	6/19/2017	14:00	6	3	BS	15	6/20/2017	PP	AW	P		
727	160	R256	R257						PATCH	6/19/2017	14:02	2	1	BS	15	6/20/2017	PP	AW	P		
728	159	160	R256						PIPE BOOT	6/26/2017	10:30	6	7	AG	112	6/27/2017	PP	AW	P		
729	129	130					15	20	PIPE BOOT	6/22/2017	11:03	18	9	AG	211	6/23/2017	WE	AW	P		
730	142	AT							PATCH	6/26/2017	16:15	25	4	WL	15	6/28/2017	PP	AW	P		
731	136	142	214	AT					PATCH	6/26/2017	16:00	27	4	WL	15	6/28/2017	PP	AW	P		
732	245	246					66	70	PATCH	6/27/2017	13:41	4	2	AG	112	6/27/2017	PP	AW	P		
733	245	252							PATCH	6/27/2017	13:23	3	2	AG	112	6/27/2017	PP	AW	P		
734	252	254	AT						PATCH	6/27/2017	13:14	1	1	AG	112	6/27/2017	PP	AW	P		
735	254	255	AT						PATCH	6/27/2017	15:00	8	3	AG	112	6/27/2017	PP	AW	P		
736	255	256	AT						PATCH	6/27/2017	15:15	11	8	AG	112	6/27/2017	PP	AW	P		
737	256	257	258	AT					PIPE BOOT	6/30/2017	7:30	17	14	WL	112	6/30/2017	PP	AW	P		
738	258	259	AT						PIPE BOOT	6/27/2017	13:57	11	10	AG	112	6/28/2017	PP	AW	P		
739	259	260	AT						PATCH	6/27/2017	13:58	19	6	AG	112	6/27/2017	PP	AW	P		
740	260	261	AT						PATCH	6/27/2017	13:45	22	3	AG	112	6/27/2017	PP	AW	P		
741	240	AT							PATCH	6/29/2017	14:40	4	2	WL	15	6/29/2017	PP	AW	P		
742	249	PS					6	16	PATCH	6/27/2017	16:04	10	2	AG	112	6/27/2017	PP	AW	P	67A	
743	249	250	PS				4	16	PATCH	6/27/2017	16:21	15	2	AG	112	6/27/2017	PP	AW	P	67B	
744	135	WT					7	13	PATCH	6/28/2017	10:45	6	2	WL	15	6/29/2017	PP	AW	P	69	
745	208						SEE PANEL LAYOUT DIAGRAM		PIPE BOOT	6/27/2017	8:03	3	3	WL	15	6/27/2017	PP	AW	P		SDR15
746	200	201							PIPE BOOT	6/27/2017	8:51	3	3	WL	15	6/27/2017	PP	AW	P		SDR14
747	189								PIPE BOOT	6/27/2017	9:17	3	3	WL	15	6/27/2017	PP	AW	P		SDR13
748	182	185							PIPE BOOT	6/27/2017	9:43	3	3	WL	15	6/27/2017	PP	AW	P		SDR12
749	189								PIPE BOOT	6/27/2017	10:28	3	3	WL	15	6/27/2017	PP	AW	P		SDR11
750	162								PIPE BOOT	6/27/2017	11:11	3	3	WL	15	6/27/2017	PP	AW	P		SDR10
751	165								PIPE BOOT	6/27/2017	14:05	3	3	WL	15	6/28/2017	PP	AW	P		SDR9
752	155								PIPE BOOT	6/27/2017	14:41	3	3	WL	15	6/28/2017	PP	AW	P		SDR8
753	108								PIPE BOOT	6/28/2017	8:07	3	3	WL	15	6/28/2017	PP	AW	P		SDR7
754	96								PIPE BOOT	6/28/2017	8:25	3	3	WL	15	6/28/2017	PP	AW	P		SDR6
755	89								PIPE BOOT	6/28/2017	8:43	3	3	WL	15	6/28/2017	PP	AW	P		SDR5

Geomembrane Repair Log

Num	Marked									Repaired						Tested				Notes	
	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Station	Station End	Type	Date	Time	Length	Width	Tech	Mach	Date	Tech	QA ID	Pass / Fail	DS #	Comments
756	63	64							PIPE BOOT	6/28/2017	9:08	3	3	WL	15	6/28/2017	PP	AW	P		SDR3
757	78	84	85				SEE PANEL LAYOUT DIAGRAM		PIPE BOOT	6/29/2017	8:30	3	3	WL	15	6/29/2017	PP	AW	P		SDR4
758	47	48							PIPE BOOT	6/28/2017	10:35	3	3	WL	15	6/28/2017	PP	AW	P		SDR2
759	48	WT							PIPE BOOT	6/29/2017	8:00	3	2	WL	15	6/29/2017	PP	AW	P		SDR1
760	18	WT	AT						PATCH	6/28/2017	16:45	6	3	BS	43	6/29/2017	PP	AW	P		
761	167						28'E 8'N		PATCH	7/1/2017	7:45	3	2	WL	112	7/1/2017	PP	AW	P		
762	57								PIPE BOOT	5/26/2017	10:40	4	4	AG	112	5/26/2017	WE	AW	P		
763	159	160					213		PATCH	6/20/2017	15:00	5	4	BS	15	6/20/2017	BS	AW	P	53	
764	23	24					97		PATCH	5/22/2017	11:00	4	2	MAY	211	5/30/2017	WE	AW	P	6	
765	SEE PANEL LAYOUT DIAGRAM								PIPE BOOT	6/2/2017	11:15	6	5	MAY	60	6/10/2017	WE	AW	P		
766	135	WT							PATCH	6/28/2017	10:45	17	3	WL	15	6/28/2017	PP	AW	P		

APPENDIX D

LANDFILL GAS AND LIQUIDS MANAGEMENT INFRASTRUCTURE

Sub-Appendices

D.1 Pipe Information
D.2 Pressure Test Forms

Sub-Appendix D.1

Pipe Information

Table 1: Typical Cell Classification by Current Thermoplastic Piping Material Designation Code

Physical Property	ASTM Test Method	Units	PE2708		PE3608		PE4710	
			Cell Number	Typical Value	Cell Number	Typical Value	Cell Number	Typical Value
Density	D 1505	gr/cc	2	>0.925-0.940	3	>0.940-0.947	4	>0.947-0.955
Melt Index	D 1238	gr/10 min	3	<0.4-0.15	4	<0.15	4	<0.15
Flexural Modulus	D 790	psi	3	40,000 -<80,000	5	110,000 - <180,000	5	110,000 - <180,000
Tensile Strength	D 638	psi	3	2600 - <3000	4	3000 - <3500	4	3000 – < 3500
Resistance to Slow Crack Growth	F 1473	hours	7	500 min	6	100 min	7	500 min
Hydrostatic Design Basis, HDB	D 2387	psi	3	1250	4	1600	4	1600
UV Stabilizer	D 1603	%	E	Colored with UV stabilizer	C	2% min carbon black	C	2% min carbon black

Notes:
1) The density provided is base resin density (without the influence of carbon black). Typical PE4710 HDPE pipe has a density of 0.956 to 0.964 with carbon black.
2) To be designated a PE4710, the pipe resin must meet certain supplementary requirements established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI).

It should be noted that other PE thermoplastics piping material designation codes do exist and may be encountered in the market place occasionally. However, the three primary PE thermoplastic piping material designations codes of Table 1 represent the principle PE piping products in the market today. For more information regarding these other thermoplastic piping material designation codes, please contact your ISCO sales professional.

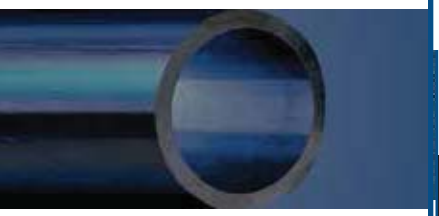
Table 2 below provides a simplification of Table 1 and illustrates the relative ease with which PE piping products may be specified. Using this approach allows the designer or specifier to accurately designate the appropriate PE piping product through the use a single thermoplastic piping material designation code and a relatively simple text string that establishes the physical property requirements for seven key performance properties.

Table 2: Representative Minimum Cell Classification by Thermoplastic Piping Material Designation Code

Thermoplastic Piping Material Designation Code	Minimum Cell Classification Per ASTM D3350
PE2708	233373E
PE3608	345464C
PE4710	445474C

The selected thermoplastic piping material designation code and minimum cell classification is then combined with the appropriate production and installation standards to effectively specify a tough, durable PE piping system. ISCO Industries can provide model specifications for a wide range of PE pipe applications. These model specifications are available at www.isco-pipe.com or by contacting your ISCO sales professional.

1-800-345-ISCO
www.isco-pipe.com



HDPE Pipe

- **Items highlighted in Blue indicates standard stocking items that are more readily available.**
- **Pressures are based on using water at 23°C (73°F).**
- **Average inside diameter calculated using nominal OD and minimum wall plus 6% for use in estimating fluid flows. Actual ID will vary.**
- **Service factors should be utilized to compensate for the effect of liquids other than water, and for other temperatures.**
- **Other piping sizes or DR's may be available upon request.**
- **Standard Lengths:**
  40' for 2"-24"
  50' for 26" and larger
  Coils available for 3/4"-6"(8" by special order)

1-800-345-ISCO

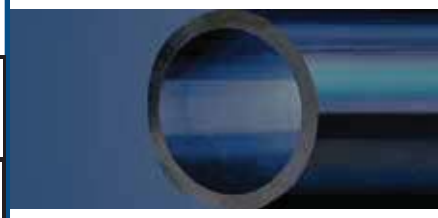
www.isco-pipe.com

PE 4710 IPS HDPE Pipe Sizes

Pressure Rating	Nominal Size	1"	1 1/4"	1 1/2"	2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"
	Actual O.D.	1.32"	1.660"	1.90"	2.38"	3.500"	4.50"	5.563"	6.625"	8.625"	10.750"	12.75"	14.00"	16.00"	18.00"
DR 7 (333psi)	Min. wall	0.188"	0.237"	0.271"	0.339"	0.500"	0.643"	0.795"	0.946"	1.232"	1.536"	1.821"	2.000"	2.286"	2.571"
	Average I.D.	0.917"	1.157"	1.325"	1.656"	2.440"	3.137"	3.878"	4.619"	6.013"	7.494"	8.889"	9.760"	11.154"	12.549"
	Weight lb/lf	0.291	0.463	0.607	0.950	2.060	3.402	5.200	7.374	12.498	19.416	27.312	32.930	43.010	54.435
DR 7.3 (312psi)	Min. wall	0.180"	0.227"	0.260"	0.325"	0.479"	0.616"	0.762"	0.908"	1.182"	1.473"	1.747"	1.918"	2.192"	2.466"
	Average I.D.	0.933"	1.178"	1.348"	1.685"	2.484"	3.193"	3.947"	4.701"	6.120"	7.628"	9.047"	9.934"	11.353"	12.773"
	Weight lb/lf	0.281	0.450	0.590	0.920	1.990	3.290	5.022	7.130	12.070	18.750	26.380	31.810	41.550	52.580
DR 9 (250psi)	Min. wall	0.146"	0.184"	0.211"	0.264"	0.389"	0.500"	0.618"	0.736"	0.958"	1.194"	1.417"	1.556"	1.778"	2.000"
	Average I.D.	1.005"	1.269"	1.452"	1.816"	2.676"	3.440"	4.253"	5.064"	6.593"	8.218"	9.747"	10.702"	12.231"	13.760"
	Weight lb/lf	0.235	0.374	0.490	0.770	1.664	2.751	4.204	5.963	10.110	15.700	22.085	26.630	34.780	44.020
DR 11 (200psi)	Min. wall	0.120"	0.151"	0.173"	0.216"	0.318"	0.409"	0.506"	0.602"	0.784"	0.977"	1.159"	1.273"	1.455"	1.636"
	Average I.D.	1.062"	1.340"	1.534"	1.917"	2.825"	3.633"	4.491"	5.348"	6.963"	8.678"	10.293"	11.302"	12.916"	14.531"
	Weight lb/lf	0.200	0.314	0.411	0.642	1.395	2.310	3.523	5.000	8.470	13.160	18.510	22.320	29.150	36.890
DR 13.5 (160psi)	Min. wall	---	---	---	0.176"	0.259"	0.333"	0.412"	0.491"	0.639"	0.796"	0.944"	1.037"	1.185"	1.333"
	Average I.D.	---	---	---	2.002"	2.950"	3.793"	4.689"	5.585"	7.271"	9.062"	10.748"	11.801"	13.487"	15.173"
	Weight lb/lf	---	---	---	0.534	1.160	1.920	2.928	4.152	7.040	10.932	15.380	18.540	24.220	30.651
DR 15.5 (138psi)	Min. wall	---	---	---	0.153"	0.226"	0.290"	0.359"	0.427"	0.556"	0.694"	0.823"	0.903"	1.032"	1.161"
	Average I.D.	---	---	---	2.050"	3.021"	3.885"	4.802"	5.719"	7.445"	9.280"	11.006"	12.085"	13.812"	15.538"
	Weight lb/lf	---	---	---	0.470	1.020	1.687	2.580	3.656	6.197	9.626	13.530	16.310	21.300	26.950
DR 17 (125psi)	Min. wall	---	---	---	0.140"	0.206"	0.265"	0.327"	0.390"	0.507"	0.632"	0.750"	0.824"	0.941"	1.059"
	Average I.D.	---	---	---	2.079"	3.064"	3.939"	4.869"	5.799"	7.549"	9.409"	11.160"	12.254"	14.005"	15.755"
	Weight lb/lf	---	---	---	0.431	0.940	1.550	2.360	3.360	5.690	8.834	12.430	14.983	19.570	24.770
DR 21 (100psi)	Min. wall	---	---	---	---	---	0.214"	0.265"	0.315"	0.411"	0.512"	0.607"	0.667"	0.762"	0.857"
	Average I.D.	---	---	---	---	---	4.046"	5.001"	5.956"	7.754"	9.665"	11.463"	12.587"	14.385"	16.183"
	Weight lb/lf	---	---	---	---	---	1.270	1.940	2.750	4.662	7.242	10.190	12.282	16.042	20.304
DR 26 (80 psi)	Min. wall	---	---	---	---	---	0.173"	0.214"	0.255"	0.332"	0.413"	0.490"	0.538"	0.615"	0.692"
	Average I.D.	---	---	---	---	---	4.133"	5.109"	6.085"	7.922"	9.873"	11.710"	12.858"	14.695"	16.532"
	Weight lb/lf	---	---	---	---	---	1.035	1.582	2.250	3.800	5.910	8.312	10.022	13.090	16.570
DR 32.5 (63 psi)	Min. wall	---	---	---	---	---	0.138"	0.171"	0.204"	0.265"	0.331"	0.392"	0.431"	0.492"	0.554"
	Average I.D.	---	---	---	---	---	4.206"	5.200"	6.193"	8.062"	10.049"	11.918"	13.087"	14.956"	16.826"
	Weight lb/lf	---	---	---	---	---	0.835	1.280	1.811	3.070	4.770	6.710	8.090	10.561	13.370

PE 4710 IPS HDPE Pipe Sizes

20"	22"	24"	26"	28"	30"	32"	34"	36"	42"	48"	54"	63"	Nominal Size	Pressure Rating
20.00"	22.00"	24.00"	26.00"	28.00"	30.00"	32.00"	34.00"	36.00"	42.00"	48.00"	54.00"	62.99"	Actual O.D.	
2.857"	3.143"	3.429"	---	---	---	---	---	---	---	---	---	---	Min. wall	DR 7 (333psi)
13.943"	15.337"	16.731"	---	---	---	---	---	---	---	---	---	---	Average I.D.	
67.203	80.591	95.916	---	---	---	---	---	---	---	---	---	---	Weight lb/lf	
2.740"	3.014"	3.288"	3.562"	---	---	---	---	---	---	---	---	---	Min. wall	DR 7.3 (317psi)
14.192"	15.611"	17.030"	18.449"	---	---	---	---	---	---	---	---	---	Average I.D.	
64.910	78.550	93.480	110.769	---	---	---	---	---	---	---	---	---	Weight lb/lf	
2.222"	2.444"	2.667"	2.889"	3.111"	3.333"	3.556"	---	---	---	---	---	---	Min. wall	DR 9 (250psi)
15.289"	16.818"	18.347"	19.876"	21.404"	22.933"	24.462"	---	---	---	---	---	---	Average I.D.	
54.342	65.754	78.250	92.535	107.312	123.183	140.183	---	---	---	---	---	---	Weight lb/lf	
1.818"	2.000"	2.182"	2.364"	2.545"	2.727"	2.909"	3.091"	3.273"	---	---	---	---	Min. wall	DR 11 (200psi)
16.145"	17.760"	19.375"	20.989"	22.604"	24.218"	25.833"	27.447"	29.062"	---	---	---	---	Average I.D.	
45.541	55.105	65.580	77.440	89.785	103.076	117.285	132.411	148.454	---	---	---	---	Weight lb/lf	
1.481"	1.630"	1.778"	1.926"	2.074"	2.222"	2.370"	2.519"	2.667"	3.111"	---	---	---	Min. wall	DR 13.5 (160psi)
16.859"	18.545"	20.231"	21.917"	23.603"	25.289"	26.975"	28.661"	30.347"	35.404"	---	---	---	Average I.D.	
37.840	45.790	54.490	64.261	74.522	85.543	97.324	109.905	123.208	167.675	---	---	---	Weight lb/lf	
1.290"	1.419"	1.548"	1.677"	1.806"	1.935"	2.065"	2.194"	2.323"	2.710"	3.097"	3.484"	---	Min. wall	DR 15.5 (138psi)
17.265"	18.991"	20.717"	22.444"	24.170"	25.897"	27.623"	29.350"	31.076"	36.255"	41.435"	46.614"	---	Average I.D.	
33.280	39.712	47.920	56.532	65.563	75.264	85.672	96.714	108.424	147.568	192.774	243.921	---	Weight lb/lf	
1.176"	1.294"	1.412"	1.529"	1.647"	1.765"	1.882"	2.000"	2.118"	2.471"	2.824"	3.176"	---	Min. wall	DR 17 (125psi)
17.506"	19.256"	21.007"	22.758"	24.508"	26.259"	28.009"	29.760"	31.511"	36.762"	42.014"	47.266"	---	Average I.D.	
30.580	37.000	44.031	51.856	60.154	69.068	78.557	88.700	99.457	135.372	176.813	223.713	---	Weight lb/lf	
0.952"	1.048"	1.143"	1.238"	1.333"	1.429"	1.524"	1.619"	1.714"	2.000"	2.286"	2.571"	3.000"	Min. wall	DR 21 (100psi)
17.981"	19.779"	21.577"	23.375"	25.173"	26.971"	28.770"	30.568"	32.366"	37.760"	43.154"	48.549"	56.631"	Average I.D.	
25.070	30.330	36.100	42.486	49.266	56.585	64.370	72.657	81.446	110.874	144.833	183.253	249.570	Weight lb/lf	
0.769"	0.846"	0.923"	1.000"	1.077"	1.154"	1.231"	1.308"	1.385"	1.615"	1.846"	2.077"	2.423"	Min. wall	DR 26 (80 psi)
18.369"	20.206"	22.043"	23.880"	25.717"	27.554"	29.391"	31.228"	33.065"	38.575"	44.086"	49.597"	57.854"	Average I.D.	
20.453	24.750	29.452	34.570	40.187	46.135	52.494	59.264	66.444	90.393	118.082	149.464	203.630	Weight lb/lf	
0.615"	0.677"	0.738"	0.800"	0.862"	0.923"	0.985"	1.046"	1.108"	1.292"	1.477"	1.662"	1.938"	Min. wall	DR 32.5 (63 psi)
18.695"	20.565"	22.434"	24.304"	26.174"	28.043"	29.913"	31.782"	33.652"	39.260"	44.869"	50.478"	58.881"	Average I.D.	
16.501	19.970	23.762	27.940	32.421	37.196	42.340	47.773	53.581	72.893	95.233	120.556	164.280	Weight lb/lf	



HDPE Pipe

- **Items highlighted in Blue indicates standard stocking items that are more readily available.**
- **Pressures are based on using water at 23°C (73°F).**
- **Average inside diameter calculated using nominal OD and minimum wall plus 6% for use in estimating fluid flows. Actual ID will vary.**
- **Service factors should be utilized to compensate for the effect of liquids other than water, and for other temperatures.**
- **Other piping sizes or DR's may be available upon request.**
- **Standard Lengths:**
  40' for 2"-24"
  50' for 26" and larger
  Coils available for 3/4"-6"(8" by special order)

1-800-345-ISCO

www.isco-pipe.com

Sub-Appendix D.2

Pressure Test Forms

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/15/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Bill Abernathy
Page: 1
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
GEW-201, 40, 40R, 203, 202, 55, 55R, 204, 53, 53R, 207, 41R, 41R2, 43R, 43R2, 205, 206, 44, 51, 211, 214, 49, 212, 54, 54R

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Gas Headers/Laterals
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	65	**9:30**
10	65	**9:40**
10	67	**9:50**
10	67	**10:00**
10	69	**10:10**
10	69	**10:20**
10	70	**10:53**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	70	**10:53**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/15/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Engineering for a Better World
FEEZOR
ENGINEERING, INC.

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/15/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Bill Abernathy
Page: 2
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
GEW-42R, 200

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Gas Headers/Laterals
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	81	**17:04**
10	81	**17:14**
10	81	**17:24**
10	81	**17:34**
10	81	**17:44**
10	81	**17:54**
10	81	**18:08**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	81	**18:08**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/15/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Engineering for a Better World
FEEZOR
ENGINEERING, INC.

