Permit No.	Date	Document ID No.
36-12	**July 16, 2009**	**7930**

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July 15, 2009
Solid Waste Section
Asheville Regional Office

July 13, 2009

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
2090 U.S. Highway 70
Swannanoa, NC 28778

Attention: Mr. Larry Frost

Reference: **Duke Energy - Allen Steam Station Retired Ash Basin (RAB) Ash Landfill**
Cell 1 Construction Certification Report
Submittal 2 of 2
Belmont, North Carolina
S&ME Project No. 1356-06-825 Ph. 9
S&ME Engineering License No. F-0176

Dear Mr. Frost:

On behalf of Duke Energy, S&ME, Inc. is pleased to present the attached Construction Quality Assurance (CQA) documentation for construction of the liner system for Cell 1 of the proposed Retired Ash Basin (RAB) – Ash Landfill at Duke Energy's Allen Steam Station in Belmont, North Carolina. Presented herein is Submittal 2 of the Construction Certification Report, which consists of:

- A general site introduction;
- CQA documentation for earthworks construction, which includes protective cover;
- CQA documentation for geosynthetics installation, which includes HDPE geomembrane, geosynthetic clay liner (GCL), and geocomposite drainage layers;
- CQA documentation for ancillary facilities, which includes an access road, scale pad area, leachate collection system (LCS) and leak detection system (LDS) pipes and pumps, and the LCS/LDS control panel area; and
- Subsequent construction photographs and project documentation since Submittal 1.

The attached Submittal 2 concludes the Construction Certification Report for construction of the liner system for Cell 1 of the RAB Ash Landfill. A similar Construction Certification Report for construction of the liner system for Cell 2 will also be provided upon the completion of construction.

Upon reviewing the attached documentation, if you should have any questions or require additional information, please contact us.
Sincerely,

S&ME, Inc.

NORTH CAROLINA PROFESSIONAL SEAL 032153 ENGINEER KENNETH R. DALY

7/13/09

Kyle Baucom, E.I.
Staff Professional

Kenneth R. Daly, P.E.
Senior Project Engineer

Senior Reviewed by: Jason S. Reeves, P.E.
Senior Project Engineer

Attachments: Cell 1 Construction Certification Report
Submittal 2 of 2

Cc: Andy Tinsley, Duke Energy
Ted Manes, Duke Energy

CELL 1 CONSTRUCTION CERTIFICATION REPORT
SUBMITTAL 2 OF 2
RETIRED ASH BASIN (RAB) – ASH LANDFILL
ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

S&ME Project No. 1356-06-825 Ph. 9
S&ME Engineering License No. F-0176

Prepared for:
Duke Energy
526 South Church Street
Charlotte, North Carolina 28202

Prepared by:
S&ME, Inc.
9751 Southern Pine Boulevard
Charlotte, North Carolina 28273

July 13, 2009

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1. INTRODUCTION

1.1 Project Description

The Retired Ash Basin (RAB) Ash Landfill is owned and operated by Duke Energy. The facility is located at Allen Steam Station at 253 Plant Allen Road in Belmont, North Carolina. The proposed RAB Ash Landfill was permitted for Phase I (Cells 1 and 2) construction under Permit No. 36-12. This Certification Report documents the construction of the Cell 1 liner system in accordance with S&ME's "Permit to Construct Application" dated March 11, 2008, as approved by the North Carolina Department of Environment and Natural Resources (NCDENR). Construction was performed in general accordance with the project documents included within the "Permit to Construct Application." Project documents consist of technical specifications, drawings, and the Construction Quality Assurance (CQA) Plan. Presented herein is Submittal 2 of 2 of the Construction Certification Report for the Cell 1 liner system, which is organized into four sections.

- Section 1 - Provides a brief overview of the site and project;
- Section 2 - Discusses CQA documentation during earthworks construction including protective cover;
- Section 3 - Discusses geosynthetics CQA documentation during installation including the geosynthetic clay liner (GCL), high density polyethylene (HDPE) geomembrane, and geocomposite drainage layers;
- Section 4 – Discusses CQA documentation during construction of ancillary facilities, which includes an access road, scale pad area, leak detection system (LDS) and leachate collection system (LCS) pipes and pumps, and the LDS/LCS control panel area; and
- Section 5 - Summarizes project documentation, including construction photographs, field reports, and notices of change.

Pertinent CQA documentation, including earthworks laboratory test results, geosynthetics field forms, record drawings, and project documentation are included in the appendices. Submittal 1 of 2 dated May 15, 2009 included pertinent CQA documentation for earthworks construction and geosynthetics manufacturer's quality control (MQC) and conformance testing prior to geosynthetics installation. Earthworks construction prior to geosynthetics installation included subgrade, structural fill, and compacted soil liner.

The RAB Ash Landfill project site can be generally characterized into two areas: 1) the Landfill Area, 2) the Entrance Facility Area, and 3) the Borrow Area. These areas are shown on the Site Aerial Map, Figure 1, prior to construction. The Landfill Area is also illustrated on an Aerial Photograph, Figure 2, during Cell 1 geosynthetics construction.

1.2 Landfill Area

The Landfill Area for Cell 1 is located in the southwest corner of the RAB with an approximate area of 10.7 acres. Construction activities within the Landfill Area for Submittal 1 included earthworks fill for subgrade, structural fill, and compacted soil liner.

Construction activities within the Landfill Area for Submittal 2 included geosynthetics installation, LDS and LCS pipe, pump, and control installation, and earthworks fill for protective cover.

1.3 Entrance Facility Area

The Entrance Facility Area is located northwest of the RAB and south of Plant Allen Road. Construction activities within the Entrance Facility Area were performed by Crowder Construction Company from April 2009 to July 2009. Construction activities within the Entrance Facility Area included construction of an asphalt pavement access road and concrete pavement slabs as well as the installation an arch bridge, truck scale, and truck wheel rinse.

1.4 Borrow Area

The Borrow Area is located northeast of the intersection of South Point Road and Plant Allen Road near the entrance driveway of Duke Energy's Allen Steam Station. The Borrow Area is approximately 15.8 acres for Phase I construction. Construction activities within the Borrow Area generally consisted of installing erosion and sediment control measures, excavating soil, grading for drainage, and seeding.

1.5 Earthworks Construction

Submittal 2 earthworks construction consisted of protective cover. Submittal 1 earthworks construction consisted of subgrade, structural fill, and compacted soil liner. Protective cover construction was performed by Earnhardt Grading during June 2009. Protective cover was placed following the completion of geosynthetics installation to protect the geosynthetic liner system. S&ME monitored construction activities and provided testing services during earthworks construction.

1.6 Geosynthetics Installation

Submittal 2 geosynthetics installation consisted of GCL, HDPE geomembrane, and geocomposite drainage layers with installation of the secondary liner followed by installation of the primary liner. Geosynthetics installation was performed by Plastic Fusion Fabricators, Inc. (Plastic Fusion) of Huntsville, Alabama during April and May 2009. S&ME monitored installation activities and provided testing services during geosynthetics installation.

1.7 Certification

Observation and testing results indicated that the earthworks construction and geosynthetics installation for Cell 1 of the RAB Ash Landfill were in general accordance with the approved project documents. A Construction Certification Statement signed and sealed by an Engineer registered in the State of North Carolina is included.

2. EARTHWORKS

Earthworks construction activities included excavation and placement of protective cover. Material descriptions and general construction procedures are summarized in Sections 2.1. Earthworks construction observation and testing activities are summarized in Section 2.2.

2.1 Protective Cover

The protective cover material definition and general construction procedures are summarized in this section.

2.1.1 Material

Protective cover is defined as soil fill placed over the geosynthetics liner system to protect it from landfill operations equipment. Protective cover fill consists of on-site borrow soil that is free of organic material, refuse, or debris.

2.1.2 Construction

Earnhardt Grading placed protective cover during June 2009. Based on the engineer's quantity estimate, approximately 52,600 cubic yards of material was placed to complete the Cell 1 protective cover. Protective cover was constructed in one uniform lift to a compacted thickness of 24 inches on top of the LCS, 300-mil geocomposite drainage layer. Protective cover construction extends to the liner system limit at the anchor trench on the south and west perimeters. Construction extends to the CQA limit at the east perimeter. Construction extends to existing grade at the toe of slope on the intracell subgrade slope at the north perimeter.

2.2 Observation & Testing

S&ME observed, monitored, and provided laboratory testing during protective cover construction. The construction quality assurance officer (CQAO) observed construction traffic during protective cover construction to verify that there was no construction traffic directly on the geosynthetics. The CQAO also observed protective cover placement for the presence of wrinkles in the geosynthetics during placement with any wrinkles being "walked out" prior to additional placement. Lift thickness was observed to verify a minimum lift thickness of 12 inches and a total compacted lift thickness of at least 24 inches. Protective cover material was observed to verify that the material was free of organic material, refuse, and debris.