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/16/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Bill Abernathy
Page: 3
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
GEW-2, 3, 4, 46R

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Gas Headers/Laterals
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	79	**11:36**
10	79	**11:46**
10	79	**11:56**
10	80	**12:06**
10	80	**12:16**
10	80	**12:26**
10	81	**13:08**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	80	**13:08**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/16/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Project: Phase 1 North Quarry EVOH Cover System
Engineers/Owner Rep: Bill Abernathy
Contractors Rep: Jason Carter

Date: 8/17/2017
Job No.: BT-125
Page: 4

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
GEW-45, 47R

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Gas Headers/Laterals
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	77	**9:43**
10	77	**9:53**
10	79	**10:03**
10	79	**10:13**
10	79	**10:23**
10	79	**10:33**
10	81	**13:58**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	81	**13:58**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/17/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Engineering for a Better World
FEEZOR
ENGINEERING, INC.

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/18/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 5
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PZ-109-SS, running clockwise around north quarry, past CT-10, past GEW-2S, then splitting at tee located immediately downhill of GEW-2. One part of pipe extends from tee, past GEW-2, past GEW-3, and ends near GEW-4. Other part of pipe extends from tee and follows surface water ditch to PZ-104R-SS.
Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 11 - Forcemain - 3" carrier
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	81	**10:30**
100	81	**10:40**
100	81	**10:50**
100	81	**11:00**
100	81	**11:10**
100	81	**11:20**
100	81	**12:00**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	81	**12:00**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/18/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/18/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 6
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PZ-102R-SS, running along anchor trench to end adjacent to flare station.

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 11 - Forcemain - 3" carrier
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	89	**15:00**
100	89	**15:10**
100	89	**15:20**
100	89	**15:30**
100	89	**15:40**
100	90	**15:50**
100	90	**16:05**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	90	**16:05**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/18/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Project: Phase 1 North Quarry EVOH Cover System
Engineers/Owner Rep: Bill Abernathy
Contractors Rep: Jason Carter

Date: 8/18/2017
Job No.: BT-125
Page: 7

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PZ-102R-SS, running along anchor trench to end adjacent to flare station.

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Forcemain - 6" Containment
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	89	**15:00**
10	89	**15:10**
10	89	**15:20**
10	89	**15:30**
10	89	**15:40**
10	90	**15:50**
10	90	**16:05**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	90	**16:05**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/18/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 8
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at GEW-47R to near LCS-6B, then splitting at tee near LCS-6B. One part of pipe extends from tee to GEW-4. Other part of pipe extends from tee to CT near PEW-53 and PEW-52.

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 9 - Airline
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	71	**7:00**
100	71	**7:10**
100	73	**7:20**
100	73	**7:30**
100	73	**7:40**
100	75	**7:50**
100	75	**8:00**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	75	**8:00**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 9
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PEW-52/PEW-53, then going uphill past GEW-49, past GEW-214, then to blind flange near TMP-44. From blind flange, continues past GEW-211, past GEW-207, past GEW-54/54R, to anchor trench downhill of of GEW-41/41R, then uphill to GEW-40R, past GEW-55/55R and ends at GEW-53/53R
Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 11 - Forcemain 3" carrier
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	78	**9:00**
100	78	**9:10**
100	78	**9:20**
100	80	**9:30**
100	80	**9:40**
100	80	**9:50**
100	81	**10:00**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	81	**10:00**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 10
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PEW-52/PEW-53, then going uphill past GEW-49, past GEW-214, then to blind flange near TMP-44. From blind flange, continues past GEW-211, past GEW-207, past GEW-54/54R, to anchor trench downhill of of GEW-41/41R, then uphill to GEW-40R, past GEW-55/55R and ends at GEW-53/53R
Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Forcemain 6" Containment
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	78	**9:00**
10	78	**9:10**
10	78	**9:20**
10	80	**9:30**
10	80	**9:40**
10	80	**9:50**
10	81	**10:00**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	81	**10:00**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 11
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at TMP-47/48, runs past LCS-6B, splits into wye. One line from wye terminates at GEW-47R. Other line from wye terminates at unlabeled CT near PEW-53 and PEW-52

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 11 - Forcemain 3" Carrier
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	82	**10:45**
100	84	**10:55**
100	84	**11:05**
100	86	**11:15**
100	86	**11:25**
100	86	**11:35**
100	88	**12:15**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	88	**12:15**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Engineering for a Better World
FEEZOR
ENGINEERING, INC.

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 12
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at TMP-47/48, runs past LCS-6B, splits into wye. One line from wye terminates at GEW-47R. Other line from wye terminates at unlabeled CT near PEW-53 and PEW-52

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Forcemain 6" Containment
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	82	**10:45**
10	84	**10:55**
10	84	**11:05**
10	86	**11:15**
10	86	**11:25**
10	86	**11:35**
10	88	**12:15**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	88	**12:15**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Project: Phase 1 North Quarry EVOH Cover System
Engineers/Owner Rep: Jon Wilkinson
Contractors Rep: Jason Carter

Date: 8/19/2017
Job No.: BT-125
Page: 13

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at GEW-4 and passes GEW-3, GEW-2, then proceeds downhill to perimeter access road. The line splits at a tee. The pipe from one leads to CT-11. The other splits into another tee a few feet away. One side from the second tee leads to GEW-46R. Other pipe from second tee leads clockwise around perimeter access road to road crossing 4, near CT-12.

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 9 - Airline

Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	86	**11:15**
100	86	**11:25**
100	86	**11:35**
100	88	**11:45**
100	88	**11:55**
100	88	**12:05**
100	88	**12:15**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	88	**12:15**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 14
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PZ-109-SS, running clockwise around north quarry, past CT-10, past GEW-2S, then splitting at tee located immediately downhill of GEW-2. One part of pipe extends from tee, past GEW-2, past GEW-3, and ends near GEW-4. Other part of pipe extends from tee and follows surface water ditch to PZ-104R-SS.
Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Forcemain 6" Containment
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	81	**13:09**
10	85	**13:19**
10	89	**13:29**
10	89	**13:39**
10	89	**13:49**
10	89	**13:59**
10	89	**14:10**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	89	**14:10**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Engineering for a Better World
FEEZOR
ENGINEERING, INC.

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/19/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Jon Wilkinson
Page: 15
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
Beginning at PEW-48 and leading uphill to GEW-42/42R

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 9 - Airline
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
100	89	**14:20**
100	89	**14:30**
100	89	**14:40**
100	89	**14:50**
100	88	**15:00**
100	88	**15:10**
100	88	**15:25**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
100	88	**15:25**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/19/2017
Engineers/Owners Rep.:

Feezor Engineering, Inc.
3377 Hollenberg Dr.
Bridgeton, MO 63044

Engineering for a Better World
FEEZOR
ENGINEERING, INC.

PIPELINE FIELD TESTING REPORT

Client: Bridgeton Landfill LLC
Date: 8/21/2017
Project: Phase 1 North Quarry EVOH Cover System
Job No.: BT-125
Engineers/Owner Rep: Bill Abernathy
Page: 16
Contractors Rep: Jason Carter

Location: (Bldg. to Bldg., Struct. to Struct., M.H. to M.H., Sta. to Sta., etc.)
GEW-42, 200

Description: (Material and Line Usage - HDPE -Header, HDPE Force-main)
HDPE SDR 17 - Forcemain 6" Containment
Type of Test: (Air, Hydrostatic, Infiltration, Exfiltration, Other)
AIR

Test Results

Start Pressure (PSI)	Temperature (F)	Start Time
10	82	**7:00**
10	82	**7:10**
10	82	**7:20**
10	82	**7:30**
10	82	**7:40**
10	82	**7:50**
10	82	**8:48**
Ending Pressure (PSI)	**Ending Temperature (F)**	**Ending Time**
10	82	**8:48**

Comments: Pass / Fail (Circle One)

Date Test Performed.: 8/21/2017
Engineers/Owners Rep.:

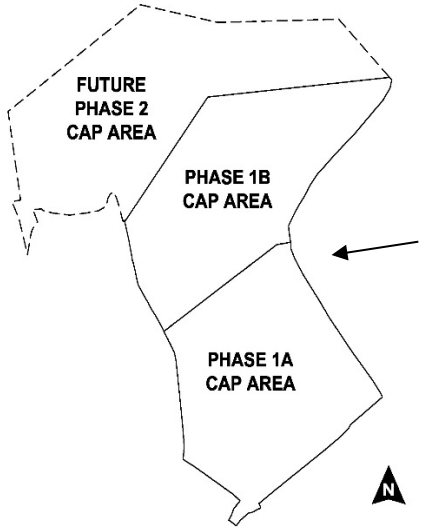
APPENDIX E

CONSTRUCTION PHOTOGRAPHS

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 1	Filename: IMG_20161201_140019177	Date: 12/1/16	Time: 2:00 PM
Comments: Initial stakeout and grading of fill before EVOH liner.			
Photographer's Signature:		Typed: Andrew Roberts	

SKETCH OF PHOTOGRAPH LOCATION

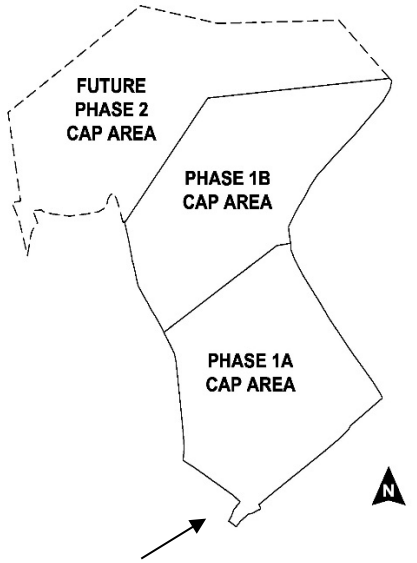


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 2	Filename: IMG_20161203_124511399	Date: 12/3/16	Time: 12:45 PM
Comments: Fill and grading work.			
Photographer's Signature:		Typed: Andrew Roberts	

SKETCH OF PHOTOGRAPH LOCATION

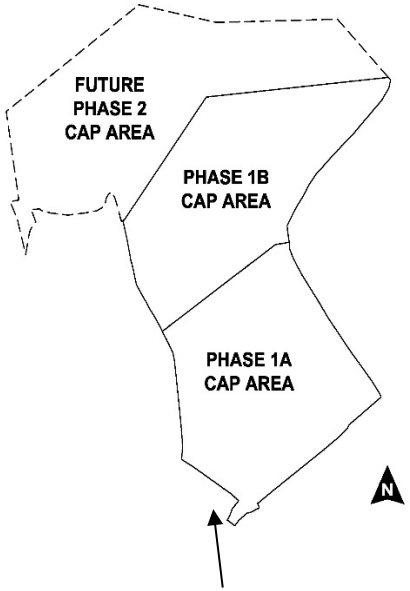


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 3	Filename: IMG_20161203_124513071	Date: 12/3/16	Time: 12:45 PM
Comments: Fill and grading work.			
Photographer's Signature:		Typed: Andrew Roberts	

SKETCH OF PHOTOGRAPH LOCATION

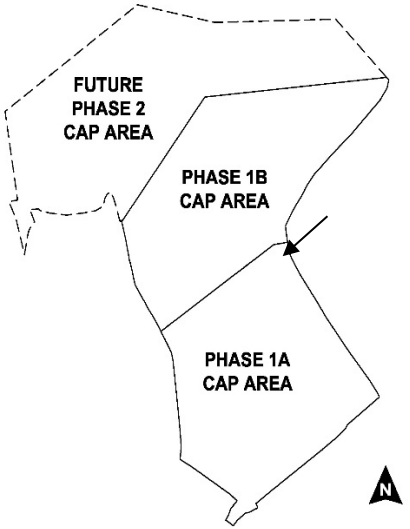


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 4	Filename: 20170321_153152	Date: 3/21/17	Time: 3:31 PM
Comments: Extension of Temperature Monitoring Probes (TMPs) to correct grade.			
Photographer's Signature: Arron Weber		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

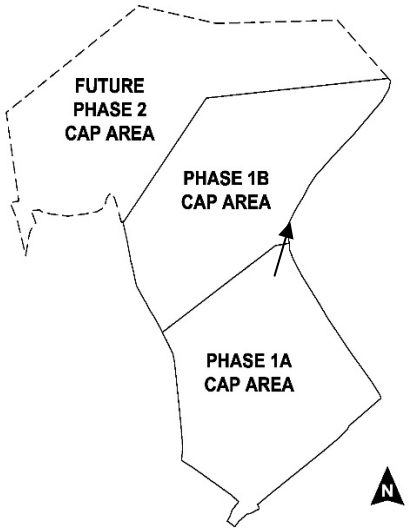


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 5	Filename: 20170322_085907	Date: 3/22/17	Time: 8:59 AM
Comments: Installation and maintenance of stormwater BMPs.			
Photographer's Signature: Arron Weber		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

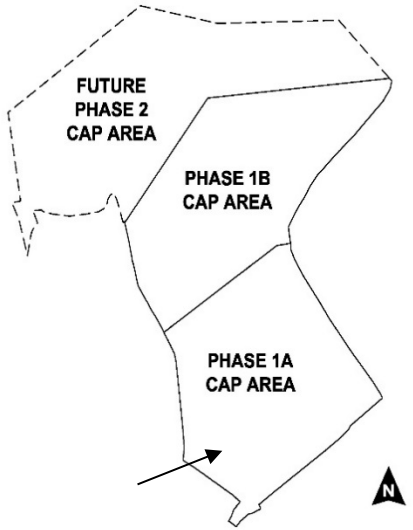


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 6	Filename: 20170515_110856	Date: 5/15/17	Time: 11:08 AM
Comments: Placement and grading of necessary fill soils.			
Photographer's Signature:		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

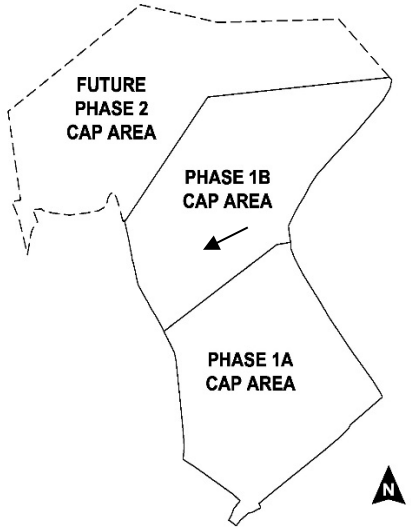


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 7	Filename: 20170516_151239	Date: 5/16/17	Time: 3:12 PM
Comments: Installation of geocomposite layer under EVOH liner for roads.			
Photographer's Signature: Arron Weber		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

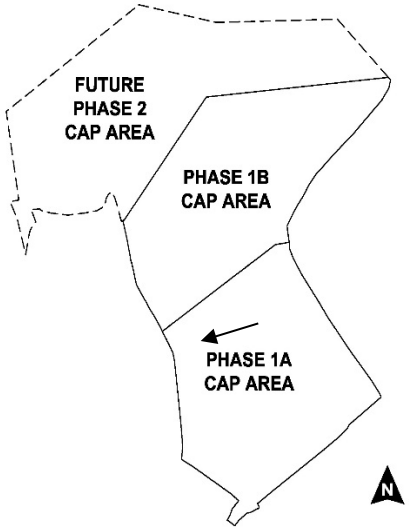


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 8	Filename: 20170522_132644	Date: 5/22/17	Time: 1:26 PM
Comments: Installation of geotextile and strip drains.			
Photographer's Signature: Arron Weber		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

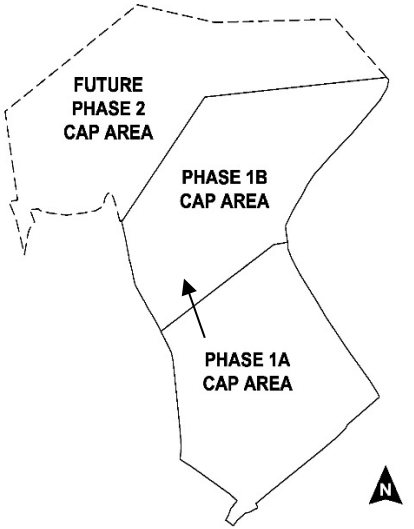


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 9	Filename: 20170522_132817	Date: 5/22/17	Time: 1:28 PM
Comments: Installation of geocomposite layer over EVOH liner for roads.			
Photographer's Signature: Arron Weber		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

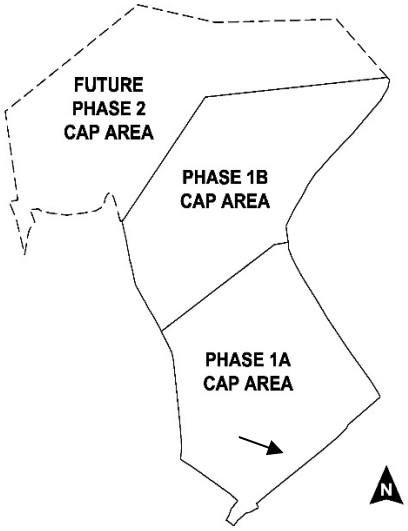


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 10	Filename: 20170530_144257	Date: 5/30/17	Time: 2:42 PM
Comments: Installation of gas header riser.			
Photographer's Signature: Arron Weber		Typed: Arron Weber	

SKETCH OF PHOTOGRAPH LOCATION

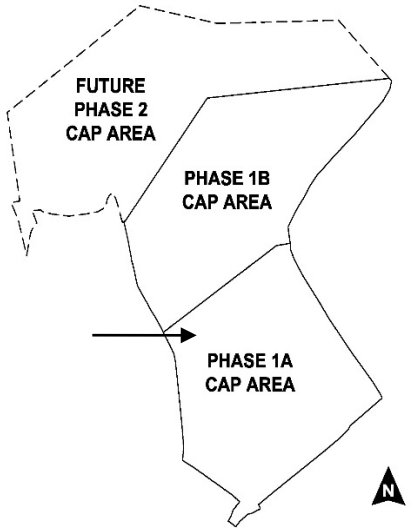


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 11	Filename: IMG_2209	Date: 6/1/17	Time: 11:06 AM
Comments: Installation of cushion geotextile.			
Photographer's Signature: BJD		Typed: Bradley DalSanto	

SKETCH OF PHOTOGRAPH LOCATION

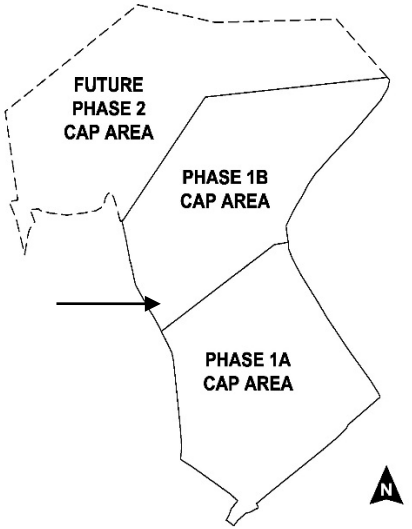


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 12	Filename: IMG_2210	Date: 6/1/17	Time: 11:35 AM
Comments: Installation of EVOH liner.			
Photographer's Signature: BJ DJS		Typed: Bradley DalSanto	

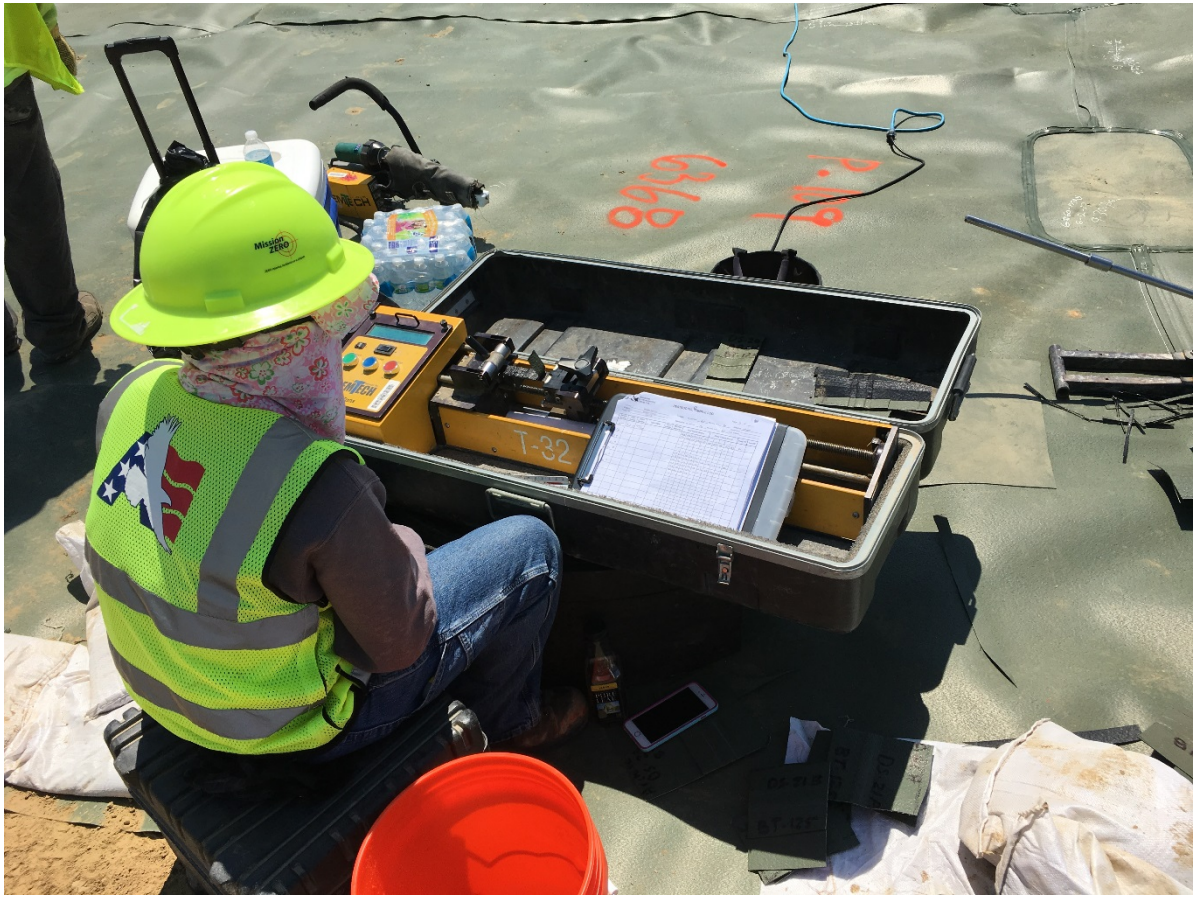
SKETCH OF PHOTOGRAPH LOCATION



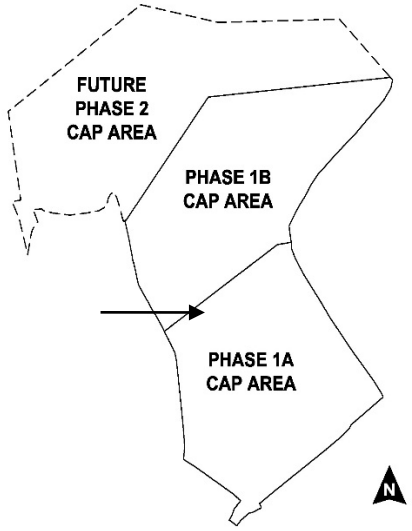
FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 13	Filename: IMG_2214	Date: 6/2/17	Time: 11:18 AM
Comments: Using field tensiometer on EVOH liner.			
Photographer's Signature: BJ D'Sto		Typed: Bradley DalSanto	