Protective cover thicknesses were also verified through surveying. The protective cover thicknesses were verified by comparing the elevations of compacted soil liner survey points with protective cover survey points at similar northing and easting locations and calculating the elevation difference. Donnie Lawrence & Associates provided survey data that was obtained on an approximate 50-foot by 50-foot grid with individual survey points also obtained at slope breaks in laterals, berms, and the sump area. A total of 944 compacted soil liner survey points and 940 protective cover survey points were measured to verify the protective cover thickness. Protective cover thickness verification summary

tables and as-built drawings are included in Appendix I. The thickness verification data indicates that the minimum 24-inch thick protective cover thickness was achieved.

Protective cover laboratory testing was performed at a frequency of approximately one suite of tests per 10,000 cubic yards of material placed. In general, each suite included the following tests:

- Particle Size (ASTM D422); and
- Liquid Limit, Plastic Limit, and Plasticity Index (ASTM D4318).

Laboratory test results for the protective cover are included in Appendix I. Based on an in-place protective cover quantity of 52,600 cubic yards and six (6) laboratory tests performed as reported in Table 1, the required testing frequency of one suite of tests per 10,000 cubic yards for protective cover were satisfied.

3. GEOSYNTHETICS

Geosynthetics were shipped to the site following pre-installation testing as documented in Submittal 1. When the material arrived on-site, the material was observed and monitored during unloading. The material was temporarily stored on-site until deployment. During this storage period, S&ME personnel inventoried on-site materials. Field inventory forms and bills of lading for the on-site materials are included in Appendix II, Section 1.

The landfill liner system consists of a double liner system with a LDS and LCS. The liner system construction began with the construction of the compacted soil liner which consists of an 18-inch thick layer of compacted soil with a permeability no greater than 1.0×10^{-5} centimeters/second, as documented in Submittal 1. Liner system construction continued with geosynthetics installation consisting of the following geosynthetics from bottom to top:

- Geosynthetic clay liner (GCL);
- Secondary 60-mil double-sided textured high density polyethylene (HDPE) geomembrane;
- LDS, 350-mil geocomposite drainage layer;
- Primary 60-mil double-sided textured HDPE geomembrane; and
- LCS, 300-mil geocomposite drainage layer.

As described in Section 2, a 24-inch thick protective cover layer was constructed on top of the geosynthetics for protection from landfill operations equipment. Material descriptions, installation procedures, and installation observation and testing activities for geosynthetics are summarized in the remainder of this section.

3.1 Geosynthetic Clay Liner (GCL)

3.1.1 Material

The geosynthetic clay liner (GCL) was a Bentomat ST product, which consists of a layer of sodium bentonite between a woven geotextile base fabric and non-woven geotextile cover fabric that are needle-punched together. The Bentomat ST was manufactured by CETCO Lining Technologies of Cartersville, Georgia. Approximately 616,500 square feet of GCL was manufactured and delivered for the project.

3.1.2 Subgrade Certification

Prior to the placement of GCL, S&ME's CQAO and the Geosynthetic Installer's superintendent observed the subgrade condition of the compacted soil liner. The subgrade was observed for proper moisture conditioning. Any areas that appeared too wet or dry were reworked. The subgrade was also observed to make sure that it was smooth-rolled and free of unacceptable cracks, ruts, or protrusions, such as rocks, roots, debris, or other foreign matter. The subgrade was monitored and accepted for GCL installation on a daily basis. S&ME's CQAO and the Geosynthetic Installer's superintendent signed a Subgrade Certification CQA form as presented in Appendix II, Section 2.

3.1.3 Installation

The GCL was installed by Plastic Fusion. The GCL was deployed using a rubber-tired front-end loader or a track-mounted backhoe. The loader or backhoe supported a steel rod with straps attached to the rod that inserted into the ends of each roll and allowed the material to be pulled directly off of the roll while suspended above the ground. The material was aligned utilizing manpower with wrinkles being removed during placement. Rolls were overlapped with a minimum of 6 inches overlap in the longitudinal direction with overlap seams being sealed by the SuperGroove™ seal technique. The SuperGroove™ is a cut in the nonwoven geotextile that allows bentonite to more freely extrude in the overlap zone. Rolls were overlapped with a minimum of 24 inches overlap at the end of roll with overlap seams being by sealed by additional granular bentonite. Where possible, the GCL was shingled in the direction of stormwater flow. Daily GCL deployment was covered by secondary HDPE geomembrane to prevent hydration from rainfall or other surface water run-on.

3.2 Geomembrane

3.2.1 Material

The geomembrane was a 60-mil thick high density polyethylene (HDPE) double-sided textured geomembrane. The geomembrane product, “Microspike™”, was manufactured by Agru America of Georgetown, South Carolina. Approximately 1,243,200 square feet of geomembrane was manufactured and delivered for the project.

3.2.2 Deployment

The HDPE geomembrane was installed by Plastic Fusion. Rolls were deployed using a rubber-tired front-end loader or a track-mounted backhoe. The loader or backhoe supported a steel rod with straps attached to the rod that inserted into the ends of each roll and allowed the material to be pulled directly off of the roll while suspended above the ground. The material was aligned utilizing manpower. Two geomembrane layers were installed. The secondary geomembrane was deployed on top of the GCL. The primary geomembrane was deployed on top of the LDS, 350-mil geocomposite drainage layer.

Generally, geomembrane rolls were deployed in long, straight stretches wherever possible. However, due to geometry, this was not always possible. Therefore, rolls were cut and reused, which resulted in one or more geomembrane panels from a geomembrane roll. Each panel was assigned a panel number sequentially numbered in the order that the panel was placed. The panel number, length, manufacturer’s geomembrane roll number, and date were recorded and documented on the Geomembrane Deployment Report CQA forms included in Appendix II, Section 3. The roll number in the CQA forms is the manufacturer’s roll number. During deployment, panels were assigned reference roll numbers based on the contractor’s reference roll list. The reference roll number was then cross referenced with the reference roll list to designate the manufacturer’s roll number. The contractor’s reference roll list is also included at the end of Appendix II, Section 3 behind the CQA forms. Care was taken to provide excess length through the anchor trenches to allow for thermal expansion and contraction of the geomembrane. In general, the panels were then overlapped approximately four inches in preparation for seaming.

3.2.3 Field Seaming

Panel to panel field seams were predominantly bonded by double hot wedge fusion welds although some seams were bonded by extrusion welds. Extrusion welding was primarily used at the subcell connection of Cells 1A and 1B consistent with construction drawing Detail 15, Drawing D4. Trial seams were performed and recorded prior to welding. The Geomembrane Trial Seam Log CQA forms are included in Appendix II, Section 3.

At the beginning of each field seam, the welding machine number, welding technician's initials, welding speed and temperature, and the time for beginning the seam were recorded on the geomembrane and in the Geomembrane Seam Log CQA forms. Upon completion of each seam, the seam was non-destructively tested in accordance with the project requirements. Fusion welds were air pressure tested and extrusion welds were vacuum box tested. The non-destructive testing results were also recorded on the Geomembrane Seam Log CQA forms. The CQA forms for geomembrane field seaming are included in Appendix II, Section 3.

3.2.4 Laboratory Destructive Testing

Laboratory Destructive Test (LDT) samples were taken at approximately every 500 linear feet of field seaming. The cumulative seam lengths were tracked daily. The length welded from the previous LDT sample, or carryover, was used to track LDT sample frequency from one day to the next. Seven welding machines were used to weld approximately 56,697.5 linear feet of seam with a combined carryover of 1,067.5 feet from the last LDT sample location for each machine. LDT samples were taken from 111 test locations and tested by S&ME on-site using a calibrated tensiometer. Ten 1-inch wide specimens were cut from each LDT sample. For each LDT test, five specimens were tested for peel adhesion and the other five tested for bonded shear strength. Performance criteria according to Table 02670-D of the technical specifications requires a peel strength of 91 lb/in for fusion seams and 78 lb/in for extrusion seams and a shear strength of 120 lb/in for both fusion and extrusion seams. These values are required for 4 out of 5 test specimens with the 5th specimen requiring a value as low as 80% of the aforementioned value.

Of the 111 LDT samples tested, one LDT sample did not conform to the performance criteria described in the approved project documents. The failing destructive test was located on a tie-in seam. The failure was isolated by retrieving additional LDT samples 10 feet from each end of the failing destructive test sample. With the additional LDT sample retests passing, the failing area was bracketed and capped. A summary of laboratory destructive testing is presented in Appendix II, Section 3. Calibration certificates for tensiometer load cells are also included in Appendix II, Section 3.

3.2.5 Defects and Repairs

S&ME personnel observed panel deployment and field seaming activities and recorded defects and repairs resulting from installation damage, laboratory destructive test sampling, improper welding techniques, or seam ends and intersections. Defects found on the panels were identified and repaired as documented on the Geomembrane Defect Log CQA forms.

Defects that did not fully penetrate the liner were repaired with a "grind-and-weld" repair. Repairs were patched using geomembrane pieces by grinding the periphery of the area to be patched, using a heat gun to “tack” the patch over the defect, then extrusion welding the patch over the defect. Repairs were then vacuum box tested as recorded in the Geomembrane Repair Testing Log CQA forms.

As protective cover construction was nearing completion, an air pocket developed in the northeast corner of Cell 1. Both the secondary and primary liner systems were cut to relieve this air buildup. This defect was recorded and repaired as documented in the Geomembrane Defect Logs and Geomembrane Repair Testing Logs CQA forms included in Appendix II, Section 3.