SKETCH OF PHOTOGRAPH LOCATION

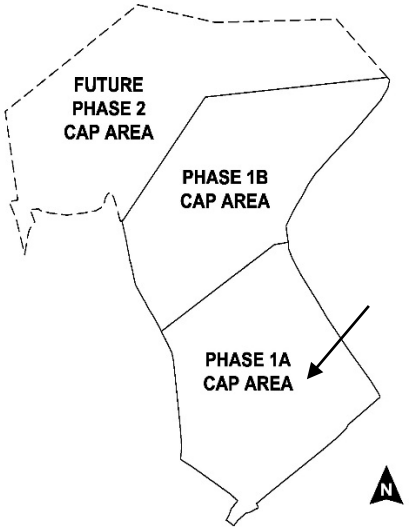


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH liner CQA		Project Number: BT-125	
Photograph: 14	Filename: IMG_2226	Date: 6/13/17	Time: 11:08 AM
Comments: Installation of gas piping.			
Photographer's Signature: BJD DJS		Typed: Bradley DalSanto	

SKETCH OF PHOTOGRAPH LOCATION

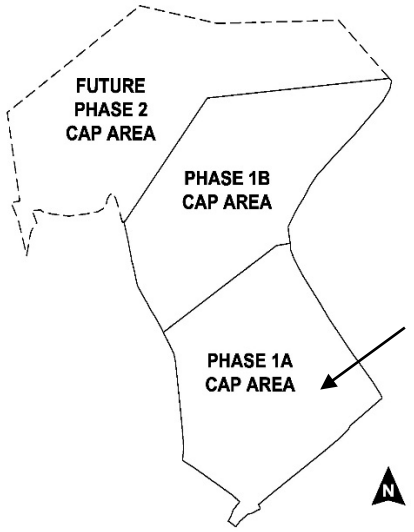


FEEZOR ENGINEERING, INC.

PHOTOGRAPHIC RECORD FORM

Project Name: North Quarry EVOH Liner CQA		Project Number: BT-125	
Photograph: 15	Filename: IMG_2227	Date: 6/13/17	Time: 11:09 AM
Comments: Air testing EVOH fusion weld.			
Photographer's Signature: BJD DJS		Typed: Bradley DalSanto	

SKETCH OF PHOTOGRAPH LOCATION



FEEZOR ENGINEERING, INC.

APPENDIX F

CONSTRUCTION CERTIFICATION DRAWINGS

Drawing 001	Title Page
Drawing 002	Summary of Site Works
Drawing 003	Grading Plan View
Drawing 004	EVOH Cover Undercap Plan View
Drawing 005	EVOH Cover Panel Layout Plan View
Drawing 006	EVOH Cover Overcap Plan View
Drawing 007	Details 1
Drawing 008	Details 2
Drawing 009	Details 3
Drawing 010	Details 4
Drawing 011	Details 5
Drawing 012	Details 6
Drawing 013	Details 7
Drawing 014	Details 8

AS-BUILT RECORD DRAWINGS FOR THE

BRIDGETON LANDFILL
NORTH QUARRY
PHASE 1 EVOH COVER

OCTOBER 2017
PREPARED FOR:

LOCATION MAP

N

BRIDGETON LANDFILL, LLC

13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

Engineering for a Better World
FEEZOR ENGINEERING, INC.

3377 HOLLENBERG DRIVE
BRIDGETON, MO 63044

INDEX OF DRAWINGS	
001	TITLE PAGE
002	SUMMARY OF SITE WORKS
003	GRADING PLAN VIEW
004	EVOH COVER UNDERCAP PLAN VIEW
005	EVOH COVER PANEL LAYOUT PLAN VIEW
006	EVOH COVER OVERCAP PLAN VIEW
007	DETAILS #1
008	DETAILS #2
009	DETAILS #3
010	DETAILS #4
011	DETAILS #5
012	DETAILS #6
013	DETAILS #7
014	DETAILS #8

Daniel R. Feezor, P.E.
STATE OF MISSOURI
DANIEL RICHARD FEEZOR
NUMBER PE-030292
PROFESSIONAL ENGINEER
10-11-17
MO P.E. No: PE-030292 Date

LEGEND

— — — —	SOLID WASTE BOUNDARY
GMP-4	GAS MONITORING PROBE
PZ-204-AS	PIEZOMETER MONITORING WELL
GEW-38	GAS EXTRACTION WELL
ITS1	INTERCEPTOR TRENCH SUMP
SEW-63	SURFACE EXTRACTION WELL
PEW-20	PERIMETER GAS EXTRACTION WELL
⋈	LFG ISOLATION VALVE
⋈	LEACHATE ISOLATION VALVE
	FLOW METER
GC	GRIT CHAMBER
LS	LIFT STATION
CT-1	CONDENSATE SUMP
CT/HC-1	CONDENSATE TRAP/HEADER CONNECTION SUMP
LS-1 LS-6	LEACHATE COLLECTION SUMP
HZ-1	HORIZONTAL COLLECTION SUMP
PS-15	PERIMETER SUMP
LCS-2D	LEACHATE COLLECTION SUMP
SC-B1	SURFACE COLLECTOR
TMP-9	TEMPERATURE MONITORING PROBE
GC-3	SUBSURFACE RCP WELLS
ET-2	TRENCH SUMP
IT-7	INTERCEPTION TRENCH RISER
PL-7	PERIMETER LEACHATE SUMP
●	WELL HEAD RISER
WB-1	WELL BORE BOOT
TS-1	TRENCH SUMP
OL-12	OVER LINER TIE IN POINT
	GAS INTERCEPTOR WELL
GIW-4	GAS INTERCEPTOR WELL/HEAT EXTRACTION POINT
CO	CLEAN OUT
GEW-38(S)	GAS EXTRACTION WELL WITH 4" STINGER
P	POWER PANEL
— L — L — L —	LEACHATE COLLECTION PIPING
— L — L — L —	DUAL CONTAINED LCS FORCEMAIN (SIZE VARIES)
— L — L — L —	DUAL CONTAINED PERIMETER FORCEMAIN (SIZE VARIES)
— L — L — L —	LEACHATE COLLECTION PIPING (SIZE VARIES)
— 6TD —	TOE DRAIN
— 4PU — 4PU —	4" PERFORATED TRENCH DRAIN
——	BUBBLE SUCKER
— 2A — 2A — 2A —	AIR LINE
— 2AU — 2AU — 2AU —	AIR LINE (PRESSURIZED BELOW GROUND)
— 6GU — 6GU — 6GU — 6GU —	BURIED LFG COLLECTION PIPING (SIZE VARIES)
— 2G — 2G —	2" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— 4G —	4" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— 6G —	6" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— 8G —	8" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— 10G —	10" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— 12G —	12" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— 18G — 18G —	18" ABOVE GROUND LFG COLLECTION HEADER PIPING
— 24G —	24" ABOVE GROUND LFG COLLECTION LATERAL PIPING
— A/FM —	2" PRESSURIZED AIR / 2" FORCEMAIN IN COMMON TRENCH
— E —	ABOVEGROUND ELECTRIC LINE
— UE — UE — UE —	UNDERGROUND ELECTRIC LINE
— W —	WATERMAIN
— NGAS — NGAS —	NATURAL GAS LINE
— FO — FO —	FIBER OPTIC LINE
— X — X — X —	FENCE LINE
— 4G — 4G —	INTERCEPTOR TRENCH
——	HEAT EXTRACTION EFFLUENT PIPING
——	HEAT EXTRACTION INFLUENT PIPING
☐	BUILDING
▨	EXISTING HAUL ROAD
▨	EXISTING EVOH GEOMEMBRANE
▨	AS-BUILT EVOH GEOMEMBRANE LIMITS

0 70 140
Feet

NOTES:

1. - GAS AND LIQUID EXTRACTION POINTS THAT HAVE BEEN TEMPORARILY DECOMMISSIONED (PHYSICALLY DISCONNECTED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO DECLINING GAS FLOWS), AND/OR ABANDONED, (PERMANENTLY AND PHYSICALLY REMOVED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO INABILITY TO COLLECT GAS) HAVE BEEN REMOVED FROM THE SITE INFRASTRUCTURE UPDATE.
2. - AERIAL TOPOGRAPHY PROVIDED BY COOPER AERIAL SURVEYS, INC. AND IS DATED DECEMBER 2, 2016

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

SUMMARY OF SITE WORKS

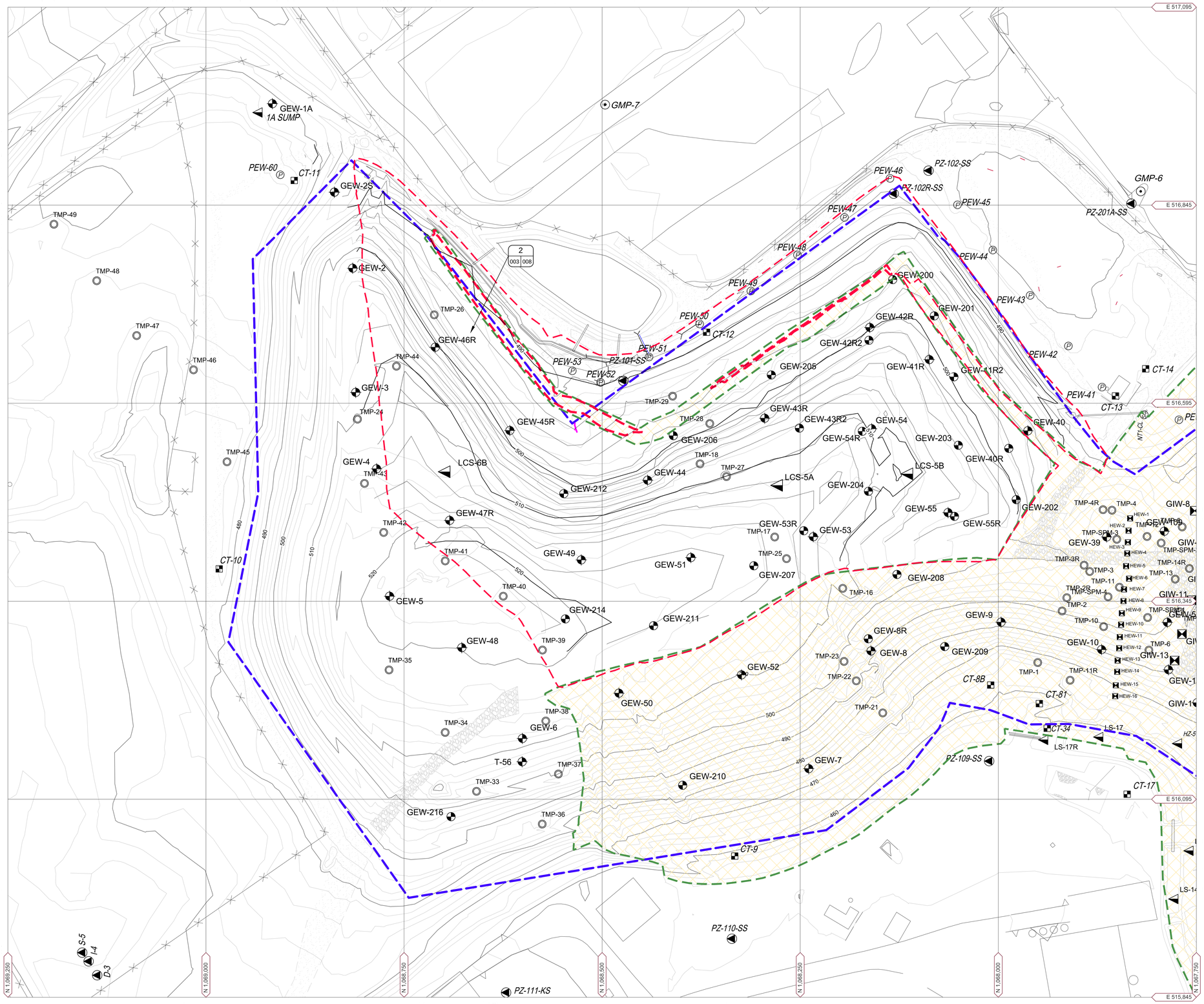
Engineering for a Better World
FEEZOR
ENGINEERING, INC.

OCTOBER 2017
DESIGNED BY: IN
APPROVED BY: DRF

REVISION	DATE

DRAWING NO.:
002

PROJECT NO: BT-125
FILE PATH: D:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg BJV Revisions 10062017



LEGEND

- SOLID WASTE BOUNDARY
- GMP-4 — GAS MONITORING PROBE
- PZ-204-AS — PIEZOMETER MONITORING WELL
- GEW-38 — GAS EXTRACTION WELL
- ITS1 — INTERCEPTOR TRENCH SUMP
- SEW-63 — SURFACE EXTRACTION WELL
- PEW-20 — PERIMETER GAS EXTRACTION WELL
- LFG ISOLATION VALVE
- LEACHATE ISOLATION VALVE
- FLOW METER
- GRIT CHAMBER
- LIFT STATION
- CT-1 — CONDENSATE SUMP
- CTANC-1 — CONDENSATE TRAP/HEADER CONNECTION SUMP
- LS-1, LS-6 — LEACHATE COLLECTION SUMP
- HZ-1 — HORIZONTAL COLLECTION SUMP
- PS-15 — PERIMETER SUMP
- LCS-2D — LEACHATE COLLECTION SUMP
- SC-B1 — SURFACE COLLECTOR
- TMP-9 — TEMPERATURE MONITORING PROBE
- GC-3 — SUBSURFACE RCP WELLS
- ET-2 — TRENCH SUMP
- IT-7 — INTERCEPTION TRENCH RISER
- PL-7 — PERIMETER LEACHATE SUMP
- WELL HEAD RISER
- WB-1 — WELL BORE BOOT
- TS-1 — TRENCH SUMP
- OL-12 — OVER LINER TIE IN POINT
- GAS INTERCEPTOR WELL
- GIW-4 — GAS INTERCEPTOR WELL/HEAT EXTRACTION POINT
- CLEAN OUT
- GEW-38(S) — GAS EXTRACTION WELL WITH 4" STINGER
- POWER PANEL
- AERIAL TOPOGRAPHY (2' CONTOUR)
- 500 — AERIAL TOPOGRAPHY (10' CONTOUR)
- AS-BUILT GRADING (2' CONTOUR)
- 500 — AS-BUILT GRADING (10' CONTOUR)
- EXISTING HAUL ROAD
- EXISTING EVOH GEOMEMBRANE
- AS-BUILT EVOH GEOMEMBRANE LIMITS

0 50 100 Feet

NOTES:

1. - GAS AND LIQUID EXTRACTION POINTS THAT HAVE BEEN TEMPORARILY DECOMMISSIONED (PHYSICALLY DISCONNECTED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO DECLINING GAS FLOWS), AND/OR ABANDONED, (PERMANENTLY AND PHYSICALLY REMOVED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO INABILITY TO COLLECT GAS) HAVE BEEN REMOVED FROM THE SITE INFRASTRUCTURE UPDATE.
2. - AERIAL TOPOGRAPHY PROVIDED BY COOPER AERIAL SURVEYS, INC. AND IS DATED DECEMBER 2, 2016

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

FEEZOR ENGINEERING, INC.
Engineering for a Better World

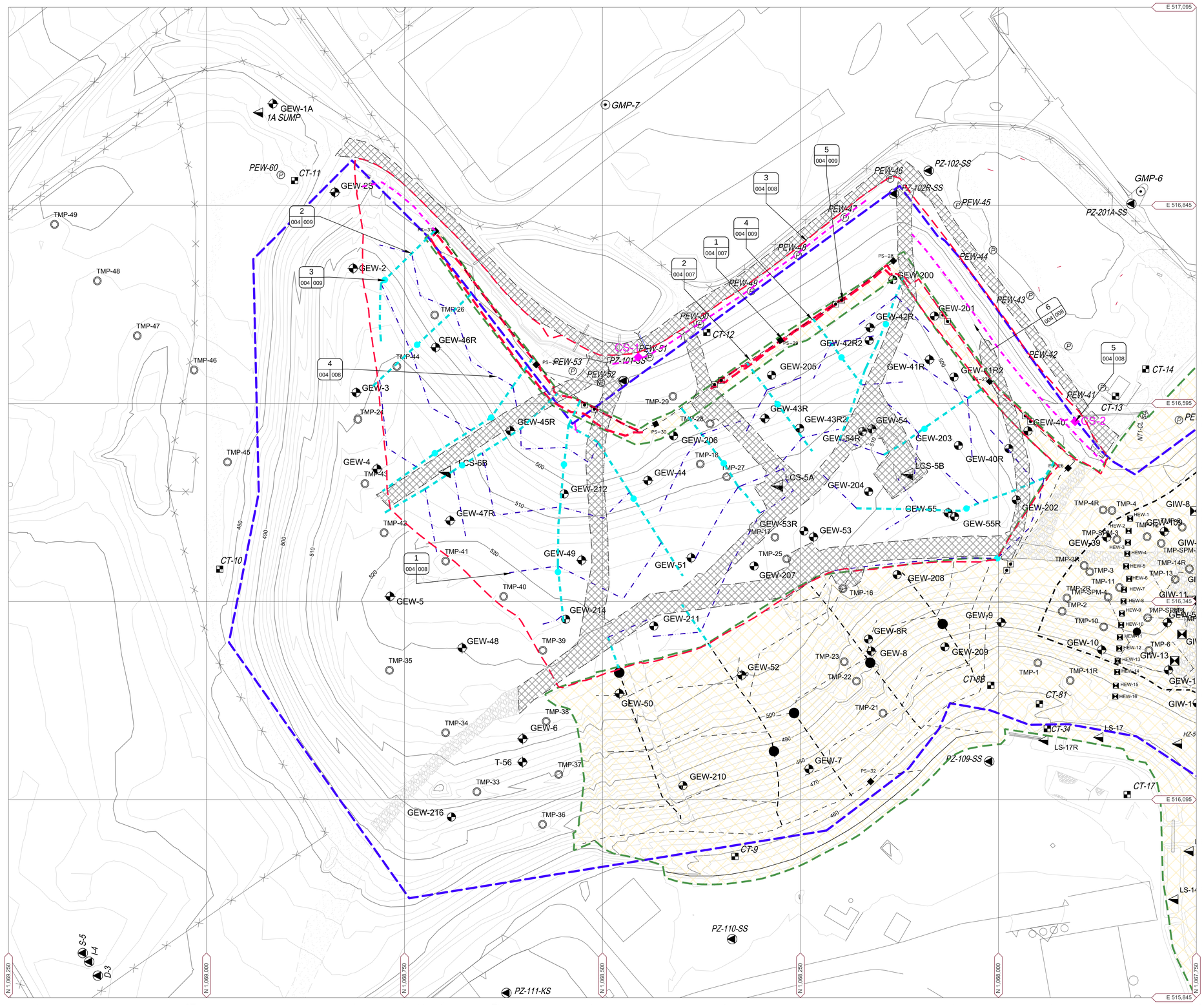
GRADING PLAN VIEW

PROJECT NO. BT-125 | FILE PATH: I:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg (MJ) Revisions 10052017

REVISION	DATE

OCTOBER 2017
DESIGNED BY: IN
APPROVED BY: DRF

DRAWING NO.:
003



LEGEND

- SOLID WASTE BOUNDARY
- GEW-38 — EXISTING GAS EXTRACTION WELL
- PEW-20 — EXISTING PERIMETER GAS EXTRACTION WELL
- CT-1 — EXISTING CONDENSATE SUMP
- CT/HC-1 — EXISTING CONDENSATE TRAP/HEADER CONNECTION SUMP
- LCS-2D — EXISTING LEACHATE COLLECTION SUMP
- TMP-9 — EXISTING TEMPERATURE MONITORING PROBE
- AERIAL TOPOGRAPHY (2' CONTOUR)
- 500 — AERIAL TOPOGRAPHY (10' CONTOUR)
- AS-BUILT GRADING (2' CONTOUR)
- 500 — AS-BUILT GRADING (10' CONTOUR)
- EXISTING PERIMETER COLLECTION DRAIN
- PS-30 — EXISTING PERIMETER COLLECTION DRAIN SUMP
- EXISTING DOWNSLOPE STRIP DRAIN COLLECTOR
- EXISTING DOWNSLOPE STRIP DRAIN COLLECTOR SUMP RISER
- EXISTING STRIP DRAIN
- PROPOSED DRAINAGE CHANNEL
- EXISTING EVOH GEOMEMBRANE
- AS-BUILT ROAD UNDERLAY GEOCOMPOSITE
- AS-BUILT EVOH GEOMEMBRANE LIMITS
- AS-BUILT STRIP DRAIN TOE COLLECTOR
- AS-BUILT EVOH DOWNSLOPE STRIP DRAIN COLLECTOR
- AS-BUILT STRIP DRAIN
- DOWNSLOPE STRIP DRAIN COLLECTOR RISER STUB
- CS-1 — CONDENSATE SUMP PUMP STATION FOR TOE STRIP DRAIN

0 50 100 Feet

NOTES:

1. - GAS AND LIQUID EXTRACTION POINTS THAT HAVE BEEN TEMPORARILY DECOMMISSIONED (PHYSICALLY DISCONNECTED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO DECLINING GAS FLOWS), AND/OR ABANDONED, (PERMANENTLY AND PHYSICALLY REMOVED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO INABILITY TO COLLECT GAS) HAVE BEEN REMOVED FROM THE SITE INFRASTRUCTURE UPDATE.
2. - SEE DRAWING 002 FOR EXISTING UTILITIES LEGEND
3. - AERIAL TOPOGRAPHY PROVIDED BY COOPER AERIAL SURVEYS, INC. AND IS DATED DECEMBER 2, 2016

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

Engineering for a Better World
FEEZOR ENGINEERING, INC.