3.2.6 Geomembrane As-Built Drawing

Geomembrane as-built drawings are included for reference. Figure 3, “Secondary Geomembrane Panel Layout and Repairs”, and Figure 4, “Primary Geomembrane Panel Layout and Repairs”, show the location of panels, seams, and repairs including LDT locations for the corresponding geomembrane layer. Geomembrane as-built drawings were developed by S&ME with GPS locations provided by Earnhardt Grading.

3.3 Geocomposite Drainage Layer

3.3.1 Material

The geocomposite drainage layers consisted of a 350-mil thick geocomposite for the LDS in the secondary liner system and a 300-mil thick geocomposite for the LCS in the primary liner system. The geocomposites consisted of a Transnet HDPE geonet drainage core with GE180 8 oz/sy non-woven geotextiles heat bonded to each side. The geonet drainage core was manufactured by Engineered Synthetic Products, Inc. of Birmingham, Alabama, while the geotextiles were manufactured by Skaps Industries of Commerce, Georgia. Approximately 1,202,400 square feet of geocomposite drainage layer was manufactured and delivered for the project.

3.3.2 Installation

The geocomposite was deployed using a rubber-tired front-end loader or a track-mounted backhoe. The loader or backhoe supported a steel rod with straps attached to the rod that inserted into the ends of each roll and allowed the material to be pulled directly off of the roll while suspended above the ground. The material was aligned utilizing manpower. Where possible, the geocomposite was shingled in the direction of stormwater flow. Two geocomposite drainage layers were installed. The 350-mil product, which was a part of the LDS system, was deployed on top of the secondary geomembrane. The 300-mil product, which was a part of the LCS system, was deployed on top of the primary geomembrane.

Once the panels were placed, each panel was overlapped approximately 4 inches side-to-side and 12 inches end-to-end. The geonet component was tied using plastic fasteners. During installation in the LDS system, the top geotextile component from adjacent panels was heat bonded. During installation in the LCS system, the top geotextile component from adjacent panels was sewn. Wrinkles in the geocomposite drainage layer were

repaired by manually straightening the panels or by cutting the geocomposite such that it laid flat and tack- bonding a layer of 8 oz/sy nonwoven geotextile on top of the cut portion. Holes or tears were repaired in a similar fashion.

4. ANCILLARY FACILITIES

Ancillary facilities were also constructed in conjunction with Cell 1 landfill liner construction. Ancillary facilities were located in the Landfill Area and the Entrance Facility Area. Field density test results, concrete test reports, and the Electrical-Mechanical drawing set are included in Appendix III.

4.1 Landfill Area

Ancillary facilities in the Landfill Area were constructed to maintain and handle leachate from the landfill. Ancillary facilities in the Landfill Area included pipes, pumps, controls, and electrical supply for the LDS and LCS. Plastic Fusion installed header and lateral pipes in conjunction with geosynthetic installation within the LDS and LCS to direct the leachate to the sump area. Plastic Fusion also installed side slope riser pipes in the sump area. GunnCo Pump and Control, Inc. manufactured and installed pumps within the side slope riser pipes to remove leachate from the sump. Crowder Construction Company installed leachate discharge pipes that are joined together in a buried leachate manifold vault to transfer leachate into a common force main pipe. Crowder Construction Company installed and buried the force main pipe that runs south of the landfill in a west to east direction and discharges into the active ash basin. Crowder Construction Company also installed and constructed the control panel area, which consisted of a concrete masonry unit retaining wall, buried vault containing the leachate piping, and control panels connected to the electrical supply.

Crowder Construction Company installed electrical supply in a conduit trench that runs north and parallel to the existing haul road. The electrical lines tie into two transformers to provide a dual electrical power supply located just north of the RAB. The dual power supply allows for an automatic transfer switch in the control panel area to activate if necessary. The control panels are also equipped with high level alarms that monitor leachate levels in the sump area. The pumping systems are equipped with flow meters that monitor leachate flow.

4.2 Entrance Facility Area

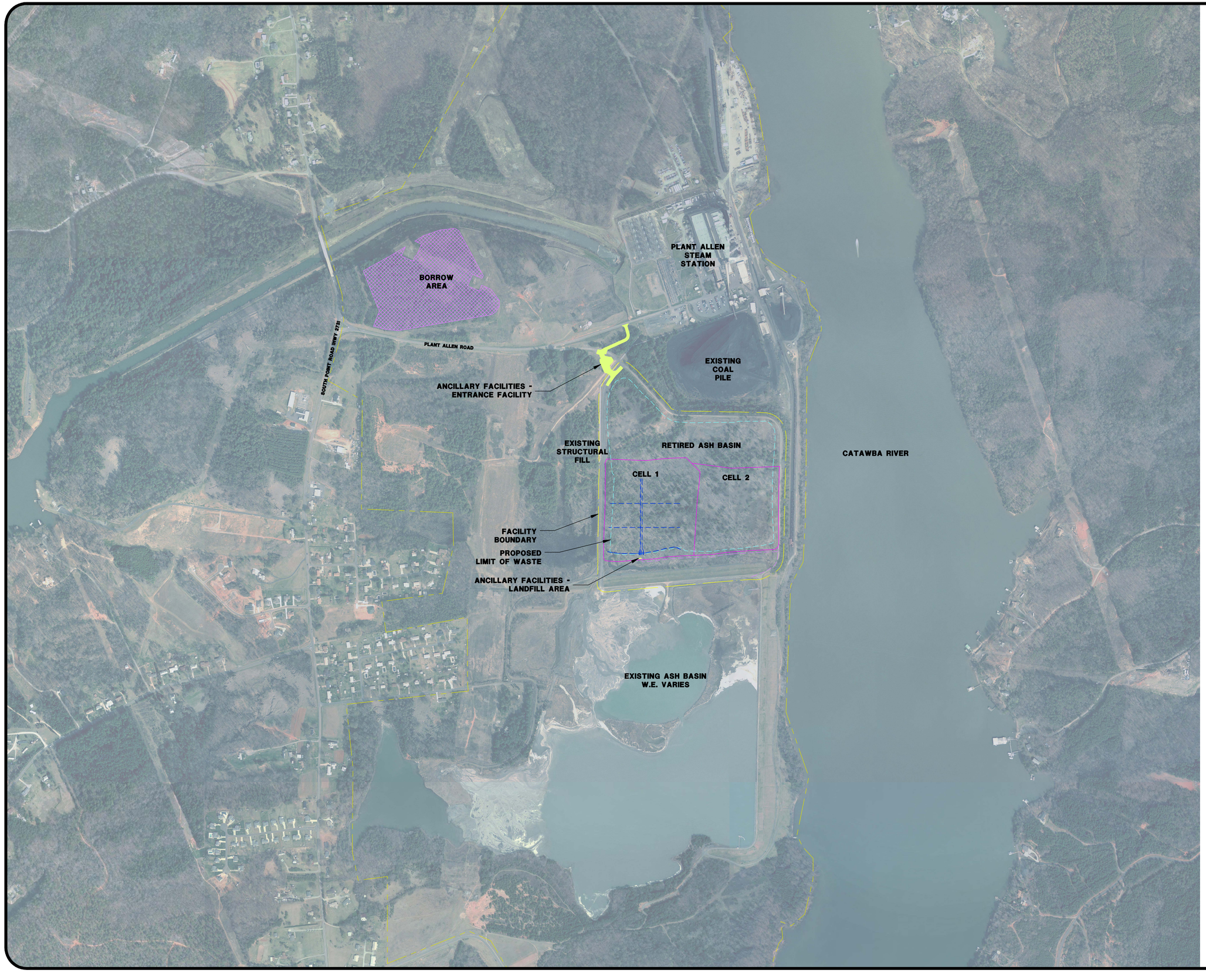
The Entrance Facility Area was constructed to facilitate in Duke Energy's dry ash handling and landfill operations. Ancillary facilities in the Entrance Facility Area included an access road, truck scale, truck wheel rinse, concrete pavement slabs, scale pad basin, and arch bridge. An asphalt pavement access road was constructed to connect Plant Allen Road to the north end of the scale pad area. Within the scale pad area, a truck scale was installed in the lane entering the scale pad area from the north and exiting to the south. Similarly, a truck wheel rinse was installed in the lane entering the scale pad area from south and exiting to the north. Concrete pavement slabs were also constructed within the scale pad area to handle traffic loads and provide drainage to the scale pad basin. An arch bridge was installed south of the scale pad area to span existing sluiced ash pipes and connect it to an existing haul road.

Crowder Construction Company also installed electrical and water supply into the scale pad area. The electrical supply ties into the supply for the landfill area control panels, and it powers the truck scale and truck wheel rinse. The water supply runs parallel to the electrical supply from the truck wheel rinse to a hydrant north of the existing northern perimeter haul road. The water supply is used for the truck wheel rinse, and it also serves as a water supply for the water trucks, which aid in dust suppression.