OCTOBER 2017
DESIGNED BY: IN
APPROVED BY: DRF

DRAWING NO.:
004

EVOH COVER UNDERCAP PLAN VIEW

PROJECT NO: BT-125 | FILE PATH: I:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg &JV Revisions 10062017

REVISION | DATE

E 516,800

E 516,600

E 516,400

N 1,068,800

N 1,068,600

N 1,068,400

N 1,068,200

N 1,068,000

LEGEND

- BASE TOPOGRAPHY (2' CONTOUR)
- 500 — BASE TOPOGRAPHY (10' CONTOUR)
- PERMITTED BOUNDARY
- EXISTING EVOH CAP BOUNDARY
- EXISTING PERIMETER TOE DRAIN TRENCH
- AS-BUILT LINER PERIMETER
- P150 — EVOH PANEL ID
- EVOH REPAIR LOCATION
- R-150 — EVOH REAPIR ID
- DS-26 — DESTRUCT LOCATION

0 30 60 Feet

NOTE:

1. - AERIAL BASE TOPOGRAPHY WAS PROVIDED BY COOPER AERIAL SURVEYS CO. AND IS DATED DECEMBER 2, 2016
2. - AS-BUILT SURVEY DATA WAS PROVED BY FEEZOR ENGINEERING INC. (FEI)
3. - EXISTING SITE UTILITIES AND INFRASTRUCTURE ARE NOT DISPLAYED TO PROVIDE BETTER CLARITY

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

EVOH COVER PANEL LAYOUT PLAN VIEW

Engineering for a Better World
FEEZOR ENGINEERING, INC.

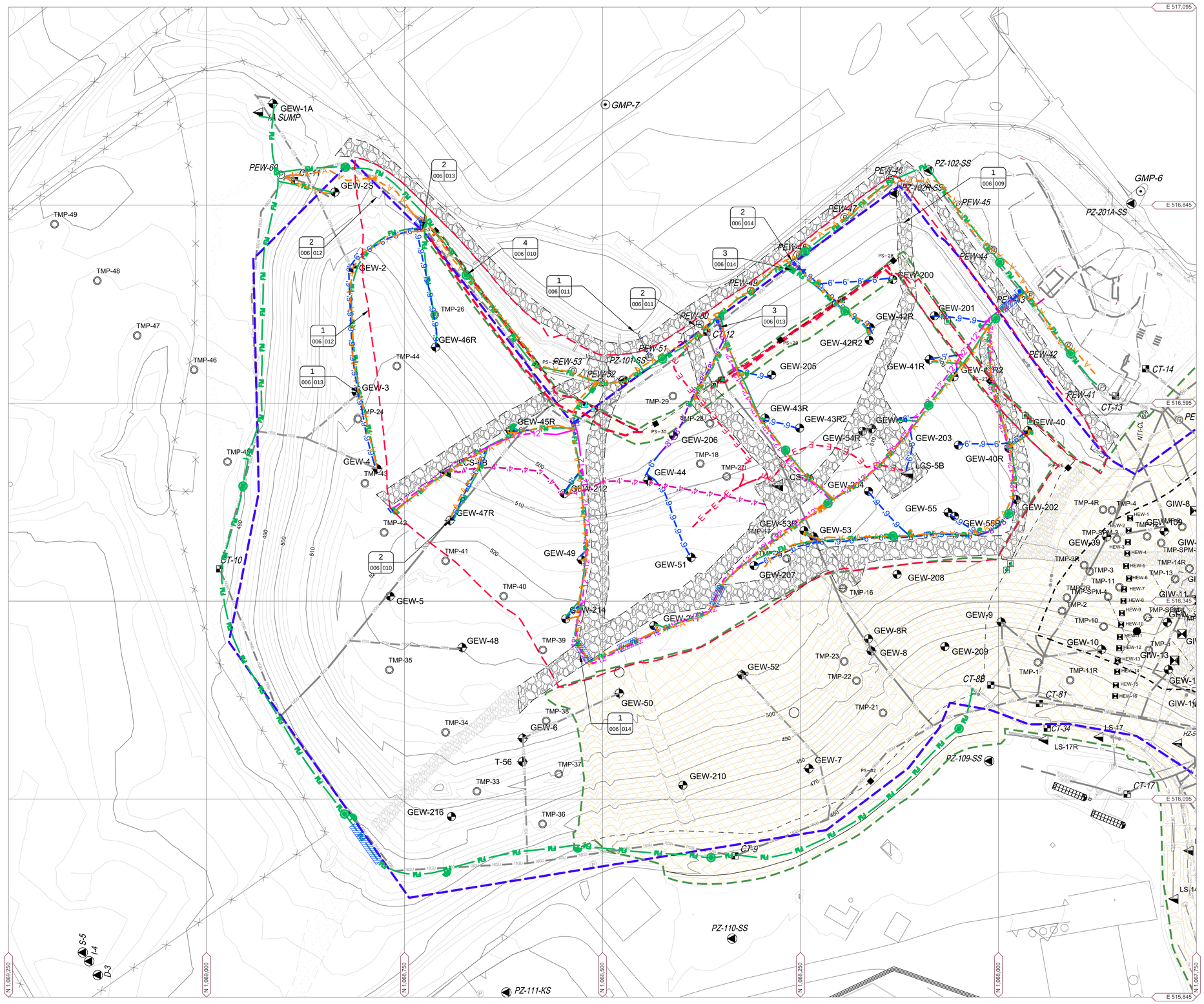
PROJECT NO: BT-125

FILE PATH: K:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg BJV Revisions 10082017\BT-125 AB 005 (EVOH Cover Panel Layout Plan View).A...

OCTOBER 2017	
DESIGNED BY: IN	
APPROVED BY: DRF	
REVISION	DATE

DRAWING NO.:

005



LEGEND

- SOLID WASTE BOUNDARY
- EXISTING GAS EXTRACTION WELL
- EXISTING PERIMETER GAS EXTRACTION WELL
- EXISTING CONDENSATE SUMP
- EXISTING CONDENSATE TRAP/HEADER CONNECTION SUMP
- EXISTING LEACHATE COLLECTION SUMP
- EXISTING TEMPERATURE MONITORING PROBE
- AERIAL TOPOGRAPHY (2' CONTOUR)
- AERIAL TOPOGRAPHY (10' CONTOUR)
- AS-BUILT GRADING (2' CONTOUR)
- AS-BUILT GRADING (10' CONTOUR)
- AS-BUILT HAUL ROAD
- EXISTING PERIMETER COLLECTION DRAIN
- EXISTING PERIMETER COLLECTION DRAIN SUMP
- EXISTING EVOH GEOMEMBRANE
- AS-BUILT EVOH GEOMEMBRANE LIMITS
- AS-BUILT DUAL-CONTAINED FORCEMAIN
- AS-BUILT LANDFILL GAS HEADER - 4 INCH
- AS-BUILT LANDFILL GAS HEADER - 6 INCH
- AS-BUILT LANDFILL GAS HEADER - 8 INCH
- AS-BUILT LANDFILL GAS HEADER - 12 INCH
- AS-BUILT LANDFILL GAS HEADER - 18 INCH
- AS-BUILT AIRLINE
- AS-BUILT ELECTRICAL LINES
- AS-BUILT HEADER ACCESS RISER
- AS-BUILT BLIND FLANGE
- AS-BUILT ROAD CROSSING
- AS-BUILT ISOLATION VALVE
- AS-BUILT AIRLINE ISOLATION VALVE
- AS-BUILT FORCEMAIN ISOLATION VALVE VAULT
- AS-BUILT FORCEMAIN CLEANOUT RISER
- AS-BUILT END CAP
- AS-BUILT DUAL CONTAINED TEE & END CAP
- AS-BUILT 6 IN GAS STICKUP
- AS-BUILT 6 IN FORCEMAIN STICKUP
- AS-BUILT 8 IN CLEANOUT STICKUP
- AS-BUILT 6 IN CLEANOUT STICKUP

0 50 100 Feet

NOTES:

1. - GAS AND LIQUID EXTRACTION POINTS THAT HAVE BEEN TEMPORARILY DECOMMISSIONED (PHYSICALLY DISCONNECTED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO DECLINING GAS FLOWS), AND/OR ABANDONED, (PERMANENTLY AND PHYSICALLY REMOVED FROM THE COLLECTION AND CONTROL SYSTEM DUE TO INABILITY TO COLLECT GAS) HAVE BEEN REMOVED FROM THE SITE INFRASTRUCTURE UPDATE.
2. - SEE DRAWING 002 FOR EXISTING UTILITIES LEGEND
3. - SOME OF THE INFRASTRUCTURE ARE TURNED OFF FOR CLEARER REPRESENTATION
4. - AERIAL TOPOGRAPHY PROVIDED BY COOPER AERIAL SURVEYS, INC. AND IS DATED DECEMBER 2, 2016

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

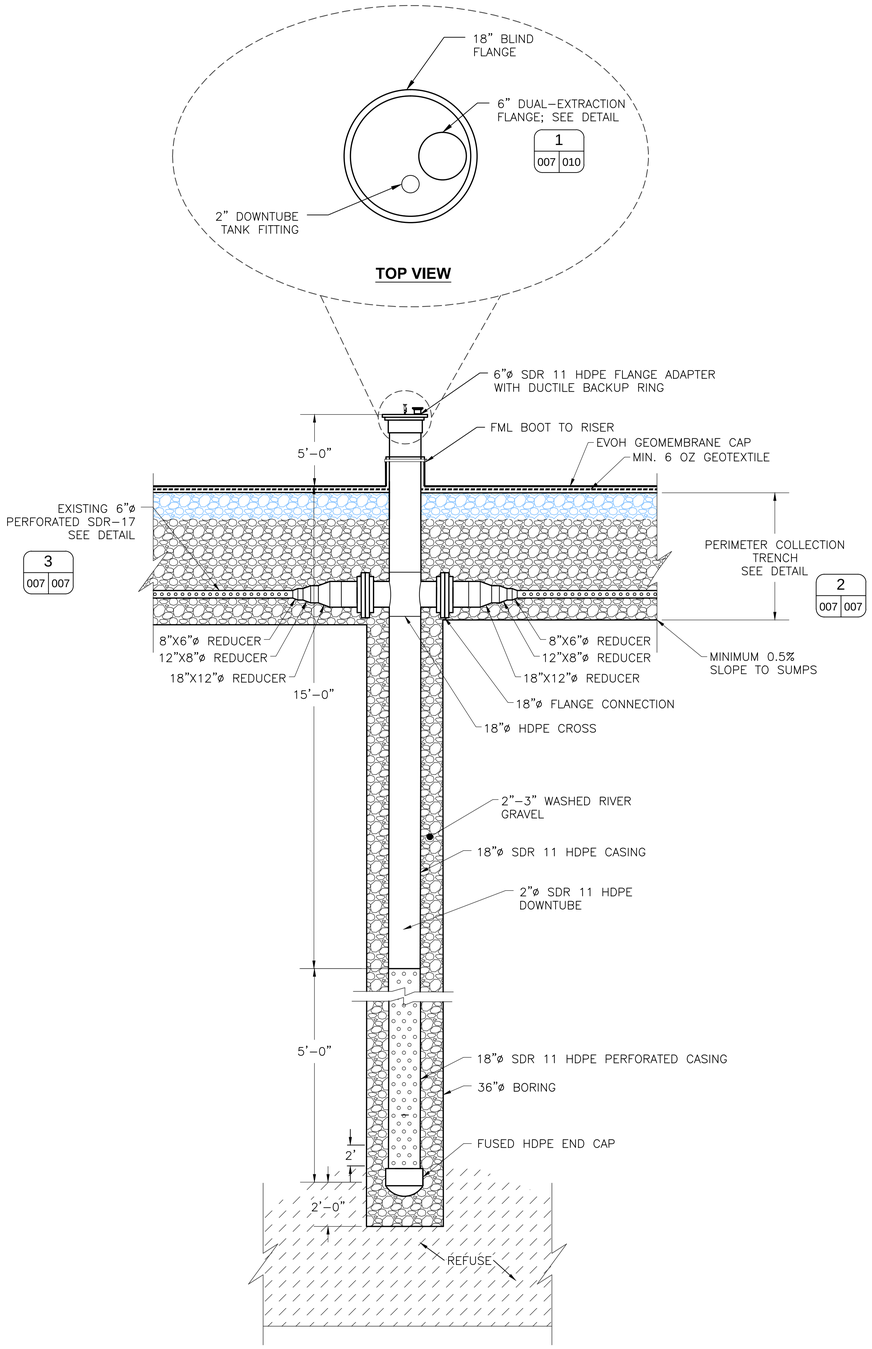
BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

Engineering for a Better World
FEEZOR ENGINEERING, INC.

EVOH COVER OVERCAP PLAN VIEW

OCTOBER 2017	DRAWING NO.:
DESIGNED BY: IN	006
APPROVED BY: DRF	

PROJECT NO: BT-125 | FILE PATH: O:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg &JV Revisions 10062017 | REVISION | DATE

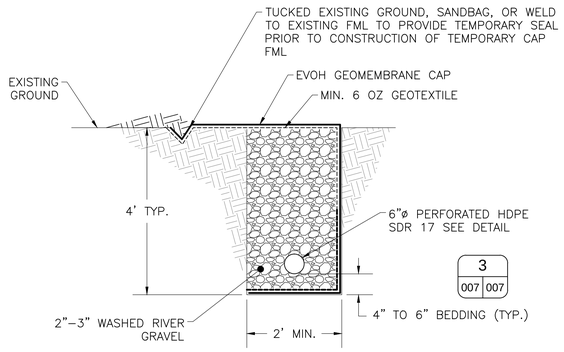


1 004 007 EXISTING PERIMETER COLLECTION SUMP

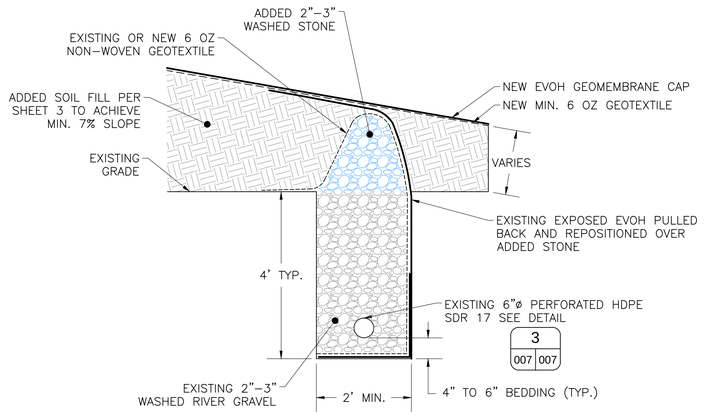
NTS

NOTE:

1. INSTALLED PRIOR TO INITIATION OF NORTH QUARRY PHASE 1 EVOH COVER SYSTEM PROJECT.



EXISTING CONFIGURATION



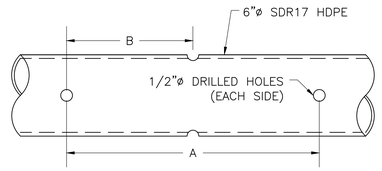
COMPLETED CONSTRUCTION

2 004 007 PERIMETER COLLECTION TRENCH

NTS

NOTE:

1. INSTALLED PRIOR TO INITIATION OF NORTH QUARRY PHASE 1 EVOH COVER SYSTEM PROJECT.



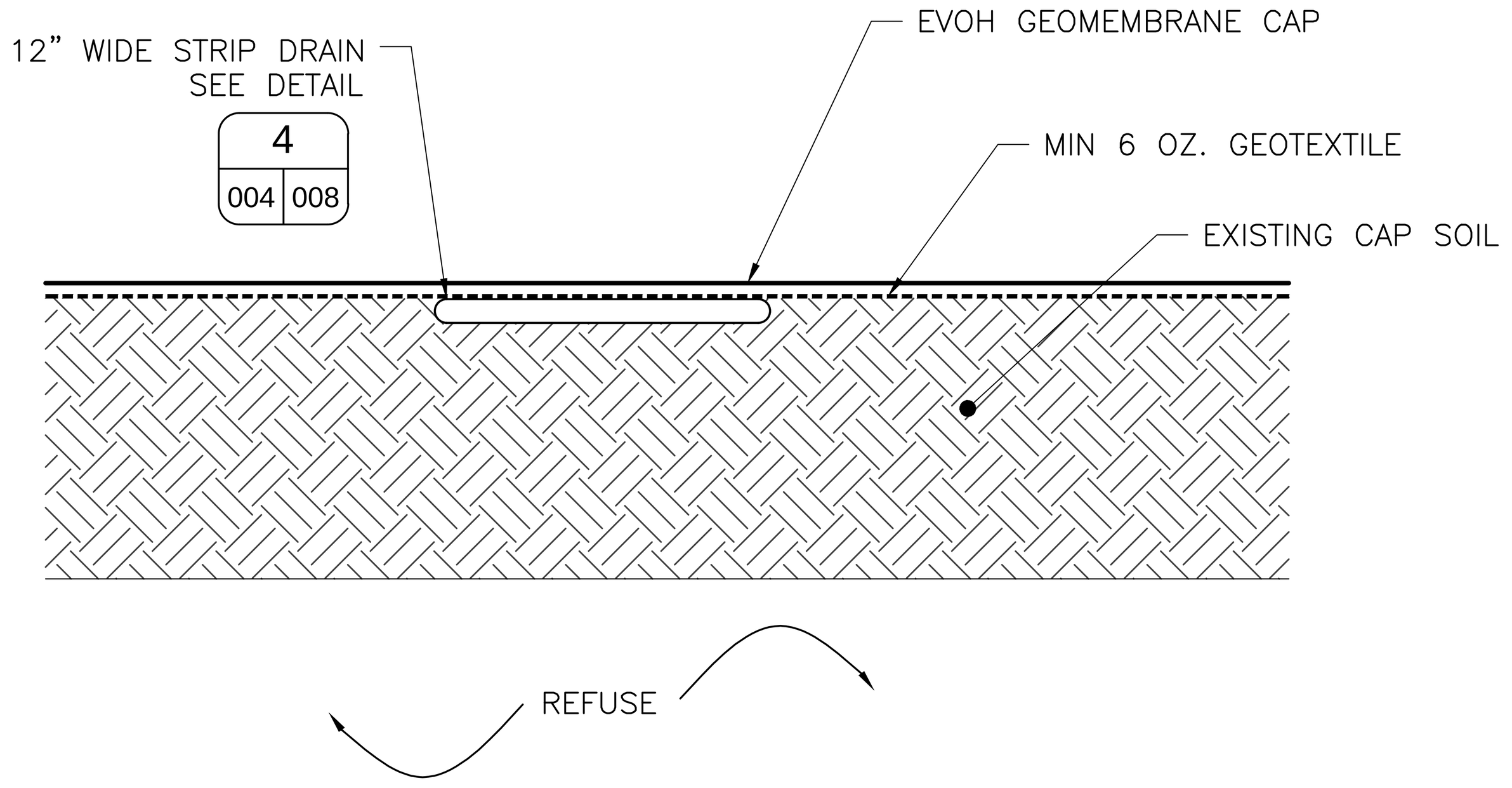
3 007 007 EXISTING PERIMETER COLLECTION PIPE

NTS

NOTE:

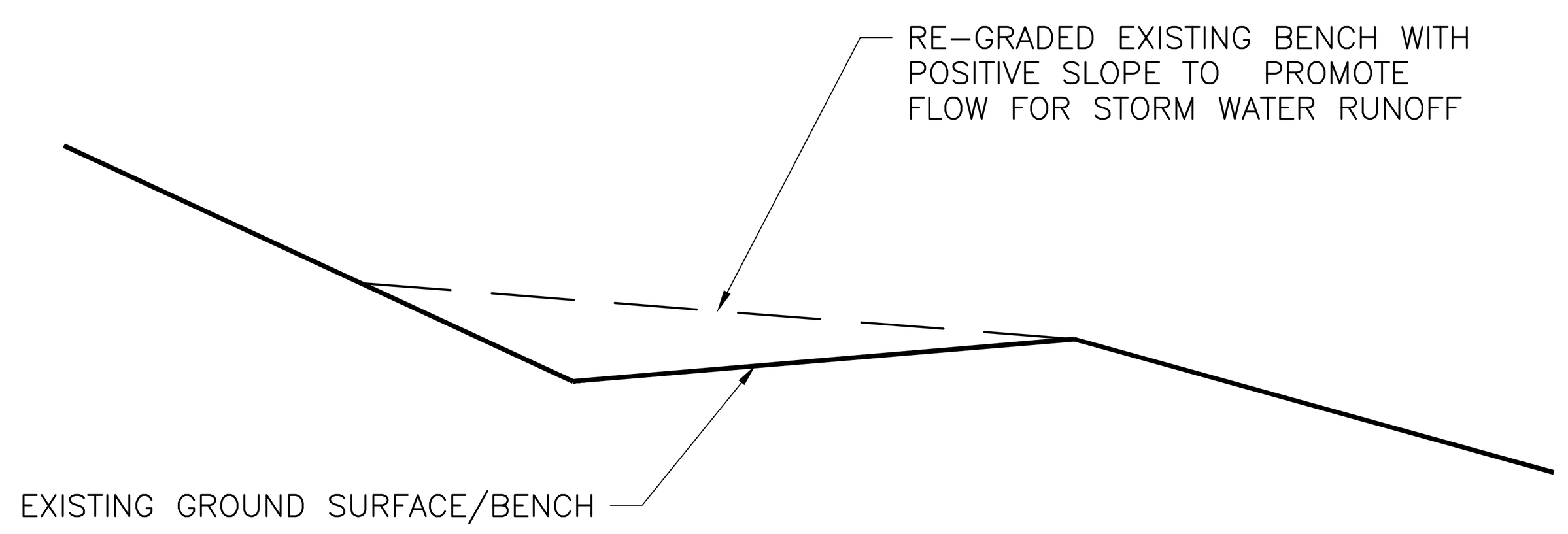
1. A=20"
   B=10"
   90° ROTATION BETWEEN ROWS
2. INSTALLED PRIOR TO INITIATION OF NORTH QUARRY PHASE 1 EVOH COVER SYSTEM PROJECT.

BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL NORTH QUARRY EVOH COVER PHASE 1	Engineering for a Better World FEEZOR ENGINEERING, INC.	OCTOBER 2017 DESIGNED BY: IN APPROVED BY: DRF
DETAILS #1			DRAWING NO.: **007**
PROJECT NO: BT-125	FILE PATH: C:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg SJV Revisions 10082017\BT-125-AB-007-014 (Details).dwg	REVISION	DATE



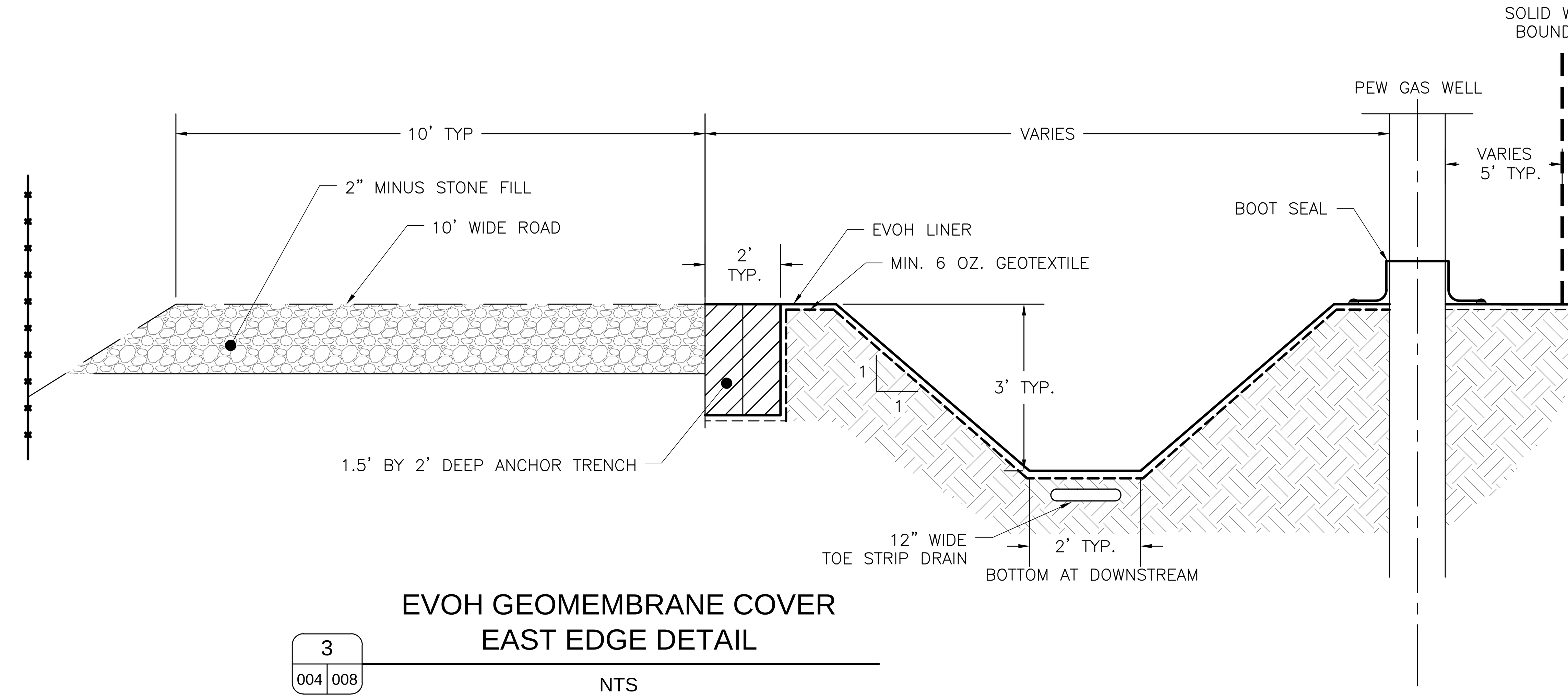
1 (004 008) TYPICAL EVOH GEOMEMBRANE CAP

NTS



2 (003 008) EXISTING BENCH RE-GRADE

NTS

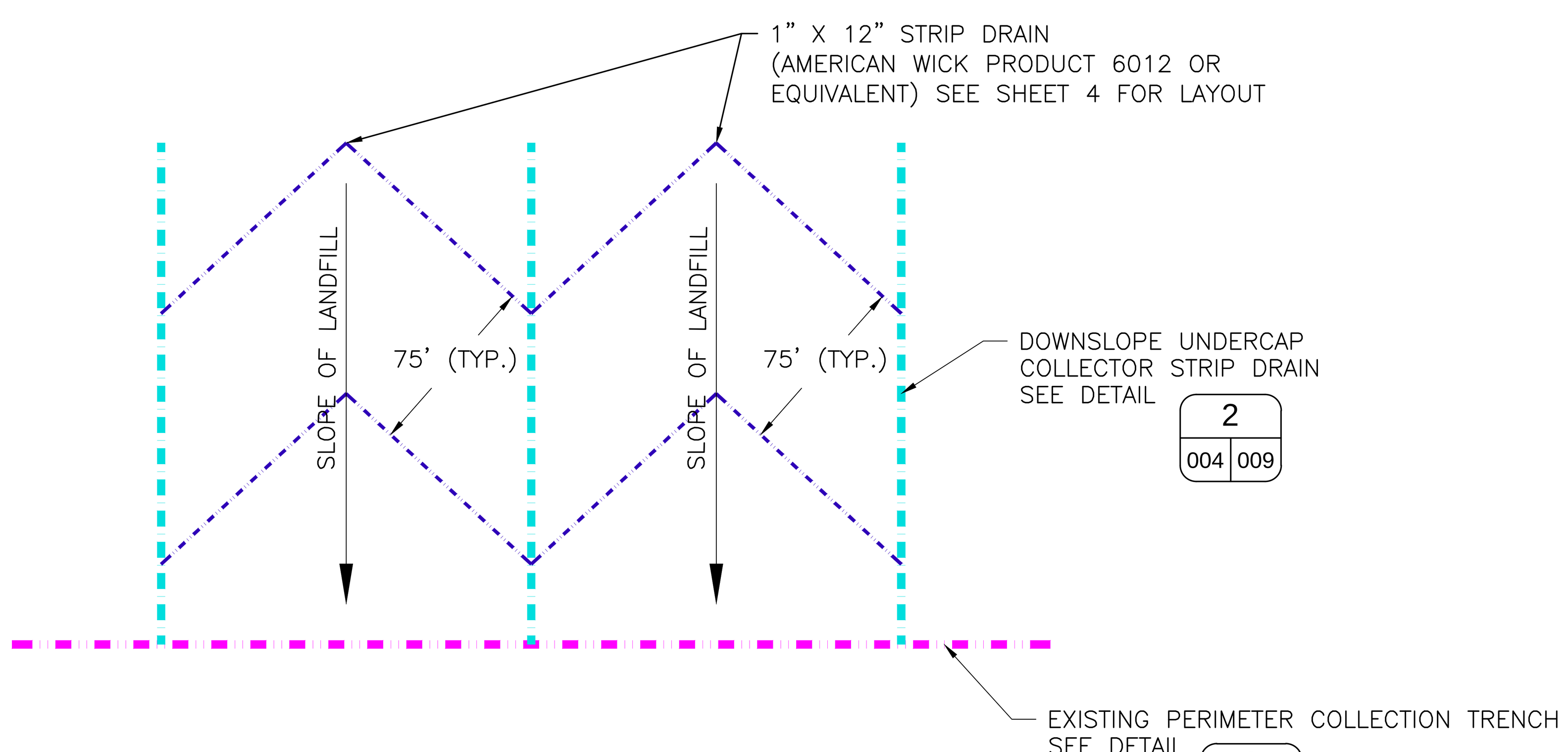


3 (004 008) EVOH GEOMEMBRANE COVER EAST EDGE DETAIL

NTS

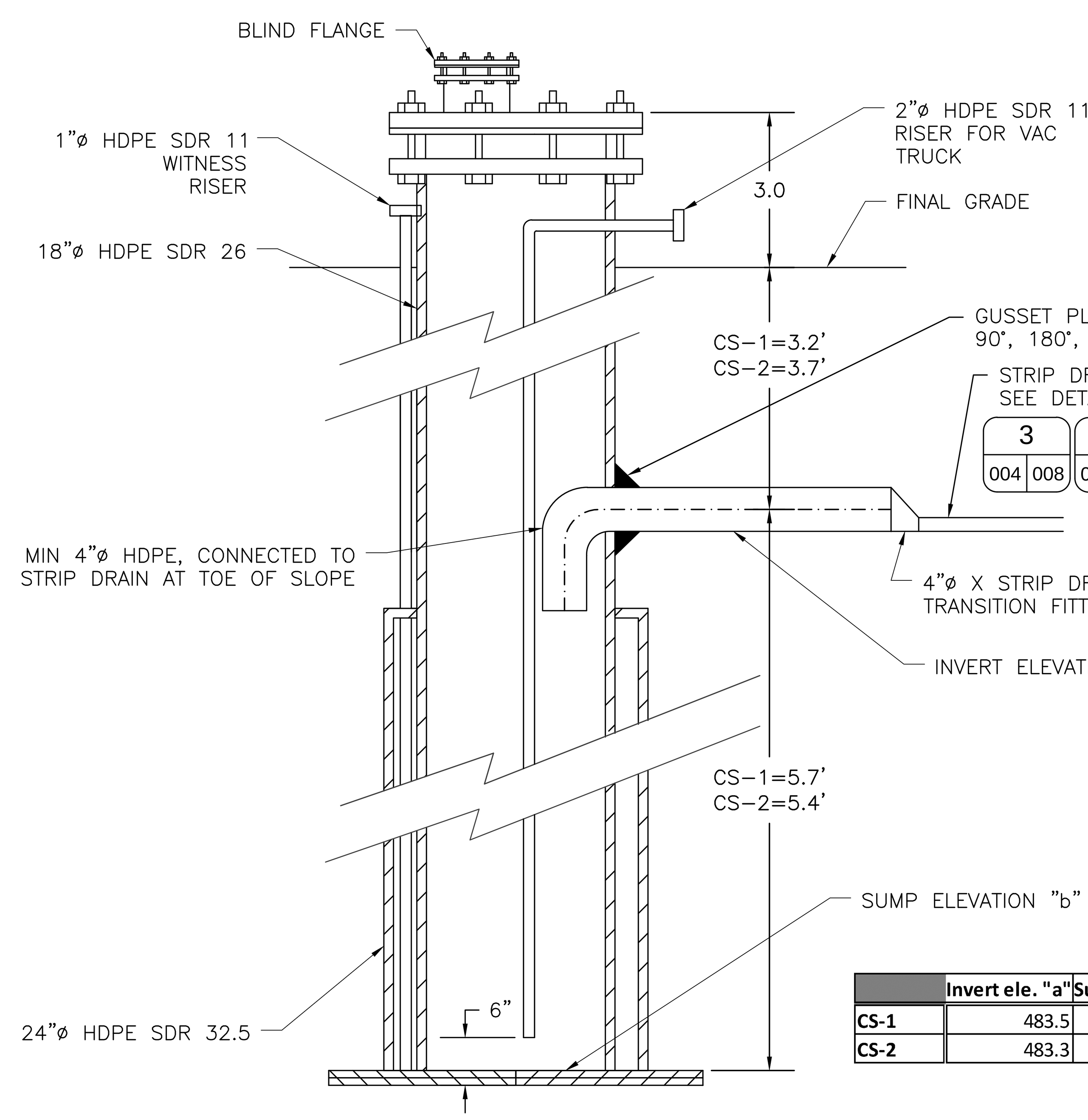
NOTE:

STRIP DRAIN DRAINS TO CONTAINMENT SUMP CS-1



4 (004 008) STRIP DRAIN INSTALLATION

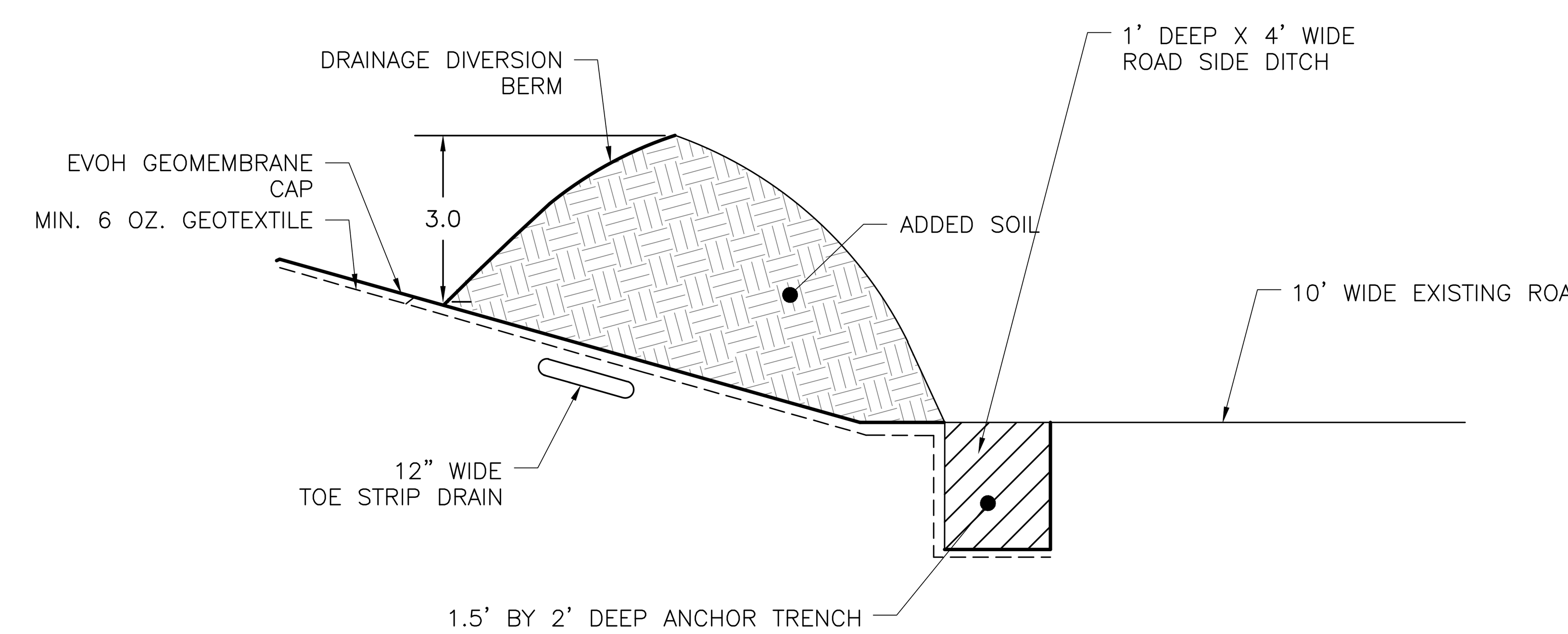
NTS



	Invert ele. "a"	Sump ele. "b"
CS-1	483.5	477.9
CS-2	483.3	478.0

5 (004 008) CONTAINMENT SUMP PUMP STATION FOR TOE STRIP DRAIN

NTS



6 (004 008) EVOH GEOMEMBRANE COVER SOUTH EDGE DETAIL

NTS

NOTE:

STRIP DRAIN DRAINS TO CONTAINMENT SUMP CS-2

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

DETAILS #2

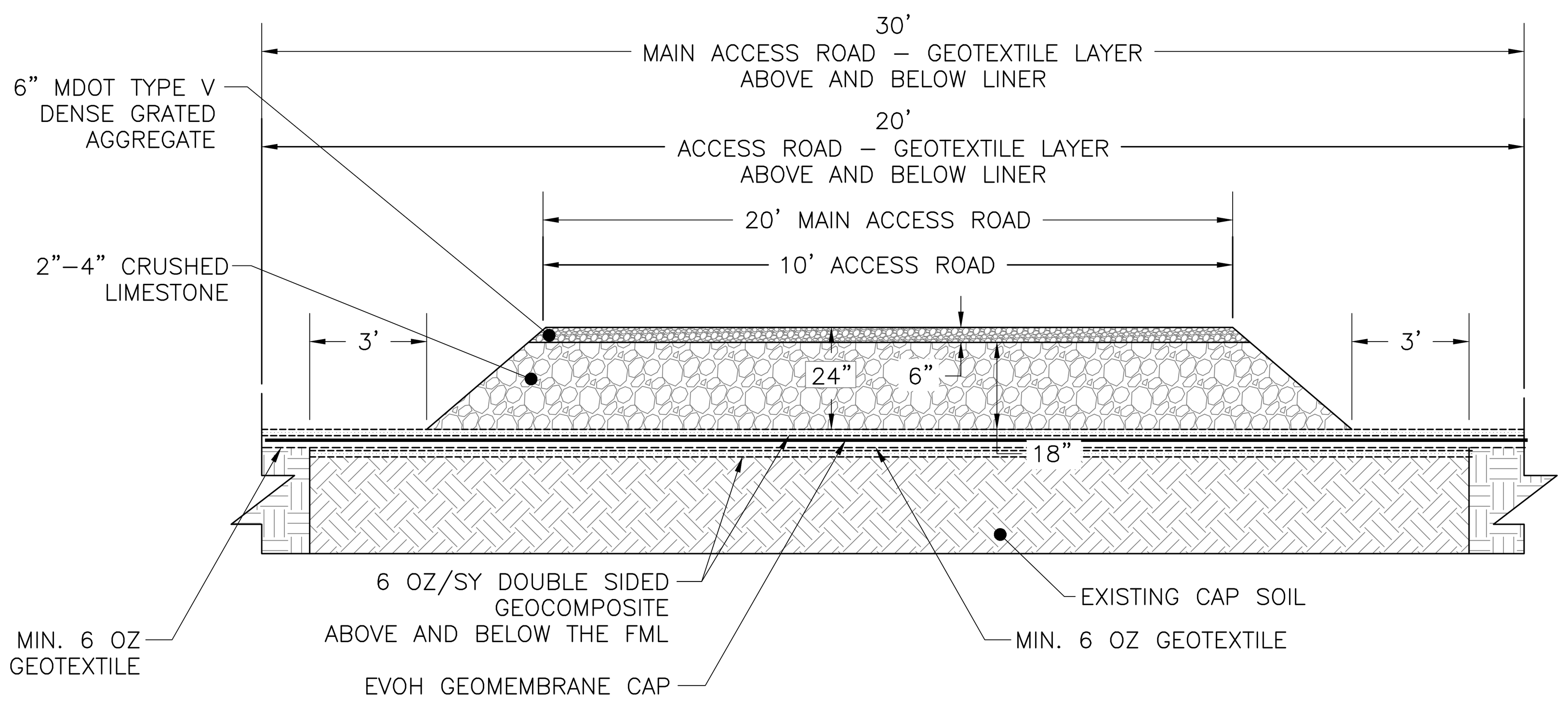
Engineering for a Better World
FEEZOR ENGINEERING, INC.

OCTOBER 2017
DESIGNED BY: IN
APPROVED BY: DRF

REVISION | DATE

DRAWING NO.: 008

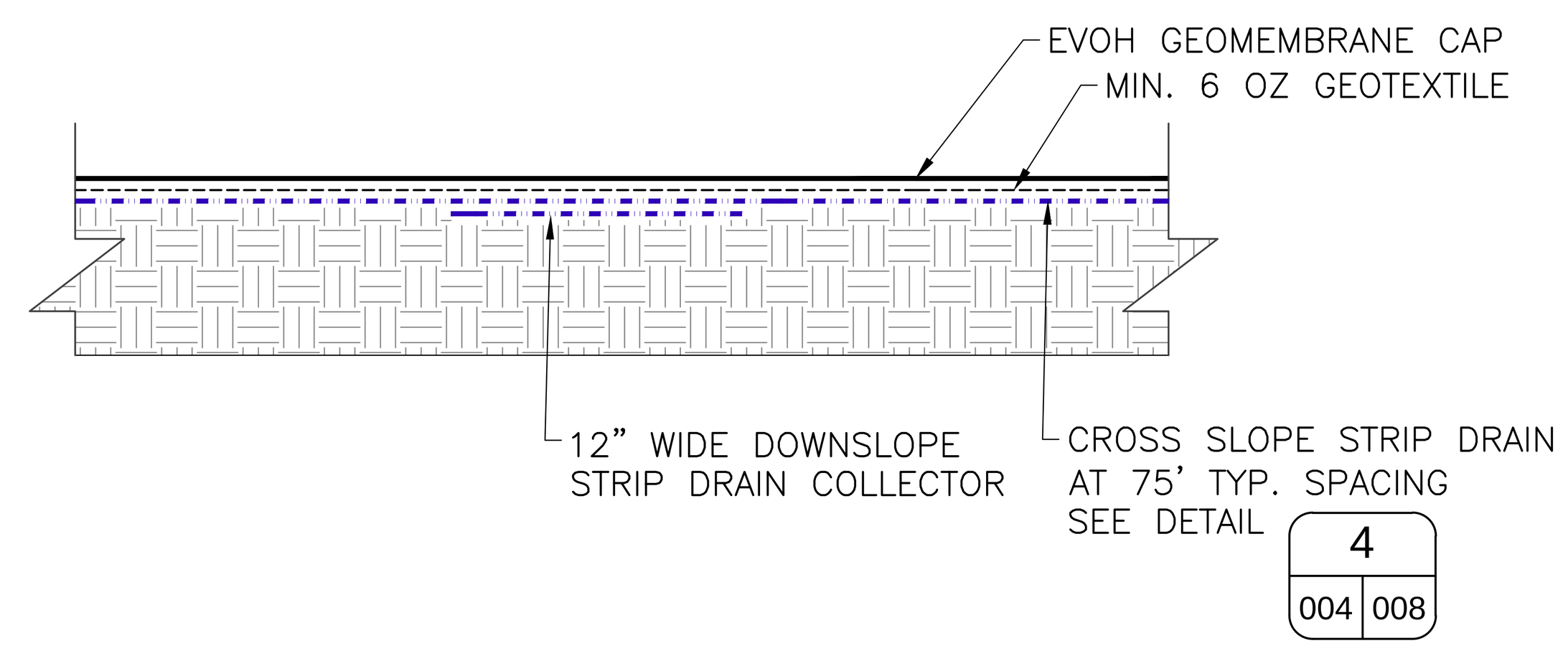
PROJECT NO: BT-125 | FILE PATH:



1 | 006 | 009

LIGHT-DUTY ACCESS ROAD

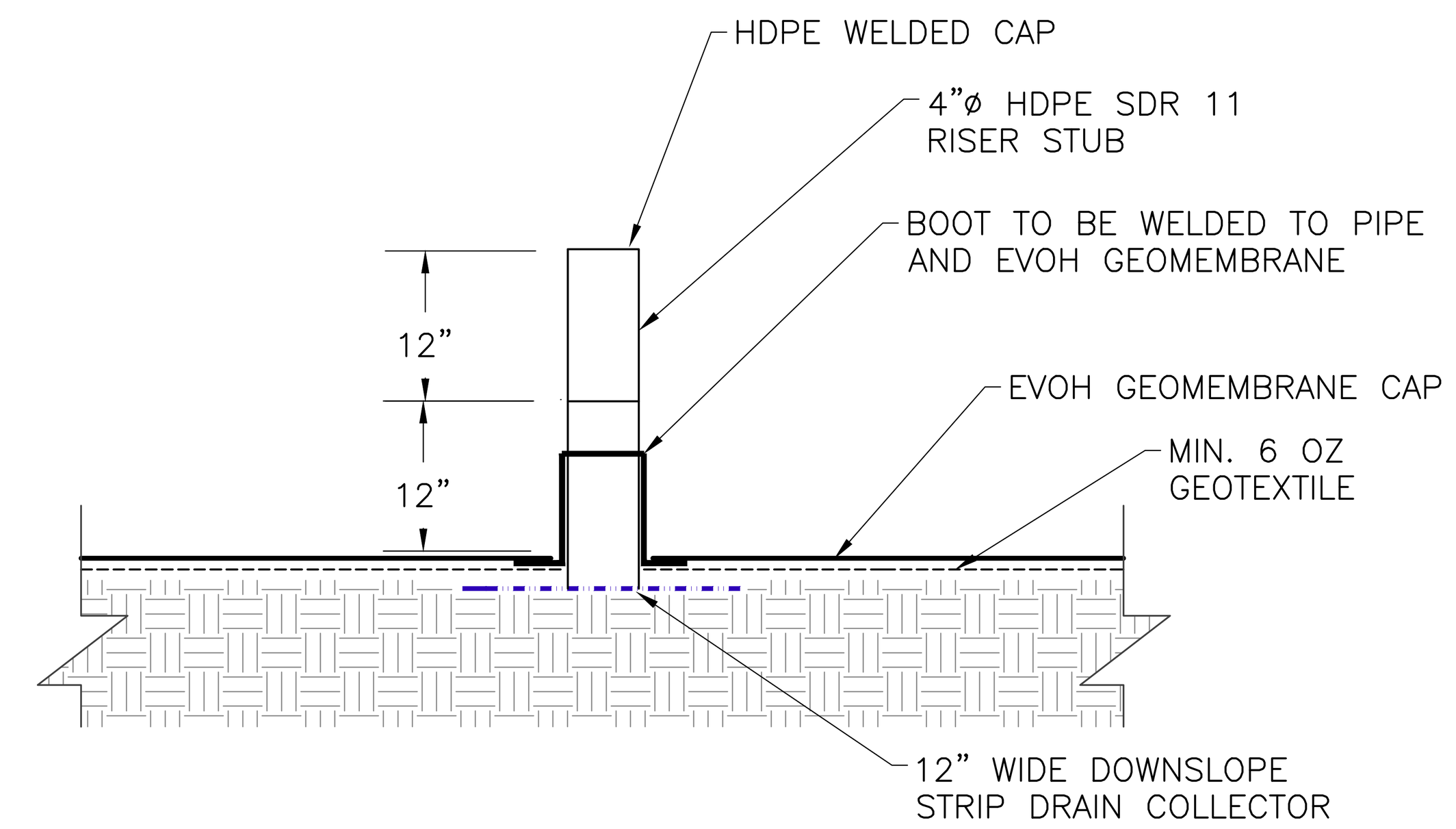
NTS



2 | 004 | 009

12" WIDE DOWNSLOPE STRIP DRAIN COLLECTOR

NTS



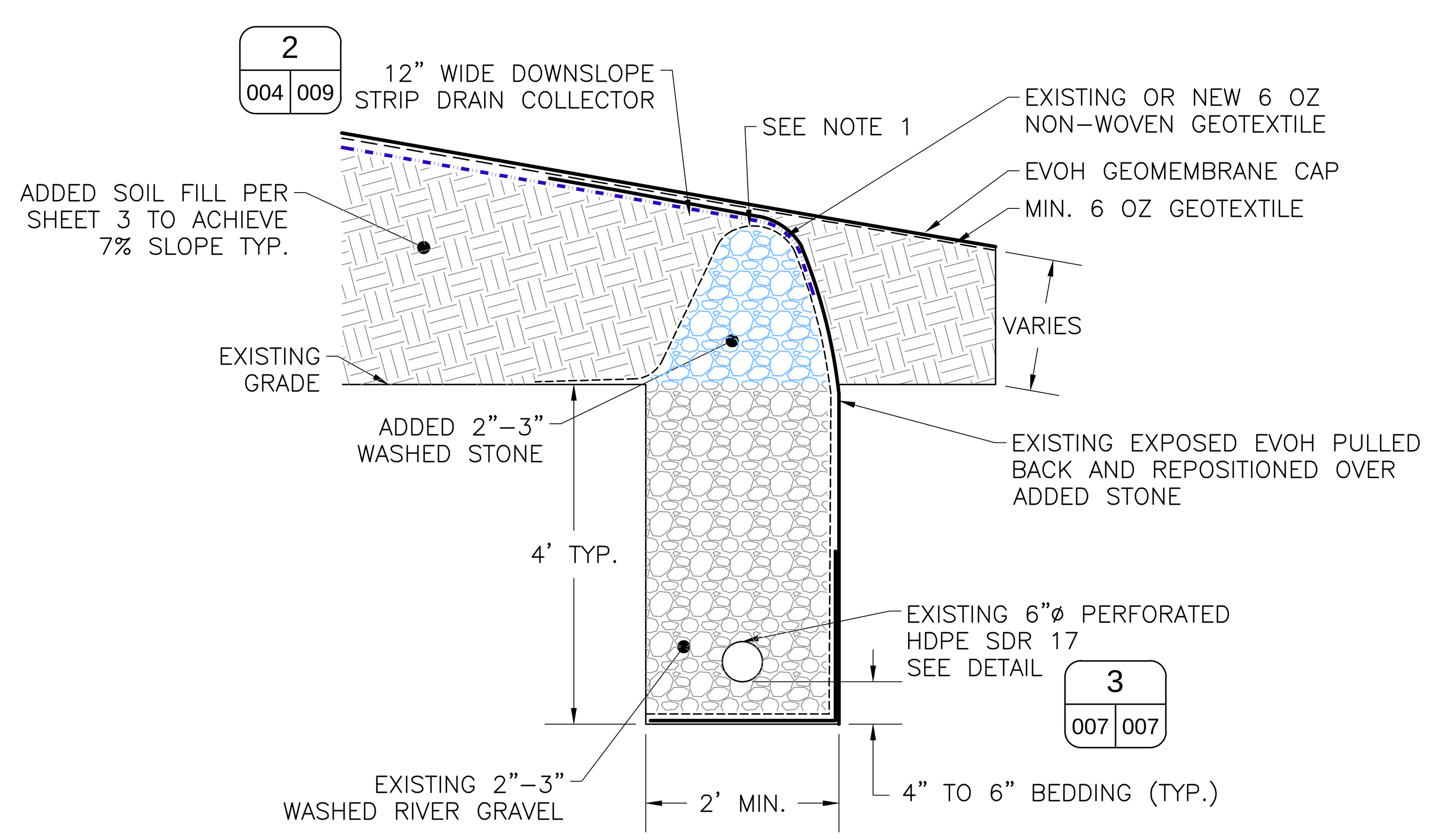
3 | 004 | 009

DOWNSLOPE STRIP DRAIN COLLECTOR RISER STUB

NTS

NOTES:

1. SEE SHEET 4 FOR RISER STUB LOCATIONS.



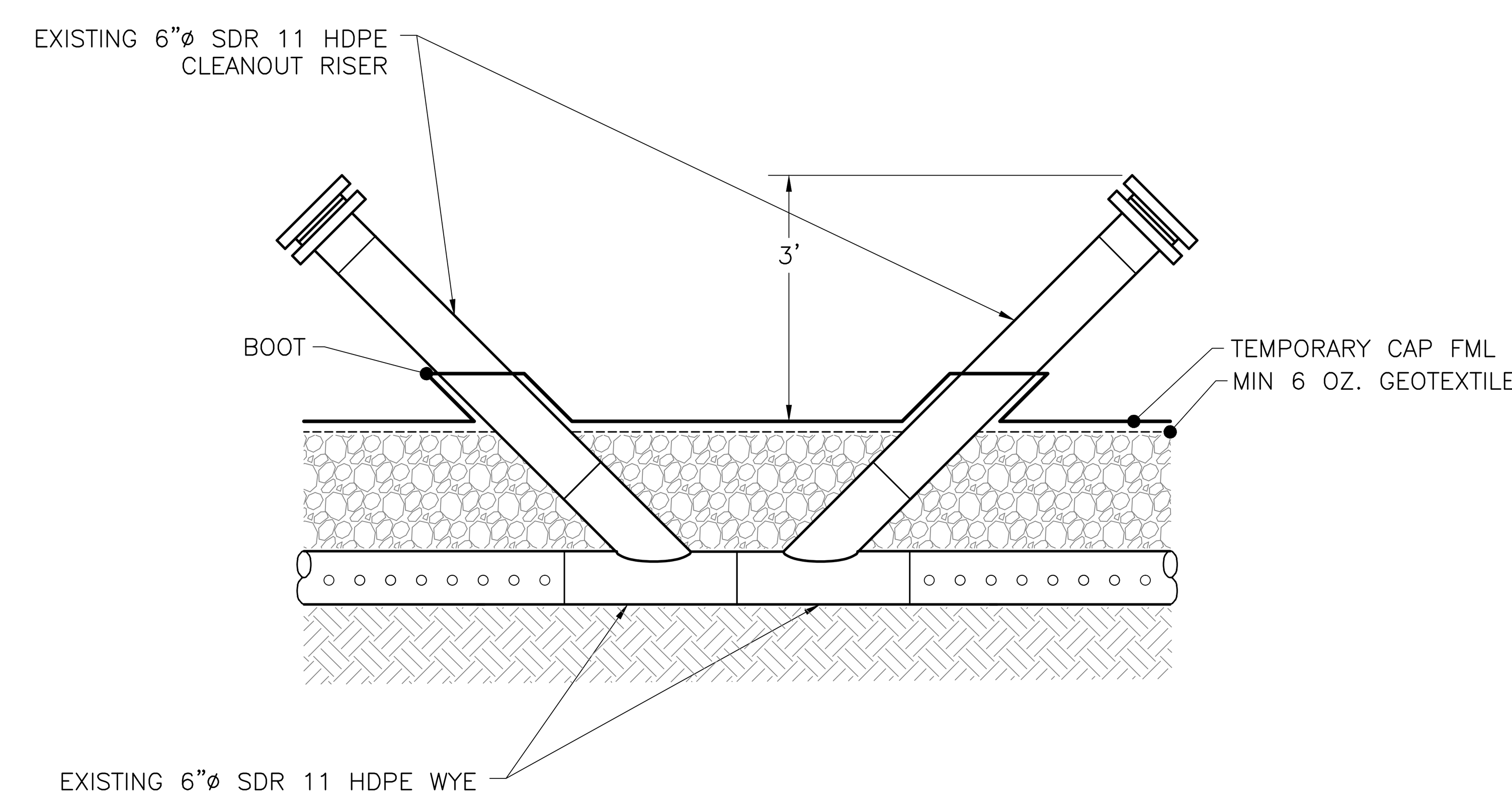
4 | 004 | 009

DOWNSLOPE STRIP DRAIN COLLECTOR TERMINATION

NTS

NOTE:

1. CUT GEOTEXTILE AND TIED–IN DOWNSLOPE COLLECTOR STRIP DRAIN INTO ADDED STONE.



5 | 004 | 009

PERIMETER COLLECTOR TRENCH CLEANOUT RISERS

NTS

NOTE:

1. INSTALLED PRIOR TO INITIATION OF NORTH QUARRY PHASE 1 EVOH COVER SYSTEM PROJECT.

BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI 63044

BRIDGETON LANDFILL
NORTH QUARRY EVOH
COVER PHASE 1

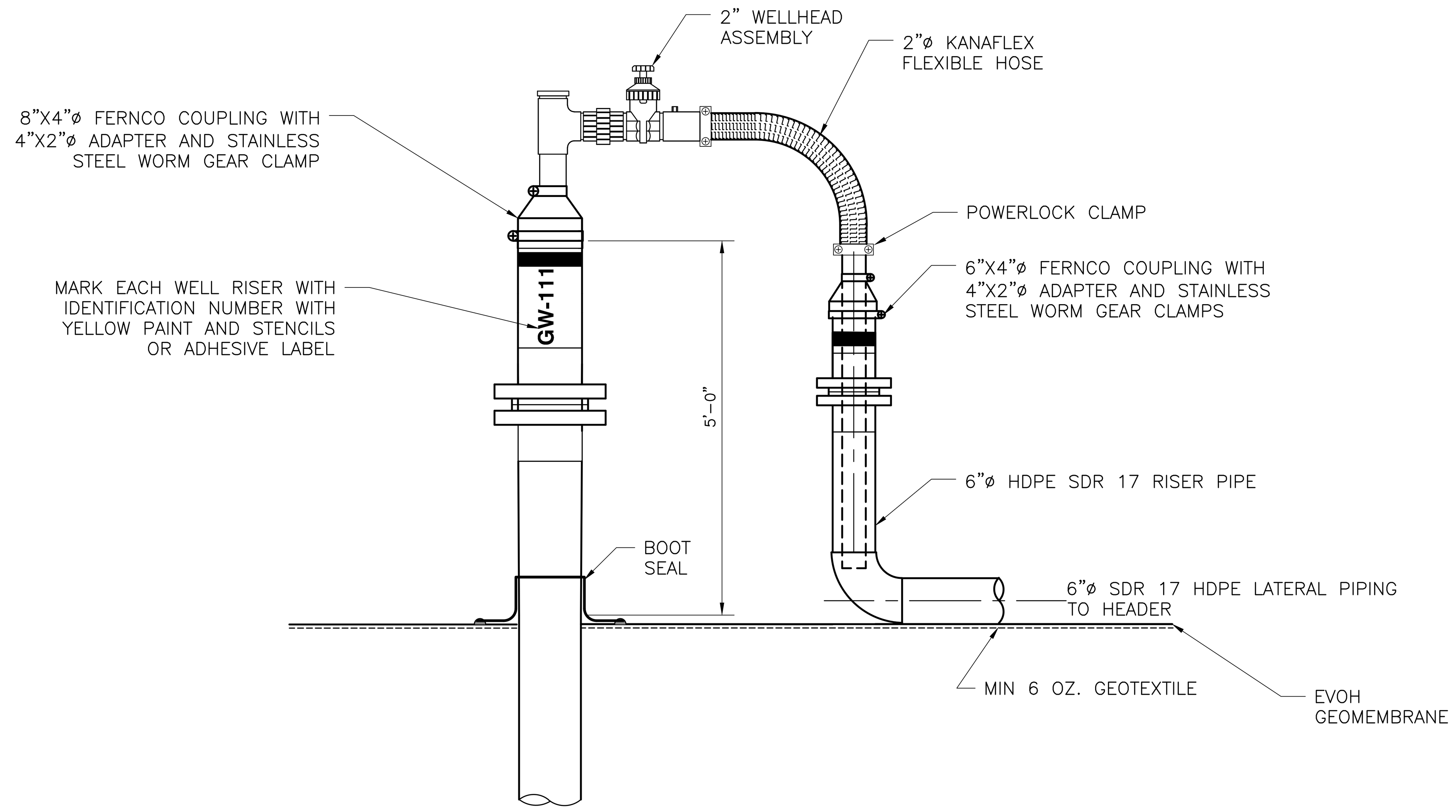
DETAILS #3

Engineering for a Better World
FEEZOR ENGINEERING, INC.