5. PROJECT DOCUMENTATION

Construction activities and project progress were documented throughout construction. While on site, S&ME engineering staff and technicians observed and documented construction activities as summarized in daily field reports and photographs. Changes to the project plans and specifications were documented with a Notice of Change. The project documentation information is included in Appendix IV.

Site Figures



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE FACILITY BOUNDARY
- PROPOSED LIMIT OF WASTE
- LANDFILL CELL BOUNDARIES
- LDS/LCS PIPES
- FORCE MAIN PIPE
- BORROW AREA
- ANCILLARY FACILITIES

400 0 200 400 800

(IN FEET)

Duke Energy®

S&ME
WWW.SMEINC.COM

NO.	DATE	DESCRIPTION	BY

SITE AERIAL MAP

PHASE I RAB ASH LANDFILL
ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KB	CHECKED BY:
DESIGNED BY:	APPROVED BY:
PROJECT NUMBER 1356-06-825	
SCALE: 1" = 400'	DATE: 7-2-09
DRAWING: 1	OF: 4

DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\CONSTRUCTION\GDT REPORT SITE FIGURE.DWG

Duke Energy ©

S&ME
9751 SOUTHERN PINE BLVD.
CHARLOTTE, N.C. 28273
(704)523-4726
WWW.SMEINC.COM

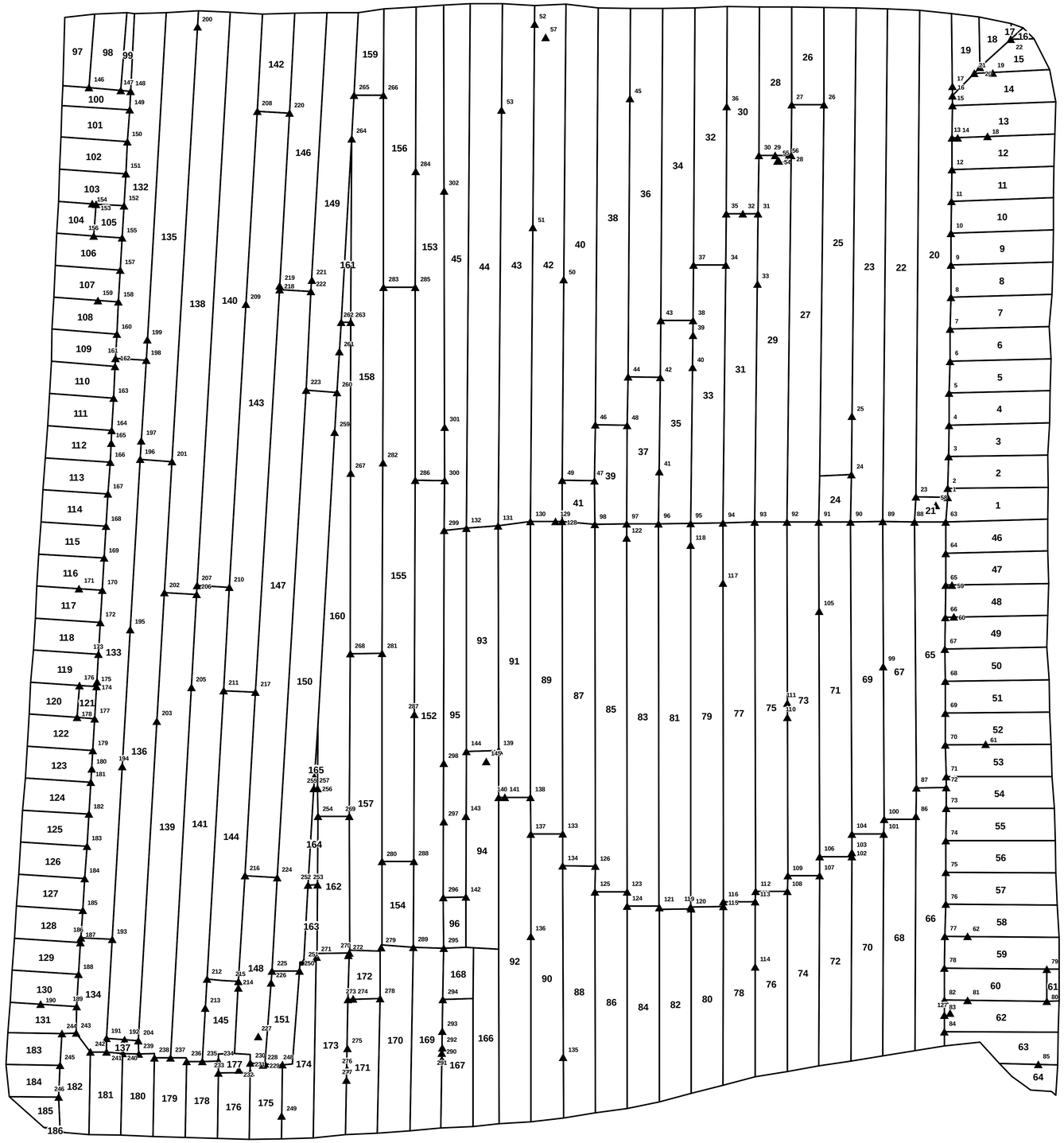
NO.	DATE	DESCRIPTION	BY

CELL 1 CONSTRUCTION AERIAL PHOTOGRAPH

PHASE I RAB ASH LANDFILL
ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

ENGINEERING LICENSE NO: F-0176	
DRAWN BY: N/A	CHECKED BY:
DESIGNED BY: N/A	APPROVED BY:
PROJECT NUMBER: 1356-06-825	
SCALE: NTS	DATE: 5-12-09
DRAWING: 2	OF: 4

DRAWING PATH: G:\SME\DUKE ENERGY\06-825 Plant Allen\Site\Documents\Cell Report Aerial (planning).dwg



REFERENCE:
GEOMEMBRANE AS-BUILT DATA WAS COMPILED FROM SURVEY INFORMATION PROVIDED BY EARNHARDT GRADING, INC. AND GEOMEMBRANE CQA LOGS. THE INFORMATION SHOWN HAS NOT BEEN CERTIFIED BY A PROFESSIONAL LAND SURVEYOR AND REFLECTS ONLY RELATIVE LOCATIONS OF GEOMEMBRANE PANELS AND REPAIR LOCATIONS. PLEASE NOTE THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES.

Legend

150 ▲ Repair Locations

72 Geomembrane Panels

0 20 40 80 Feet

1" = 40'

Duke Energy®

S&ME
9751 SOUTHERN PINE BLVD.
CHARLOTTE, N.C. 28273
(704) 523-4726
WWW.SMEINC.COM

NO.	DATE	DESCRIPTION	BY

CELL 1 CONSTRUCTION
SECONDARY GEOMEMBRANE
AS-BUILT

PHASE I RAB ASH LANDFILL
ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

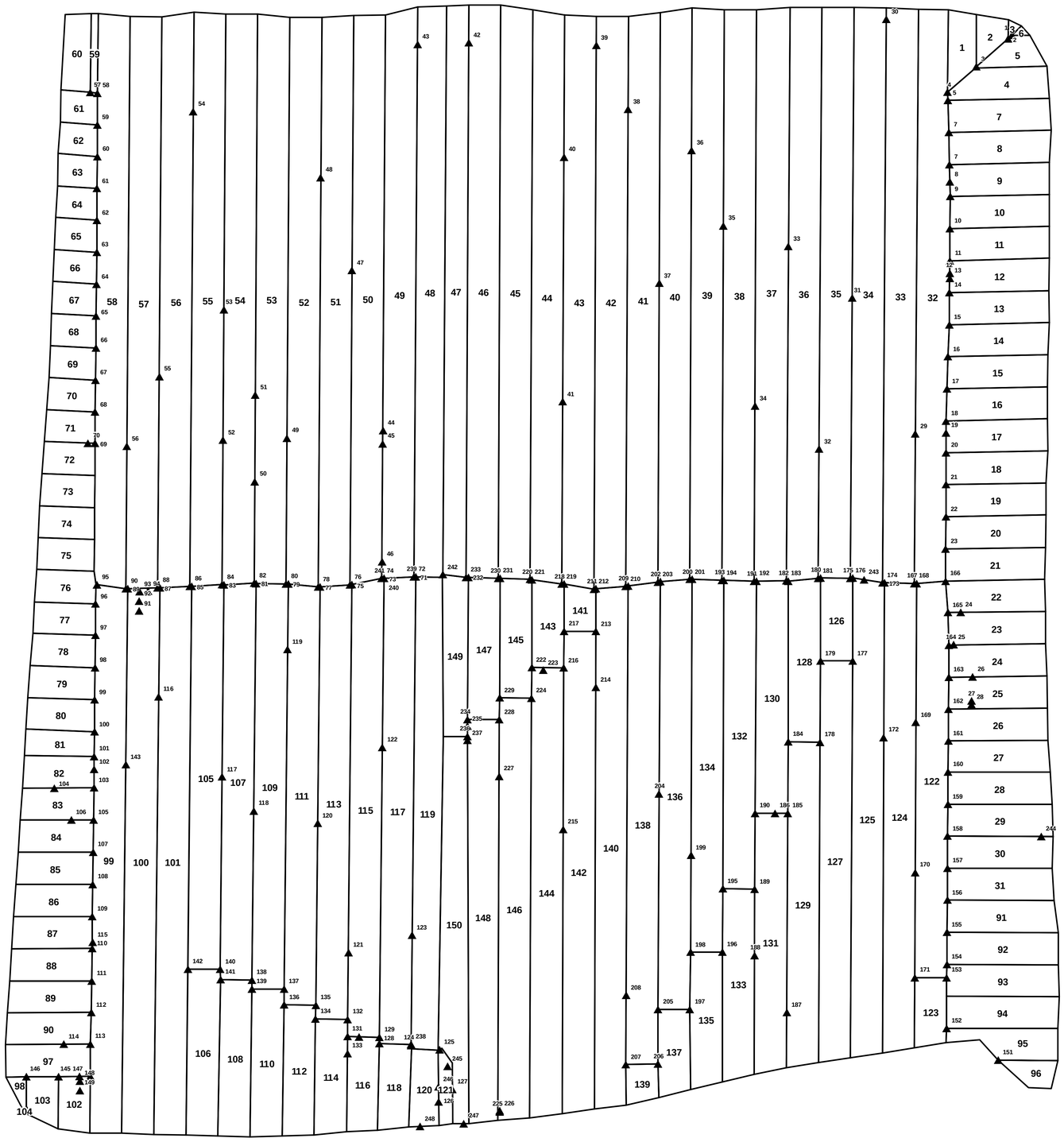
ENGINEERING LICENSE NO.: F-0176

DRAWN BY: CXR	CHECKED BY: CHR
DESIGNED BY: N/A	APPROVED BY:

PROJECT NO: 1356-06-825

SCALE: 1"= 40'	DATE: 06/25/09
DRAWING: 3	OF: 4

DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 - Ash Area\AS-BUILT\Secondary.mxd



REFERENCE:
GEOMEMBRANE AS-BUILT DATA WAS COMPILED FROM SURVEY INFORMATION PROVIDED BY EARNHARDT GRADING, INC. AND GEOMEMBRANE CQA LOGS. THE INFORMATION SHOWN HAS NOT BEEN CERTIFIED BY A PROFESSIONAL LAND SURVEYOR AND REFLECTS ONLY RELATIVE LOCATIONS OF GEOMEMBRANE PANELS AND REPAIR LOCATIONS. PLEASE NOTE THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES.

Legend

150 Repair Locations

72 Geomembrane Panels

0 20 40 80 Feet

1" = 40'

Duke Energy®

S&ME
9751 SOUTHERN PINE BLVD.
CHARLOTTE, N.C. 28273
(704) 523-4726
WWW.SMEINC.COM

NO.	DATE	DESCRIPTION	BY

CELL 1 CONSTRUCTION
PRIMARY GEOMEMBRANE
AS-BUILT

PHASE I RAB ASH LANDFILL
ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

ENGINEERING LICENSE NO.: F-0176

DRAWN BY:	CHECKED BY:
CXR	CHR
DESIGNED BY: N/A	APPROVED BY:

PROJECT NO: 1356-06-825

SCALE:	DATE:
1"= 40'	06/25/09
DRAWING: 4	OF: 4

DRAWING PATH: Q:\1356\DUKE-ENERGY\06-825-Plant Allen\AS-BUILT\Primary.mxd

Frequency Verification Summary Tables

TABLE 1

EARTHWORKS LABORATORY TESTING FREQUENCY VERIFICATION

DESCRIPTION	TEST STANDARD	CELL 1 IN-PLACE VOLUME ESTIMATE (CY)	CONF. QA LAB TEST FREQUENCY (per CY)	NUMBER OF TESTS	
				REQUIRED	PERFORMED
				CONF. QA	CONF. QA
Protective Cover					
Grain-size with Hydrometer	ASTM D 422	52,600[1]	10,000	6	6
Atterberg Limits	ASTM D 4318			6	6

[1] Quantity based on engineer's quantity estimate

TABLE 2

GEOMEMBRANE LABORATORY DESTRUCTIVE TESTING (LDT) FREQUENCY VERIFICATION

LINER TYPE	SEAM TYPE	PROJECT SPECIFICATIONS [1]		MACHINE NUMBER	LENGTH WELDED (FT)	CARRYOVER [2] (FT)	TESTS REQUIRED [3]	TESTS PERFORMED	FAILING TESTS	ADDITIONAL TESTS TO ISOLATE FAILURES
		PEEL (LB/IN)	SHEAR (LB/IN)							
Secondary	Fusion	91	120	760	7,905.50	405.5	15	56	1	2
				522	10,578.50	145.5	21			
				500	64	64	0			
				52	10,113	162	20			
				Total:	**28,661**	**777**	**56**			
Primary	Fusion	91	120	777	2,821	321	5	51	0	0
				760	8,686	128	17			
				522	5,864	364	11			
				500	9,092.50	92.5	18			
				Total:	**26,463.5**	**905.5**	**51**			
	Extrusion	78	120	48	800	0	2	4	0	0
				55	773	0	2			
				Total:	**1,573**	**0**	**4**			

[1] Value listed for peel and shear strengths are for 4 out of 5 test specimens (ASTM D6392); the 5th specimen can be as low as 80% of the listed values.

[2] For each machine, carryover is the length welded from the last LDT sample location.

[3] Based on the difference between the total length welded and carry over divided by the frequency of one (1) laboratory destructive test (LDT) per 500 linear feet.

Construction Certification Statement

CONSTRUCTION CERTIFICATION STATEMENT

FOR

SUBMITTAL 2 OF 2

OF

CELL 1
ALLEN STEAM STATION RAB ASH LANDFILL LINER SYSTEM CONSTRUCTION

OWNER: DUKE ENERGY
OPERATOR: DUKE ENERGY

by:

S&ME, Inc.
9751 Southern Pine Boulevard
Charlotte, North Carolina 28273-5560

I hereby certify that the results of construction quality assurance activities conducted by S&ME Inc., as summarized in this report, indicate that the Allen Steam Station Retired Ash Basin (RAB) Ash Landfill liner system construction was constructed in general accordance with the requirements of the approved Construction Quality Assurance (CQA) Plan.

NORTH CAROLINA PROFESSIONAL SEAL 032153 ENGINEER KENNETH R. DALY

7/13/09

Kenneth R. Daly, P.E.
N.C. Registration No. 032153

APPENDIX I – EARTHWORKS

Protective Cover Laboratory Test Results
Protective Cover As-Built Drawing
Protective Cover Thickness Verification

Protective Cover Laboratory Test Results

SUMMARY OF PROTECTIVE COVER LABORATORY TEST DATA

Sample No.[1]	Sample Depth	Soil Description	USCS Classification	Gravel (% > No. 4) (ASTM D422)	Sand (% < No. 4 & % > No. 200) (ASTM D422)	Silt & Clay (% < No. 200) (ASTM D422)	Atterberg Limits (ASTM D4318)	
							LL	PI
PC-1	Composite	Tan Red Brown Micaceous Coarse to Fine Sandy **Silt**	ML	0.0%	44.1%	54.9%	47	9
PC-2	Composite	Brown Coarse to Fine Sandy Clayey **Silt**	MH	0.0%	36.6%	62.7%	50	13
PC-3	Composite	Tan Orange Brown Fine to Medium Sandy Clayey **Silt** with Mica	MH	0.0%	32.7%	67.3%	54	11
PC-4	Composite	Brown Clayey **Silt** with Fine to Medium Sand and Mica	MH	0.0%	25.9%	73.1%	57	14
PC-5	Composite	Tan Brown Fine to Medium Sandy Clayey **Silt** with Mica	MH	0.0%	31.6%	68.1%	55	10
PC-6	Composite	Reddish Orange Micaceous Coarse to Fine to Medium Sandy **Silt**	ML	0.0%	49.1%	50.6%	53	9

[1] All samples were bulk samples; 6 total laboratory test results for in-place protective cover during construction

Form No. TR-D4318-T89-90 *Client code* *Client Test #* *state #*

Revision No. 0

Revision Date: 11/20/07

Liquid Limit, Plastic Limit, and Plastic Index

S&ME

Another code *ASTM D 4318* ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐ ***Quality Assurance***

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Phase 9**	Report Date:	6/19/09
Project Name:	Allen Retired Ash Landfill Basin (RAB) Ash Landfill	Test Date(s)	6/10-19/0
Client Name:	Duke Energy		
Client Address:			