OCTOBER 2017
DESIGNED BY: IN
APPROVED BY: DRF

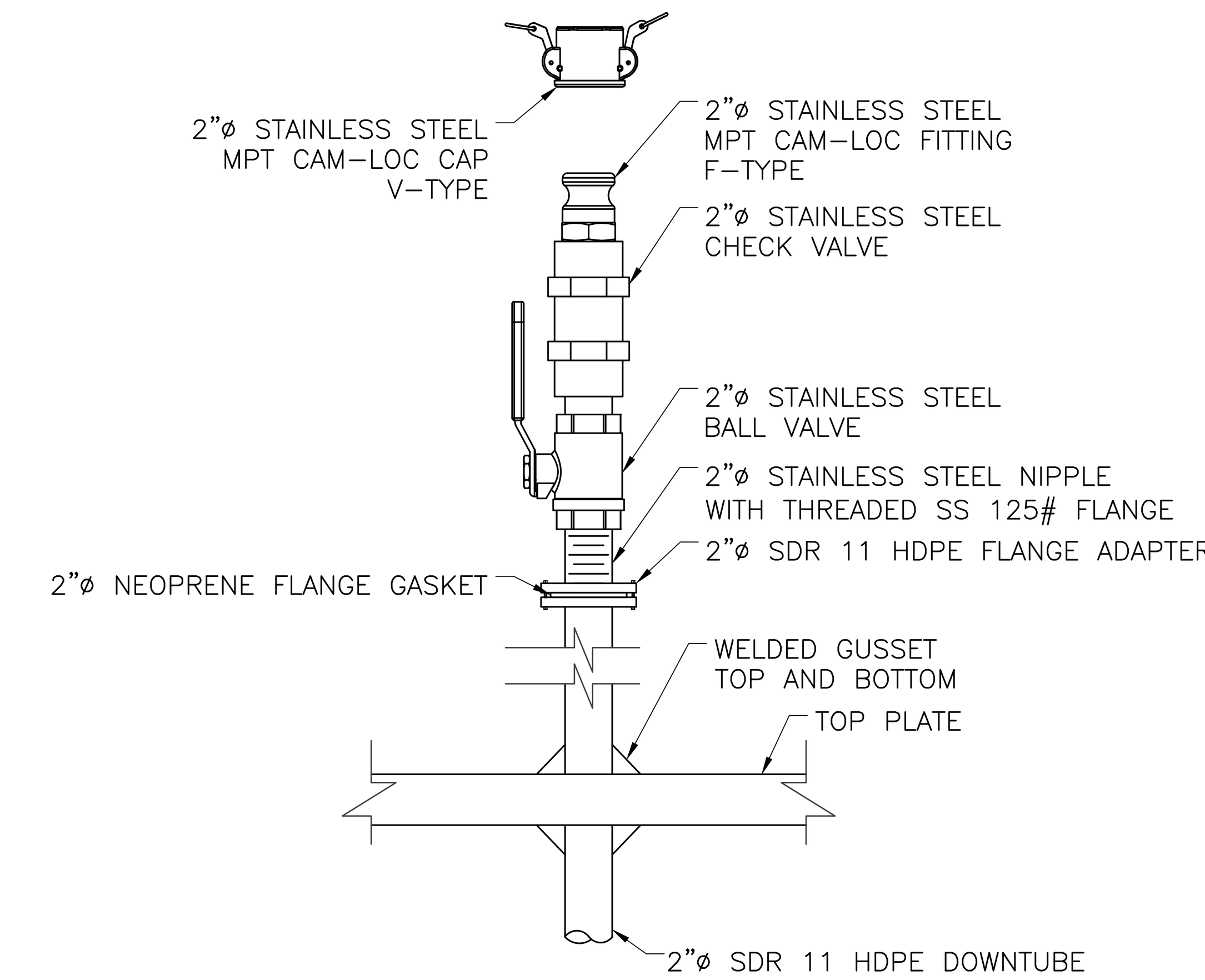
DRAWING NO.:
009

PROJECT NO: BT-125 | FILE PATH: | REVISION | DATE



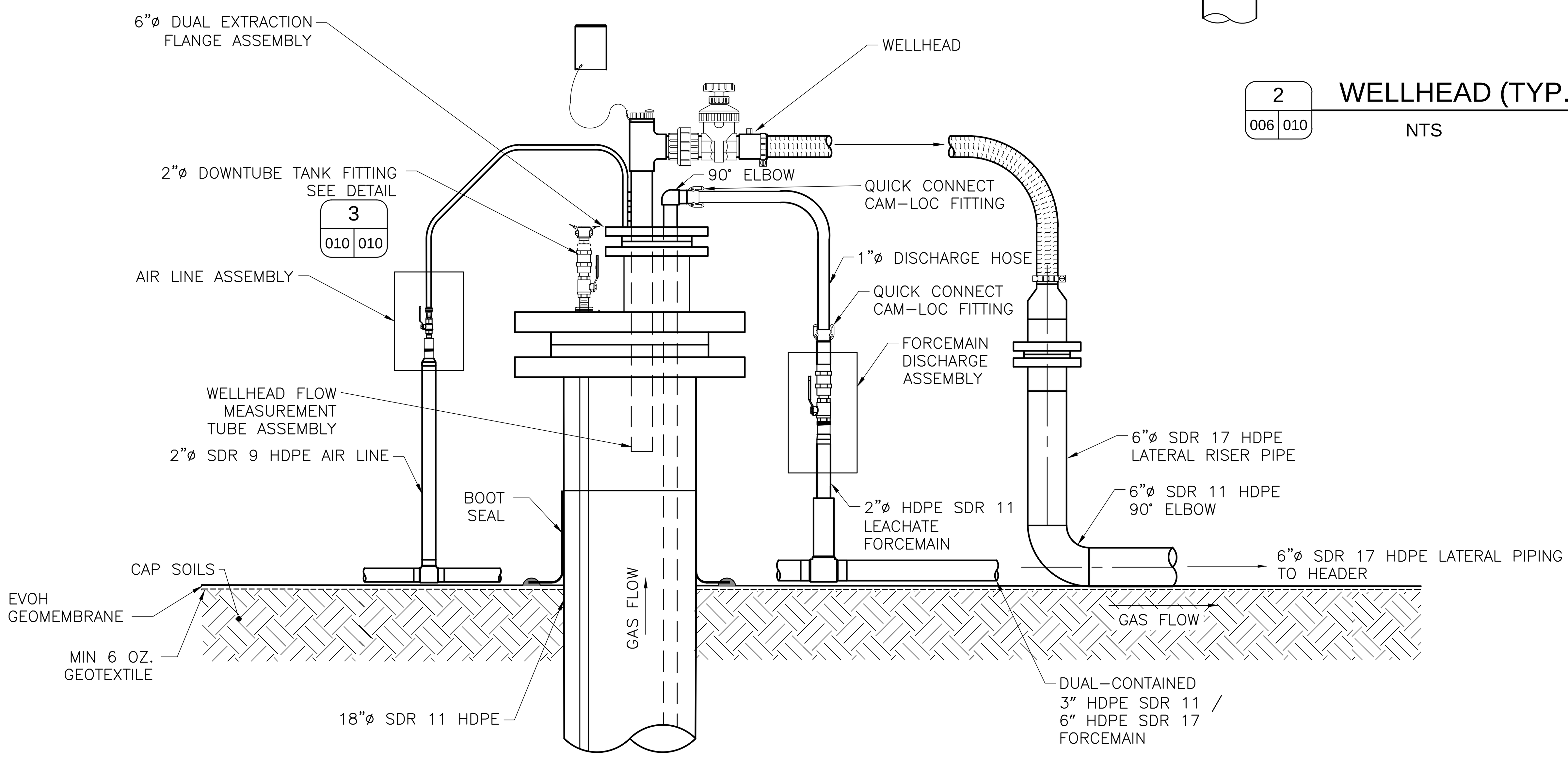
2 (006 | 010) WELLHEAD (TYP.)

NTS



3 (010 | 010) 2" DOWNTUBE TANK FITTING

NTS



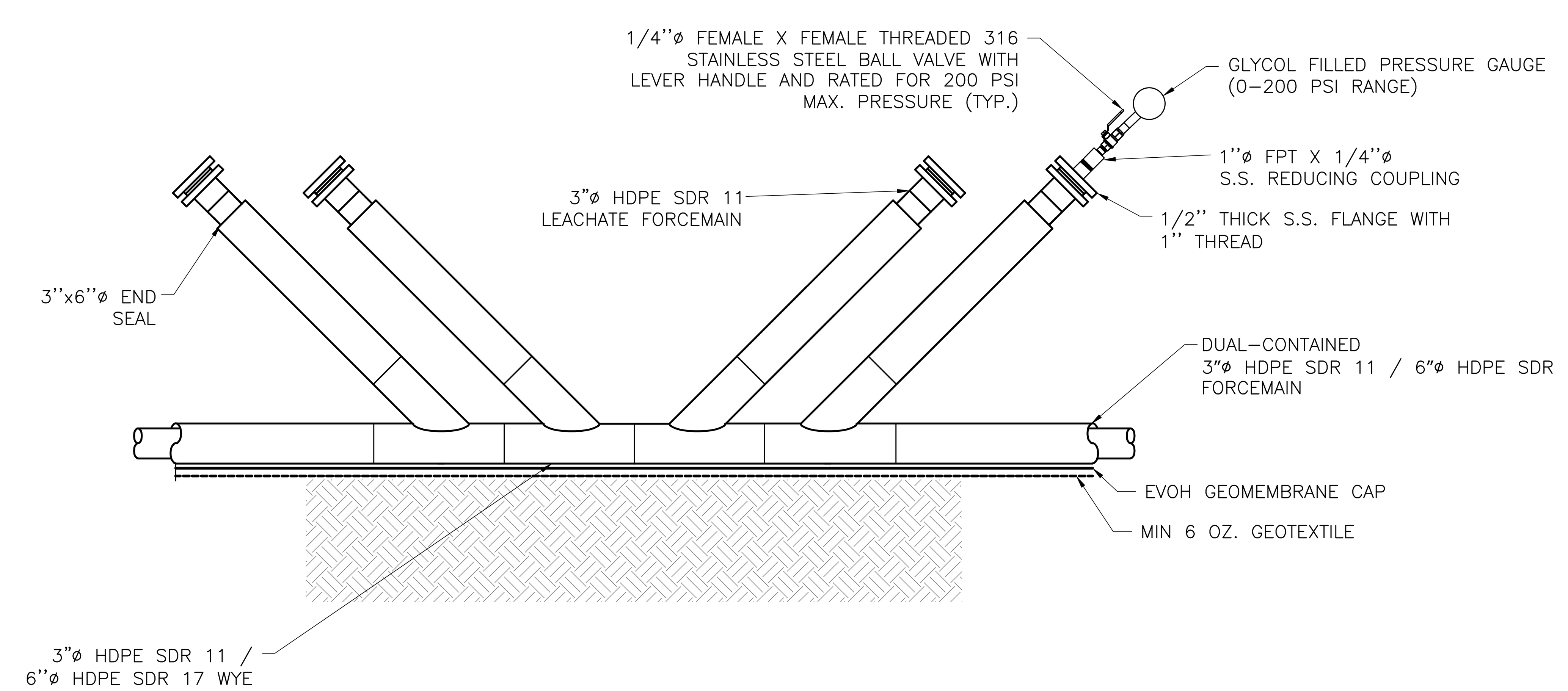
PROFILE VIEW

1 (007 | 010) PERIMETER COLLECTION SUMP WELLHEAD

NTS

NOTES:

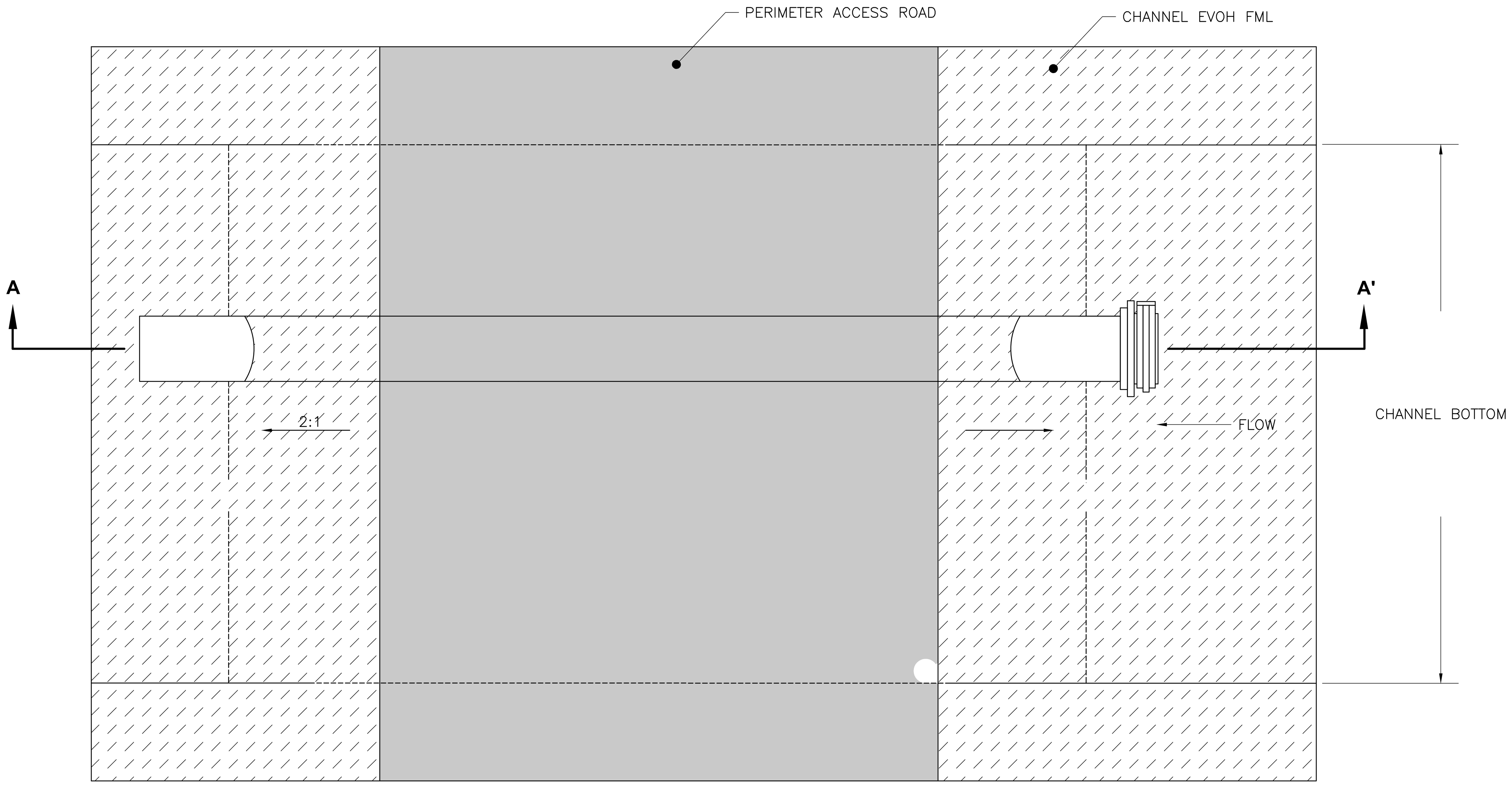
1. OWNER TO PERFORM INSTALLATION OF WELLHEAD AND PUMPS WHEN NECESSARY ALONG WITH CONNECTIONS TO RESPECTIVE CONVEYANCE SYSTEMS.



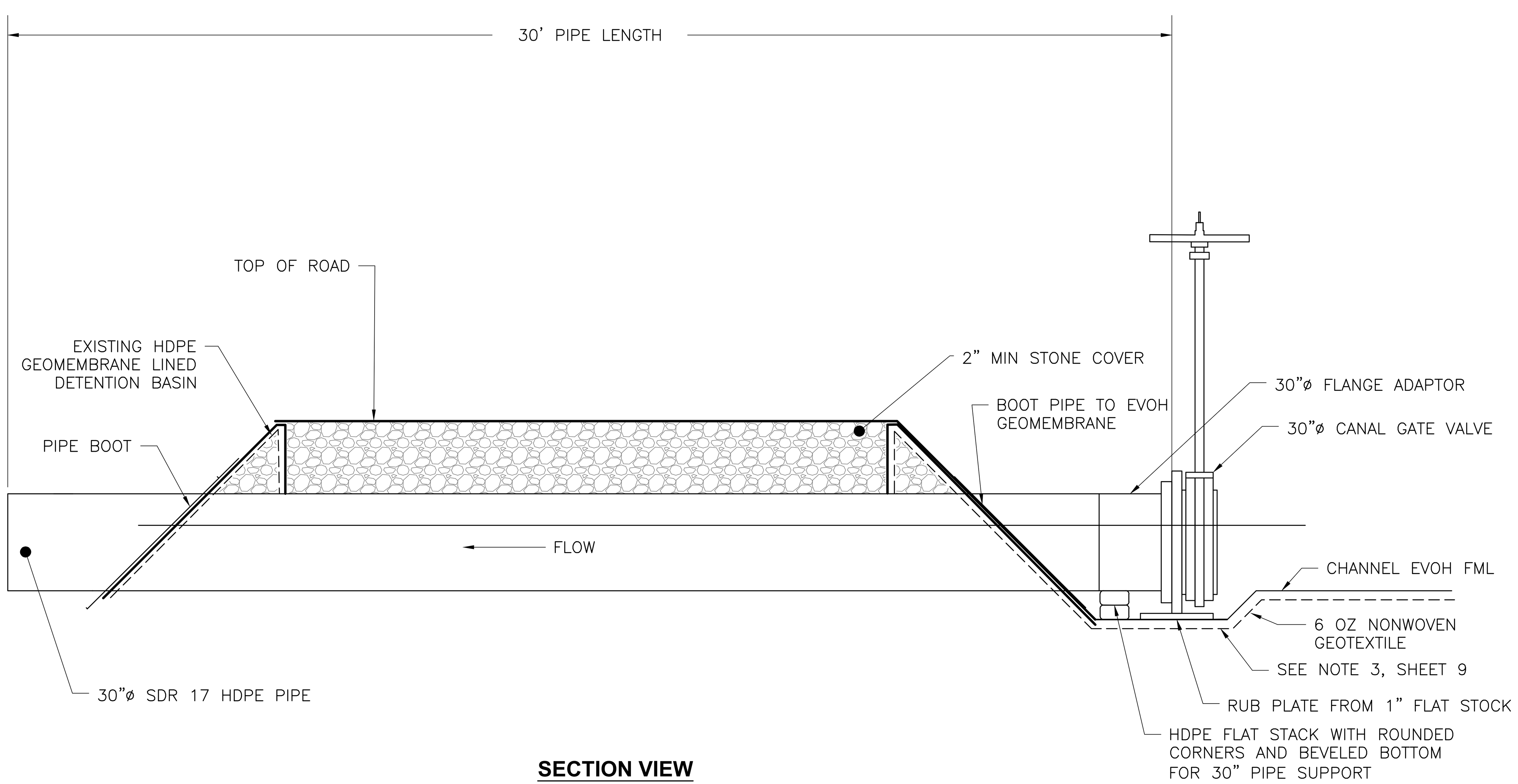
4 (006 | 010) FORCEMAIN CLEANOUT RISERS

NTS

BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL NORTH QUARRY EVOH COVER PHASE 1	FEEZOR ENGINEERING, INC. Engineering for a Better World	OCTOBER 2017 DESIGNED BY: IN APPROVED BY: DRF
	DETAILS #4		DRAWING NO.: 010
PROJECT NO: BT-125	FILE PATH:		REVISION / DATE