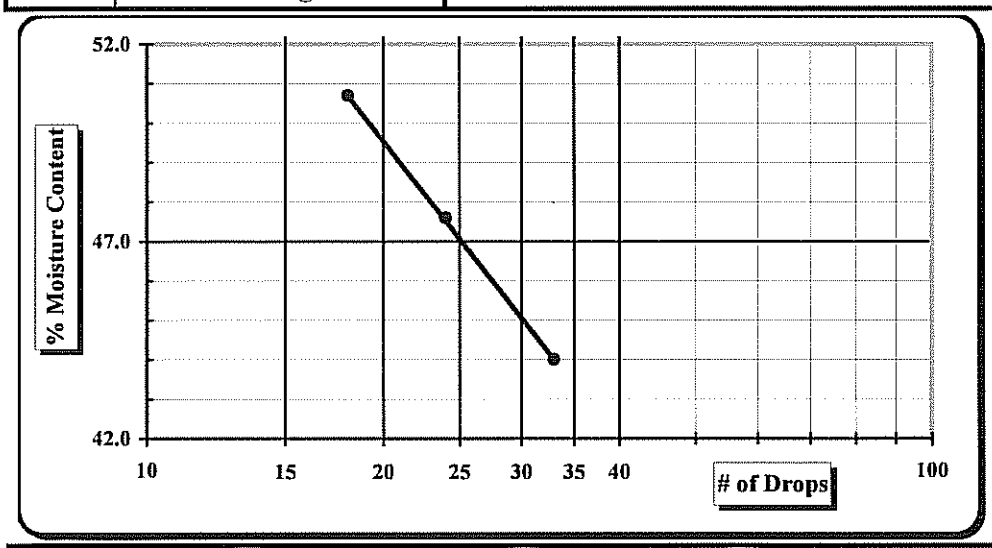
Boring #: Sample #: PC-1 Sample Date: 6/9/09

Location: Cell 1A SW Cover Offset: Elevation: Bulk

Sample Description: Tan Red Brown Micaceous Coarse to Fine Sandy Silt (ML)

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)			Grooving tool		
LL Apparatus			Grooving tool		
Oven			Grooving tool		

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	16	6	34				PO	19	
A	Tare Weight	15.71	14.05	14.02				15.13	15.81	
B	Wet Soil Weight + A	26.87	24.35	23.95				21.33	21.94	
C	Dry Soil Weight + A	23.46	21.03	20.61				19.62	20.25	
D	Water Weight (B-C)	3.41	3.32	3.34				1.71	1.69	
E	Dry Soil Weight (C-A)	7.75	6.98	6.59				4.49	4.44	
F	% Moisture (D/E)*100	44.0%	47.6%	50.7%				38.1%	38.1%	
N	# OF DROPS	33	24	18				*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							**38.1%**		



One Point Liquid Limit			
N	**Factor**	**N**	**Factor**
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☐

Liquid Limit **47**

Plastic Limit **38**

Plastic Index 9

Group Symbol **ML**

Multipoint Method ☑

One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *Estimate the % Retained on the #40 Sieve:*

Notes / Deviations / References:

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Karen Warner — *Technician Name* — _____ *Date*

Ken Daly — *Technical Responsibility* — _____ *Date*

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Form No. TR-D422-2
Revision No. 0
Revision Date: 02/20/08

Particle Size Analysis of Soils

ASTM D 422

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #: **1356-06-825 Task 9** Report Date: 6/19/09
Project Name: Allen Steam Station RAB Ash Landfill Test Date(s): 6/10-19/09
Client Name: Duke Energy Address:
Boring #: Sample #: PC-1 Sample Date: 6/9/09
Location: Cell 1A SW Cover Offset: Elevation: Bulk
Sample Description: Tan Red Brown Micaceous Coarse to Fine Sandy Silt (ML)

Pan #:		Beaker #:		**Apparent Relative Density**		**2.650**			
Hydrometer Jar #:									
Pan Tare Weight (grams):				**Moisture Content**	Hygroscopic	Natural			
Total Sample Air Dried Wt. + tare wt. (grams):	363.84			Tare #	45				
Weight of Total Sample Air Dried:	363.84		A	Tare Wt.	13.93				
Weight of Air Dried Hydrometer Sample (g):	50.03		B	Wet Wt. + A	27.78				
Total Sample Oven Dried:	343.54		C	Dry Wt. + A	26.99				
Hydrometer Sample Oven Dried (**W**):	47.18		D	Water Wt. (B-C)	0.79				
% Passing #10:	97.7%		E	Dry Wt. (C-A)	13.06				
Correction Factor a (Table 1):	1.00			% Moisture (100 x D/E)	6.05%				

Sieve	Retained Wt.	Percent Passing	
3.0"	0.0	Pan # (washed)	100.0%
1.5"	0.0		100.0%
1.0"	0.0		100.0%
3/4"	0.0		100.0%
1/2"	0.0		100.0%
3/8"	2.7	Soil Mortar	99.2%
#4	3.4		99.0%
#10	7.9	100.0%	97.7%
#20	3.6	92.4%	90.3%
#40	8.8	81.3%	79.4%
#60	13.3	71.9%	70.3%
#100	16.6	64.8%	63.3%
#200	20.7	56.1%	54.9%

Description of Sand & Gravel Particles Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐
Stirring Apparatus: A ☐ B ☐ Dispersion Time: 1 min. Sodium Hexametaphosphate: 40 g./ Liter
Balance: ID No. Cal. Date: Hydrometer: *ID No. Cal. Date:*
Control Cylinder ☒ **Composite Correction** ☐ **Type: 151H** ☐ **152H** ☒

Time T (Min.)	Temp. (0.5 °C)	Hydrometer Reading	Corrections: Control Cylinder	Corrections: Composite Correction	Hydrometer R	Percent Passing: P(-#10) = (R x a / W) x 100	Percent Passing: P (total) = P x % Passing #10	Effective Depth L	Table 3 K	Diameter D = K x ((L/T)^1/2
1	23.0	31.0	5.0		26.00	55.1%	53.8%	12.0	0.01317	0.04568
2	23.0	29.0	5.0		24.00	50.9%	49.7%	12.4	0.01317	0.03274
5	23.0	25.5	5.0		20.50	43.5%	42.5%	12.9	0.01317	0.02118
15	23.0	18.0	5.0		13.00	27.6%	26.9%	14.2	0.01317	0.01280
30	23.0	15.0	5.0		10.00	21.2%	20.7%	14.7	0.01317	0.00920
60	23.0	11.0	5.0		6.00	12.7%	12.4%	15.3	0.01317	0.00665
250	23.0	9.5	5.0		4.50	9.5%	9.3%	15.6	0.01317	0.00329
1440	21.5	7.0	5.5		1.50	3.2%	3.1%	16.0	0.01340	0.00141

References / Comments / Deviations ASTM D 422, D 2487, D 4318

Karen Warner	117900	Ken Daly	Project Engineer	
Technician Name	*Certification #*	*Technical Responsibility*	*Position*	*Date*

Form No. TR-D422-3
Revision No. 0
Revision Date: 02/20/08

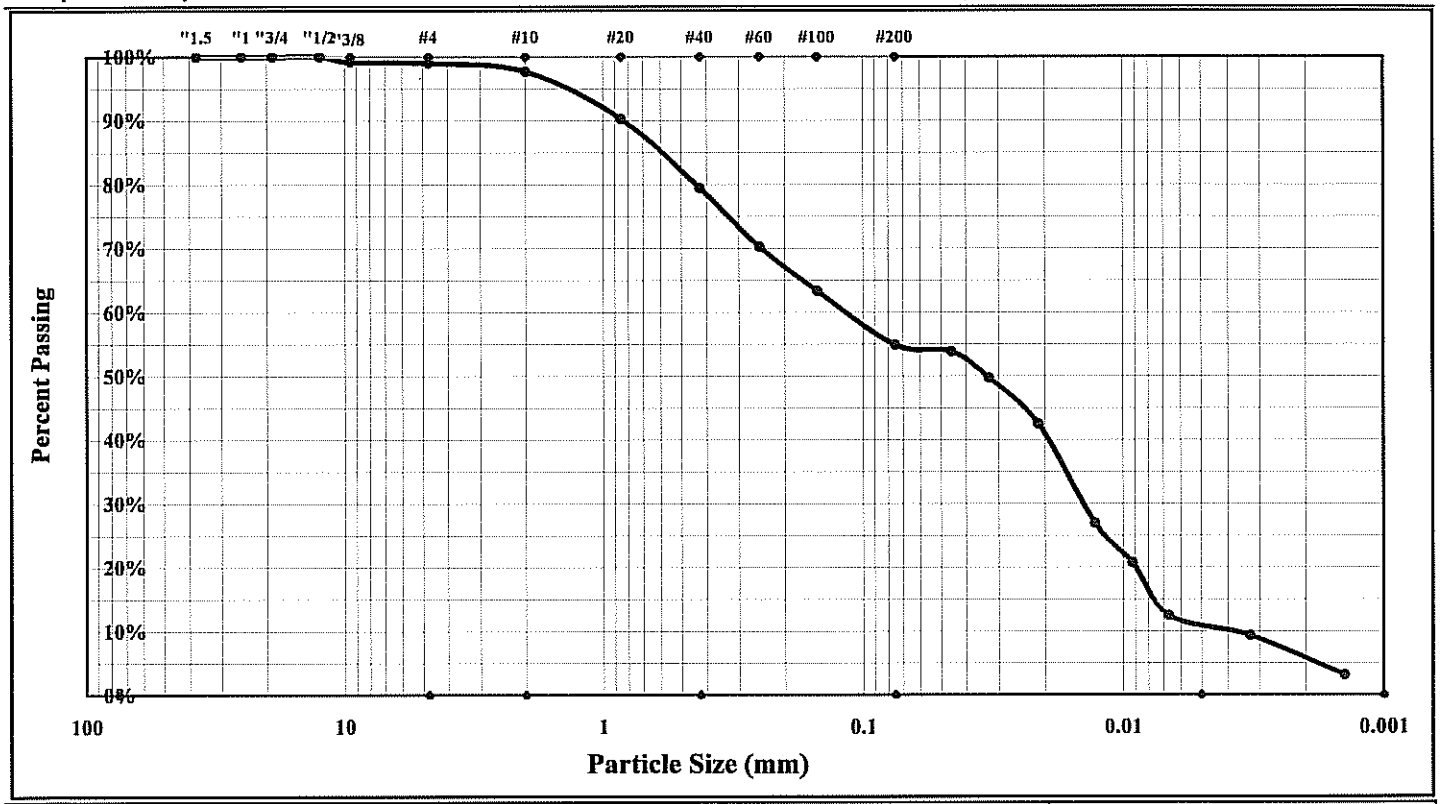
Particle Size Analysis of Soils

ASTM D422

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME Project #:	1356-06-825 Task 9	Report Date:	6/19/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/10-19/09
Client Name:	Duke Energy		
Address:			
Boring #:	Sample #: PC-1	Sample Date:	6/9/09
Location:	Cell 1A SW Cover Offset:	Elevation:	Bulk
Sample Description:	Tan Red Brown Micaceous Coarse to Fine Sandy Silt (ML)		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and >2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:	#4	Gravel:	0.0%	Silt	43.9%
Silt & Clay (% Passing #200):	54.9%	Total Sand:	44.1%	Clay	11.0%
Apparent Relative Density	2.650	Moisture Content		Colloids	1.0%
Liquid Limit	47	Plastic Limit	38	Plastic Index	9
Coarse Sand:	1.3%	Medium Sand:	18.3%	Fine Sand:	24.6%

Description of Sand and Gravel Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Apparatus B: Air Jet Dispersion Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References / Comments / Deviations: AASTM D 4318, D 854, D 2487

Ken Daly		Project Engineer	
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No. TR-D4318-T89-90 *Client code* *Client Test #* *state #*

Revision No. 0

Revision Date: 11/20/07

Liquid Limit, Plastic Limit, and Plastic Index

S&ME

Another code *ASTM D 4318* ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐ ***Quality Assurance***

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Phase 9**	Report Date:	6/19/09
Project Name:	Allen Retired Ash Landfill Basin (RAB) Ash Landfill	Test Date(s)	6/10-19/0
Client Name:	Duke Energy		
Client Address:			

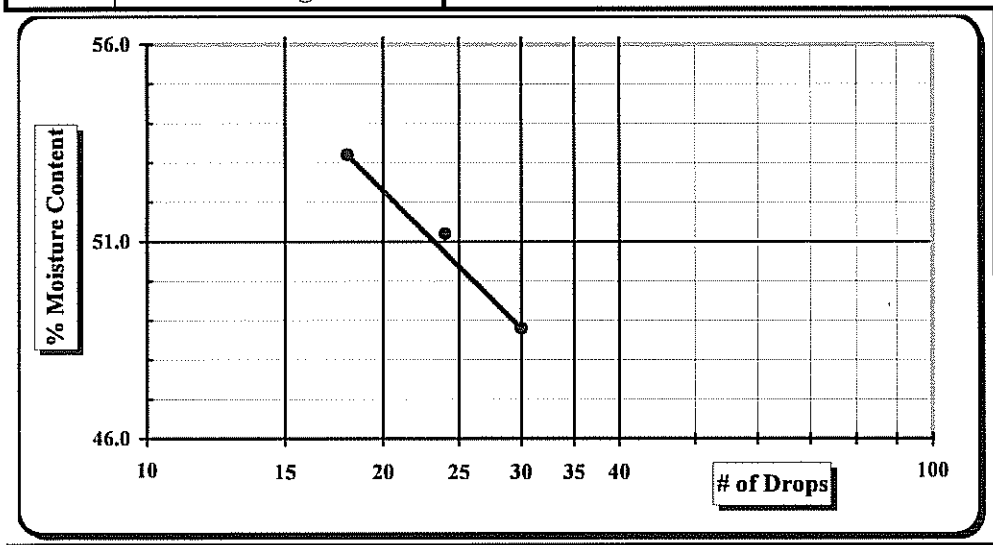
Boring #: Sample #: PC-2 Sample Date: 6/9/09

Location: Cell 1B SE Cover Offset: Elevation: Bulk

Sample Description: Brown Coarse to Fine Sandy Clayey Silt (MH)

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)			Grooving tool		
LL Apparatus			Grooving tool		
Oven			Grooving tool		

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	58	47	8				59	22	
A	Tare Weight	13.97	15.68	13.94				15.80	13.93	
B	Wet Soil Weight + A	23.42	24.18	23.70				22.16	20.50	
C	Dry Soil Weight + A	20.32	21.30	20.31				20.44	18.73	
D	Water Weight (B-C)	3.10	2.88	3.39				1.72	1.77	
E	Dry Soil Weight (C-A)	6.35	5.62	6.37				4.64	4.80	
F	% Moisture (D/E)*100	48.8%	51.2%	53.2%				37.1%	36.9%	
N	# OF DROPS	30	24	18				*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							**37.0%**		



One Point Liquid Limit			
N	**Factor**	**N**	**Factor**
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☐

Liquid Limit **50**

Plastic Limit **37**

Plastic Index 13

Group Symbol **MH**

Multipoint Method ☑

One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *Estimate the % Retained on the #40 Sieve:*

Notes / Deviations / References:

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Karen Warner — *Technician Name* — *Date*

Ken Daly — *Technical Responsibility* — *Date*

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Form No. TR-D422-2
Revision No. 0
Revision Date: 02/20/08

Particle Size Analysis of Soils

ASTM D 422

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Task 9**	Report Date:	6/19/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/10-19/09
Client Name:	Duke Energy	Address:	
Boring #:		Sample #: PC-2	Sample Date: 6/9/09
Location:	Cell 1B SE Cover	Offset:	Elevation: Bulk
Sample Description:	Brown Coarse to Fine Sandy Clayey Silt (MH)		

Pan #:		Beaker #:		**Apparent Relative Density**		**2.650**	Sieve	Retained Wt.	Percent Passing	
Hydrometer Jar #:							3.0"	0.0	Pan # (washed)	100.0%
Pan Tare Weight (grams):				**Moisture Content**	Hygroscopic	Natural	1.5"	0.0		100.0%
Total Sample Air Dried Wt. + tare wt. (grams):	347.23			Tare #	55		1.0"	0.0		100.0%
Weight of Total Sample Air Dried:	347.23	A		Tare Wt.	14.33		3/4"	0.0		100.0%
Weight of Air Dried Hydrometer Sample (g):	50.03	B		Wet Wt. + A	27.18		1/2"	0.0		100.0%
Total Sample Oven Dried:	342.46	C		Dry Wt. + A	27.00		3/8"	0.0	Soil Mortar	100.0%
Hydrometer Sample Oven Dried (**W**):	49.33	D		Water Wt. (B-C)	0.18		#4	2.4		99.3%
% Passing #10:	98.0%	E		Dry Wt. (C-A)	12.67		#10	7.0	100.0%	98.0%
Correction Factor a (Table 1):	1.00			% Moisture (100 x D/E)	1.42%		#20	2.6	94.7%	92.8%
							#40	7.3	85.3%	83.5%
							#60	11.4	76.9%	75.3%
							#100	14.3	70.9%	69.5%
							#200	17.8	64.0%	62.7%

Description of Sand & Gravel Particles Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Stirring Apparatus: A ☐ B ☐ Dispersion Time: 1 min. Sodium Hexametaphosphate: 40 g./ Liter

Balance: ID No. Cal. Date: Hydrometer: *ID No. Cal. Date:*

Control Cylinder ☒ **Composite Correction** ☐ **Type: 151H** ☐ **152H** ☒

Time	Temp.	Hydrometer	Corrections		Hydrometer	Percent Passing		Effective Depth	Table 3	Diameter
			Control Cylinder	Composite Correction		P(-#10) =	P (total) =			D =
T (Min.)	(0.5 °C)	Reading			R	(R x a / W) x 100	P x % Passing #10	L	K	K x ((L/T)$^{1/2}$
1	23.0	34.5	5.0		29.50	59.8%	58.6%	11.5	0.01317	0.04458
2	32.0	32.0	5.0		27.00	54.7%	53.6%	11.9	0.01217	0.02964
5	23.0	28.0	5.0		23.00	46.6%	45.7%	12.5	0.01317	0.02084
15	23.0	22.0	5.0		17.00	34.5%	33.8%	13.5	0.01317	0.01250
30	23.0	18.0	5.0		13.00	26.4%	25.8%	14.2	0.01317	0.00905
60	23.0	14.5	5.0		9.50	19.3%	18.9%	14.7	0.01317	0.00653
250	23.0	11.0	5.0		6.00	12.2%	11.9%	15.3	0.01317	0.00326
1440	21.5	8.0	5.5		2.50	5.1%	5.0%	15.9	0.01340	0.00141

References / Comments / Deviations ASTM D 422, D 2487, D 4318

Karen Warner	117900	Ken Daly	Project Engineer	
Technician Name	*Certification #*	*Technical Responsibility*	*Position*	*Date*

Form No. TR-D422-3
Revision No. 0
Revision Date: 02/20/08

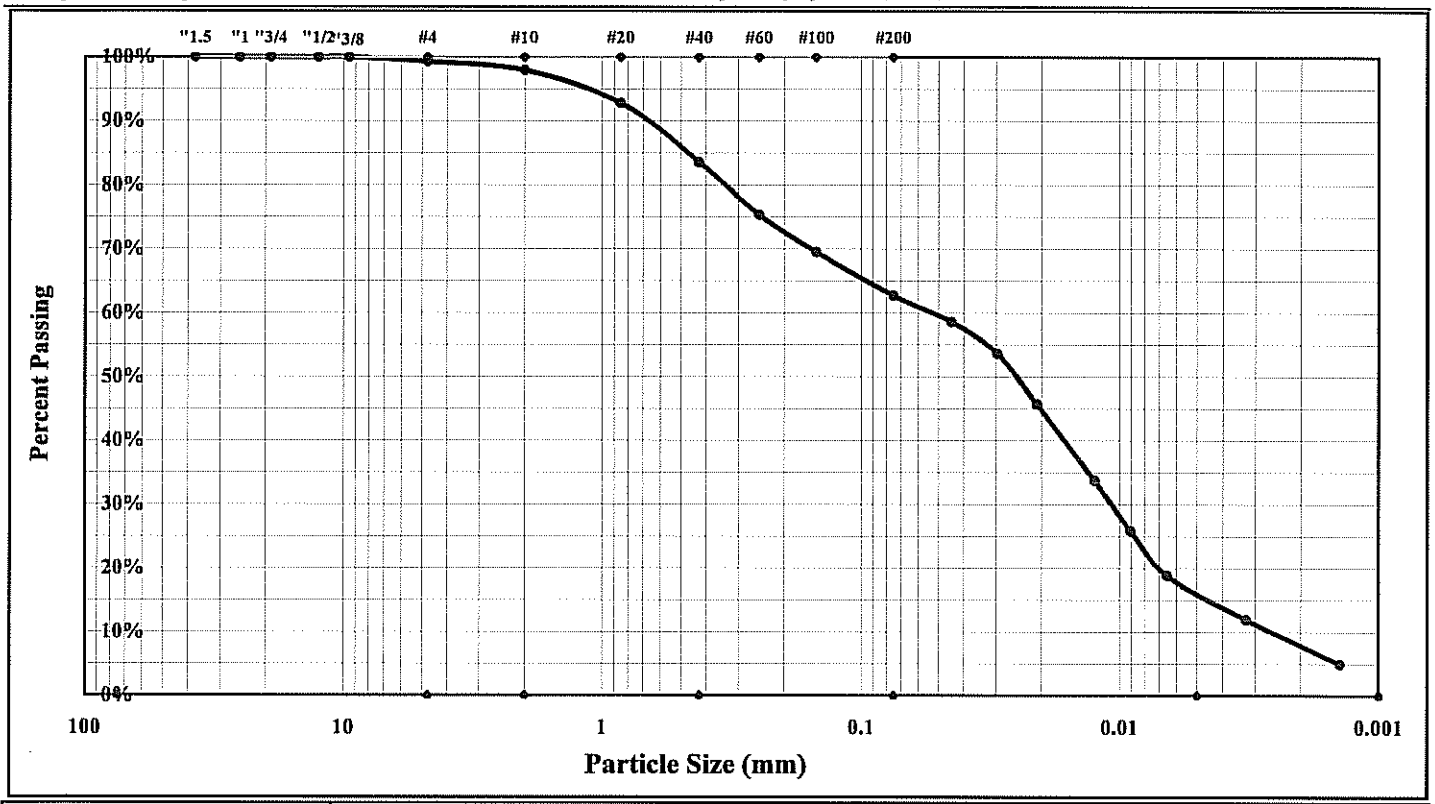
Particle Size Analysis of Soils

ASTM D422

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME Project #:	1356-06-825 Task 9	Report Date:	6/19/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/10-19/09
Client Name:	Duke Energy		
Address:			
Boring #:	Sample #: PC-2	Sample Date:	6/9/09
Location:	Cell 1B SE Cover Offset:	Elevation:	Bulk
Sample Description:	Brown Coarse to Fine Sandy Clayey Silt (MH)		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and >2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:	#4	Gravel:	0.0%	Silt	46.7%
Silt & Clay (% Passing #200):	62.7%	Total Sand:	36.6%	Clay	16.0%
Apparent Relative Density	2.650	Moisture Content		Colloids	1.5%
Liquid Limit	50	Plastic Limit	37	Plastic Index	13
Coarse Sand:	1.3%	Medium Sand:	14.4%	Fine Sand:	20.9%

Description of Sand and Gravel Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Apparatus B: Air Jet Dispersion Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References / Comments / Deviations: AASTM D 4318, D 854, D 2487

Ken Daly		Project Engineer	
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No. TR-D4318-T89-90 *Client code* *Client Test #* *state #*

Revision No. 0

Revision Date: 11/20/07

Liquid Limit, Plastic Limit, and Plastic Index

S&ME

Another code *ASTM D 4318* ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐ ***Quality Assurance***

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

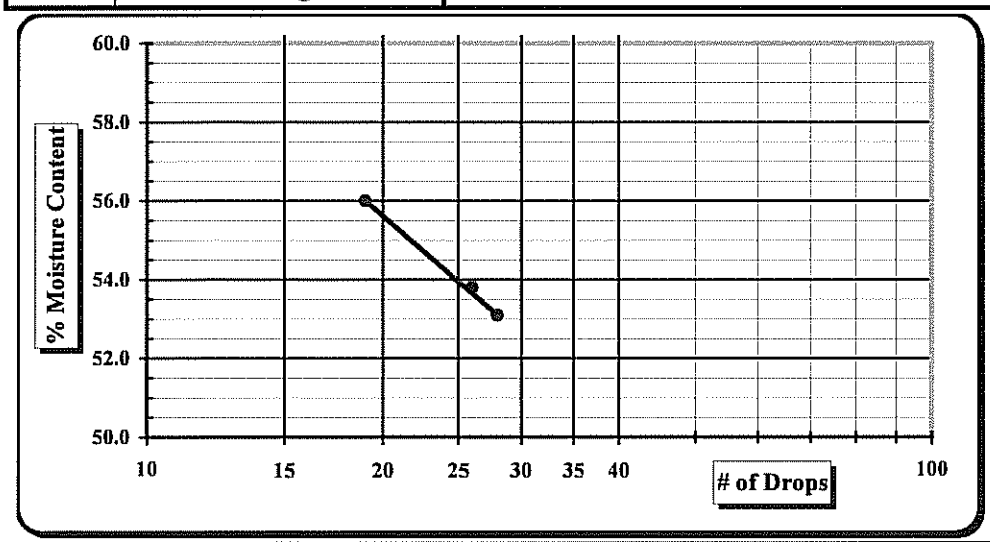
Project #:	**1356-06-825 Phase 9**	Report Date:	6/24/09
Project Name:	Allen Retired Ash Landfill Basin (RAB) Ash Landfill	Test Date(s)	6/16-24/09
Client Name:	Duke Energy		
Client Address:			

Location:	Protective Cover	Sample #: PC-3	Sample Date: 6/15/09
	Middle section Cell 1B	Offset:	Elevation:

Sample Description: Tan Orange Brown Fine to Medium Sandy Clayey Silt (MH) with Mica

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)			Grooving tool		
LL Apparatus			Grooving tool		
Oven			Grooving tool		

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	22	19	58				34	WN	
A	Tare Weight	13.93	15.82	13.98				13.98	16.59	
B	Wet Soil Weight + A	26.82	28.82	24.59				20.19	22.79	
C	Dry Soil Weight + A	22.35	24.27	20.78				18.33	20.94	
D	Water Weight (B-C)	4.47	4.55	3.81				1.86	1.85	
E	Dry Soil Weight (C-A)	8.42	8.45	6.80				4.35	4.35	
F	% Moisture (D/E)*100	53.1%	53.8%	56.0%				42.8%	42.5%	
N	# OF DROPS	28	26	19				*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							**42.7%**		



One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☐

Liquid Limit **54**

Plastic Limit **43**

Plastic Index 11

Group Symbol **MH**

Multipoint Method ☑

One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *Estimate the % Retained on the #40 Sieve:*

Notes / Deviations / References:

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Jennifer Olsen	6/24/2009	Ken Daly	
Technician Name	*Date*	*Technical Responsibility*	*Date*

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Form No. TR-D422-2
Revision No. 0
Revision Date: 02/20/08

Particle Size Analysis of Soils

ASTM D 422

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME

Project #:	**1356-06-825 Task 9**	Report Date:	6/24/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/16-24/09
Client Name:	Duke Energy	Address:	
Location:	Protective cover	Sample #: PC-3	Sample Date: 6/15/09
	middle section cell 1B	Offset:	Elevation:
Sample Description:