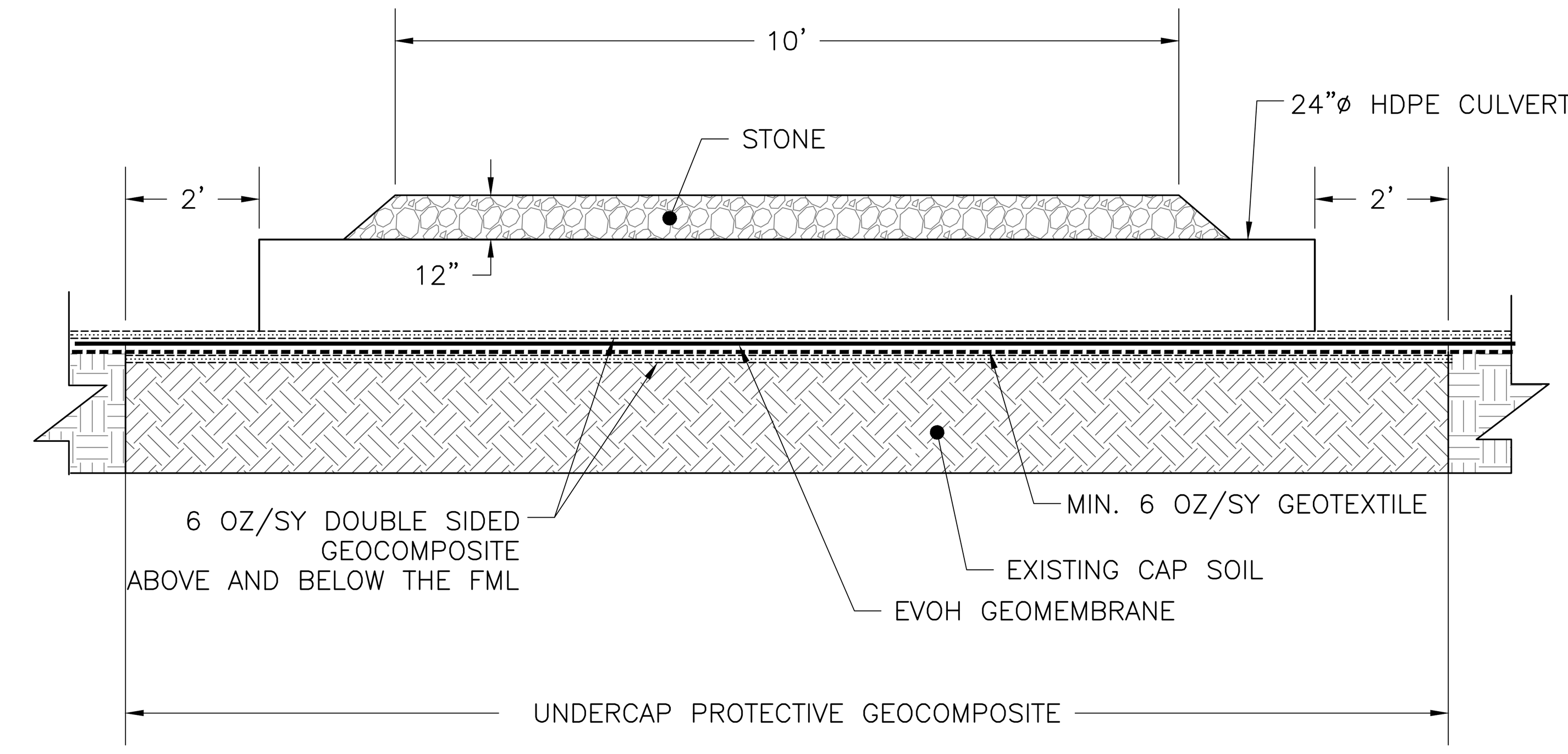
PLAN VIEW



SECTION VIEW

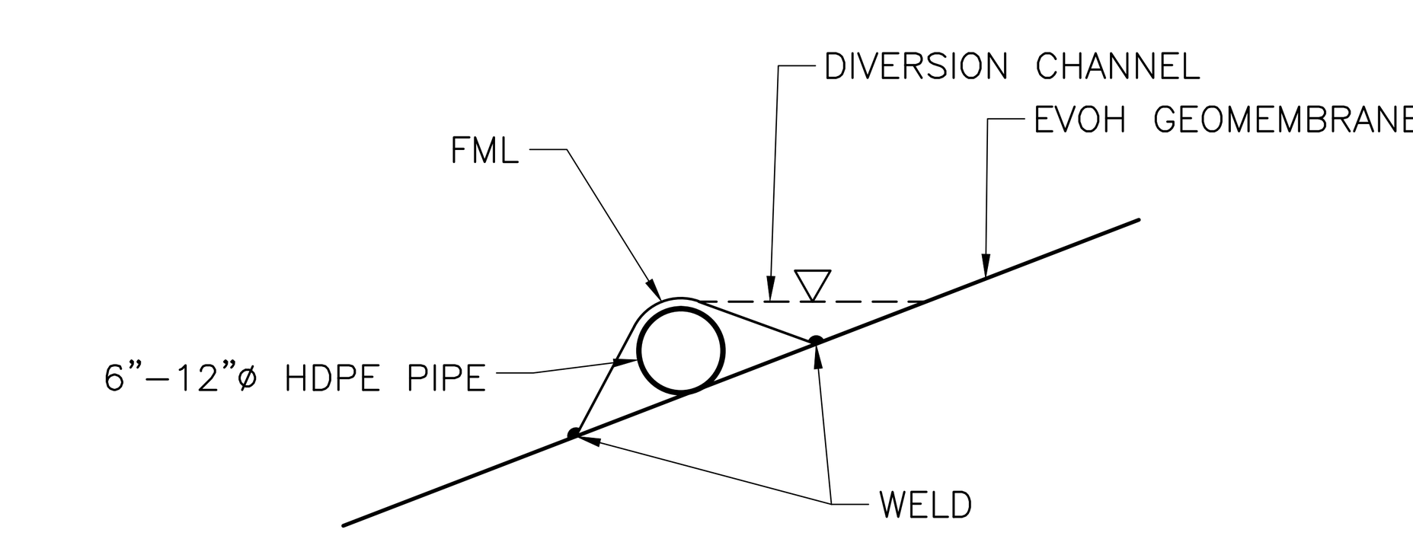
1 | 006 | 011 — CULVERT C-11 CROSSING

NTS



2 | 006 | 011 — CULVERT C-12 CROSSING AT LIGHT-DUTY ACCESS ROAD

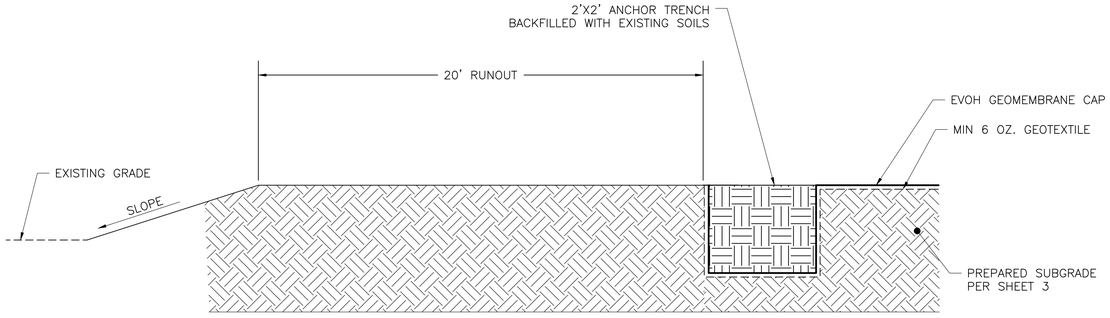
NTS



3 | 012 | 011 — ENERGY DISSIPATER DIVERSION BERM

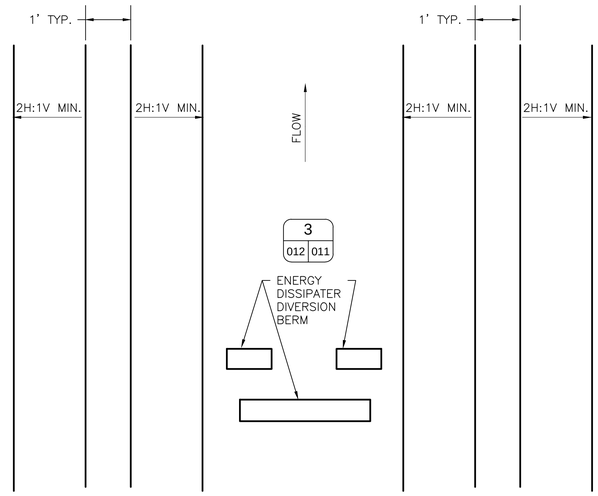
NTS

BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL NORTH QUARRY EVOH COVER PHASE 1	FEEZOR ENGINEERING, INC. Engineering for a Better World	OCTOBER 2017 DESIGNED BY: IN APPROVED BY: DRF
DETAILS #5			REVISION / DATE
PROJECT NO: BT-125	FILE PATH: D:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg BJV Revisions 10062017\BT-125-AB-007-014 (Details).dwg		DRAWING NO.: 011

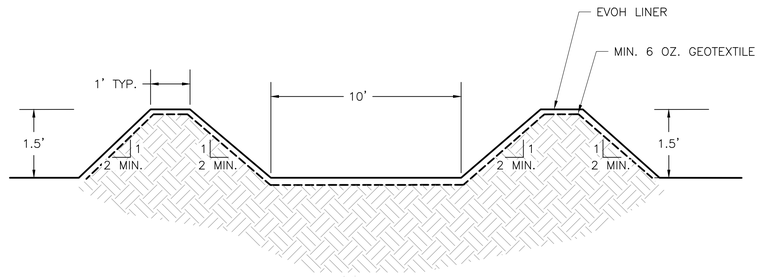


1 | 006 | 012 NORTH QUARRY EVOH COVER TERMINATION

NTS



PLAN

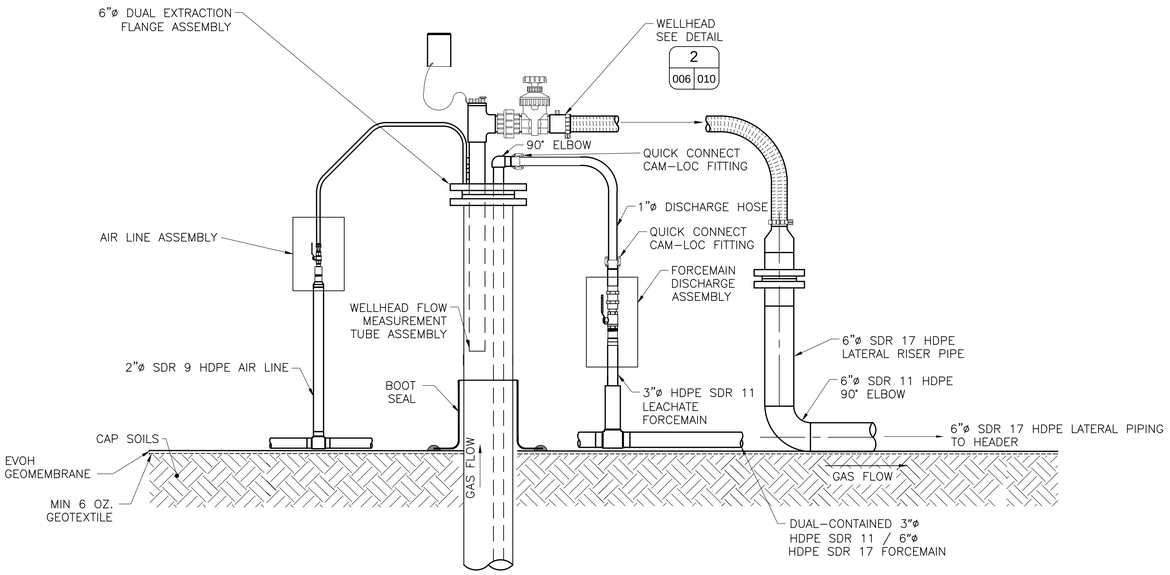


SECTION

2 | 006 | 012 LINED DOWNCHUTE

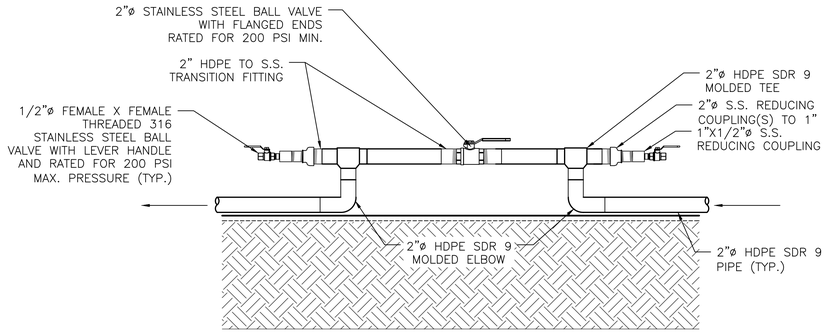
NTS

BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL NORTH QUARRY EVOH COVER PHASE 1	Engineering for a Better World FEEZOR ENGINEERING, INC.	OCTOBER 2017 DESIGNED BY: IN APPROVED BY: DRF
DETAILS #6			DRAWING NO.: **012**
PROJECT NO: BT-125	FILE PATH: D:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg IUV Revisions 10082017\BT-125-AB-007-014 (Details).dwg	REVISION	DATE



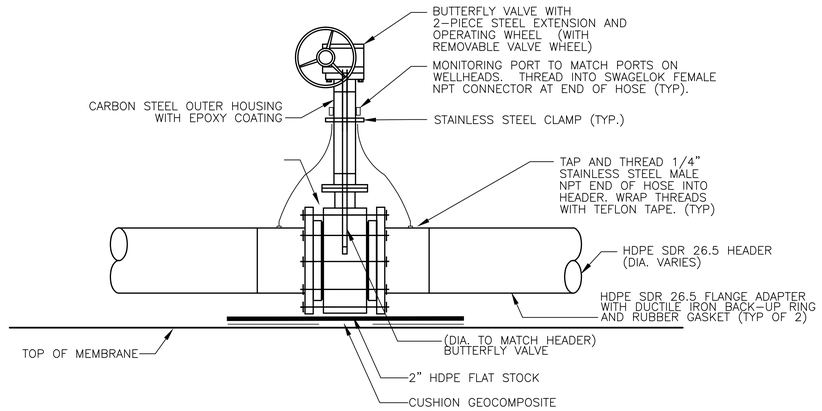
1 006 013 DUAL EXTRACTION WELLHEAD (TYP)

NTS



2 006 013 AIRLINE ISOLATION AND BLOWOFF VALVE

NTS

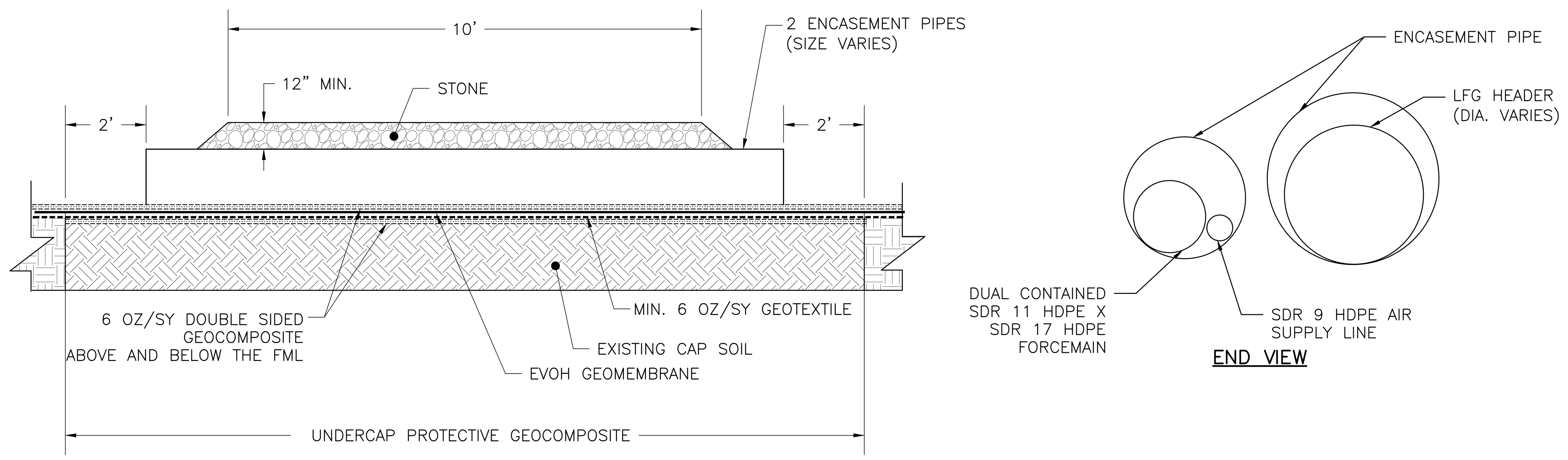


3 006 013 HEADER ISOLATION VALVE (TYP)

NTS

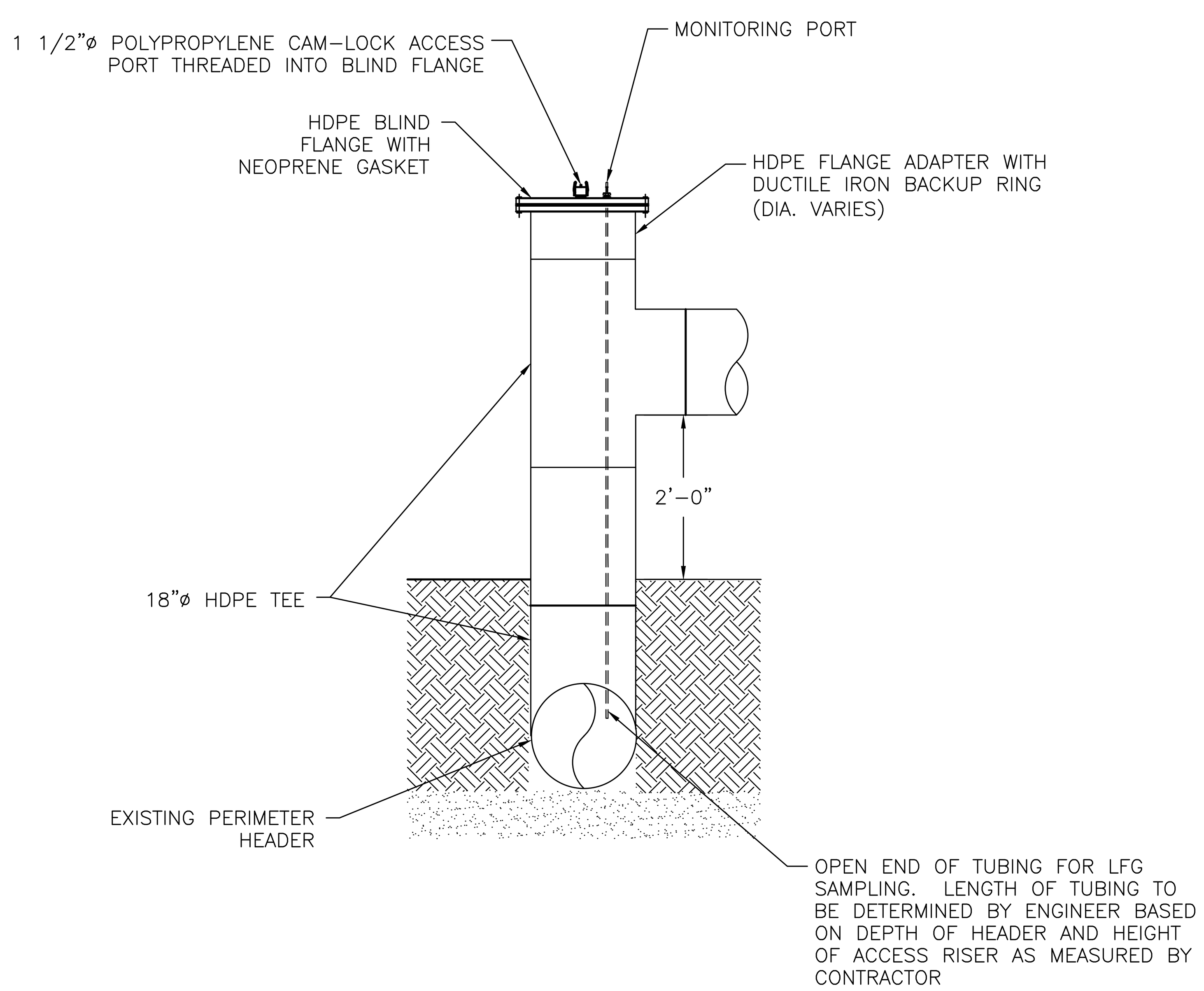
BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL NORTH QUARRY EVOH COVER PHASE 1	Engineering for a Better World FEEZOR ENGINEERING, INC.	OCTOBER 2017 DESIGNED BY: IN APPROVED BY: DRF
DETAILS #7			
PROJECT NO. BT-125	FILE PATH: D:\Dropbox (Feezor Engineering)\BT-125 North Quarry EVOH Liner CQA\5 - Drawings\As-Built\As-Built Dwg IUV Revisions 10052017\BT-125-AB-007-014 (Details).dwg	REVISION	DATE

DRAWING NO.: **013**



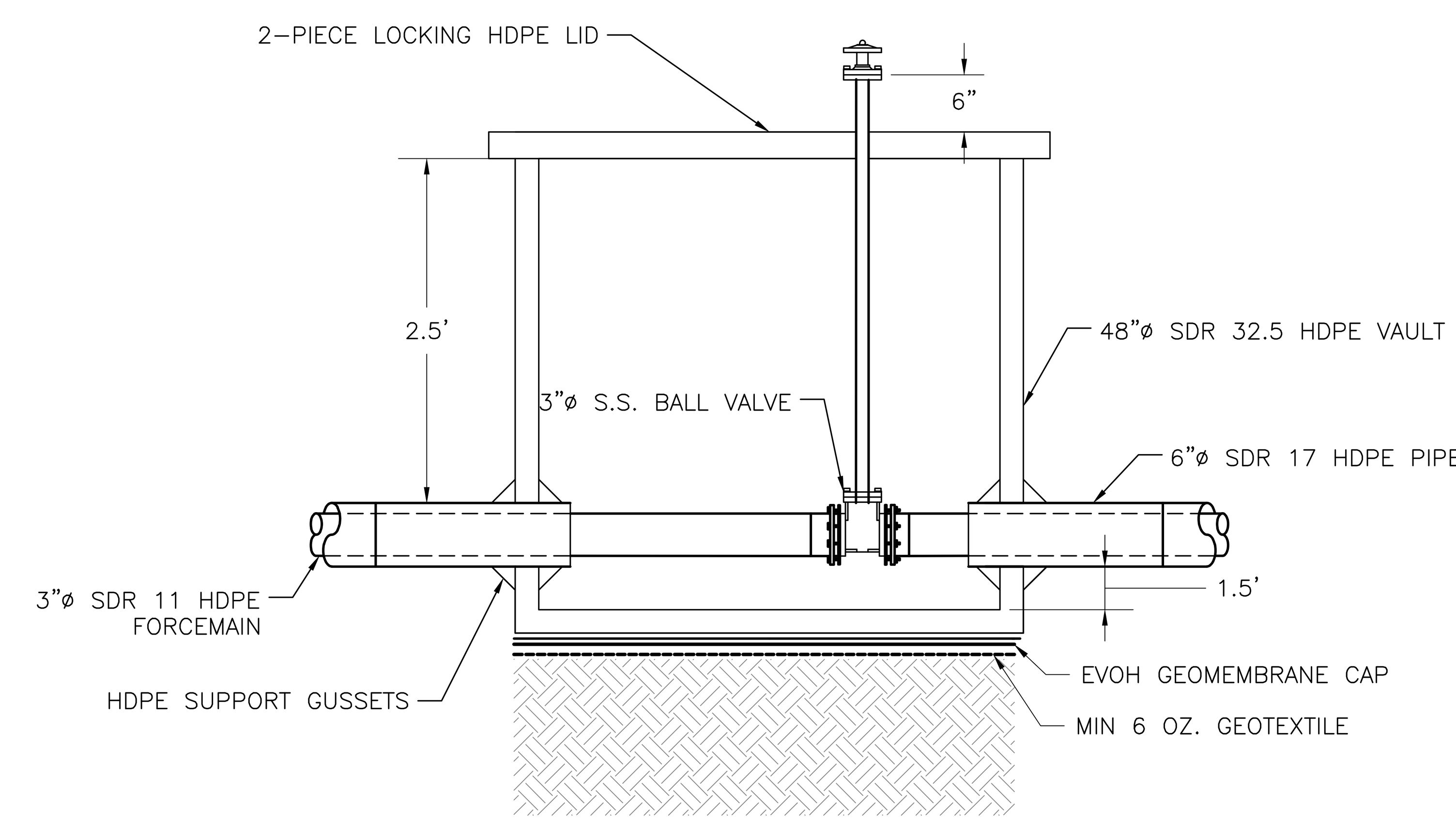
1 | 006 | 014 — LIGHT-DUTY ACCESS ROAD CROSSING

NTS



2 | 006 | 014 — HEADER ACCESS RISER

NTS



3 | 006 | 014 — FORCEMAIN ISOLATION VALVE

NTS

BRIDGETON LANDFILL, LLC 13570 ST. CHARLES ROCK ROAD BRIDGETON, MISSOURI 63044	BRIDGETON LANDFILL NORTH QUARRY EVOH COVER PHASE 1	FEEZOR ENGINEERING, INC. Engineering for a Better World	OCTOBER 2017 DESIGNED BY: IN APPROVED BY: DRF	DRAWING NO.: 014
DETAILS #8			REVISION / DATE	

PROJECT NO: BT-125 FILE PATH: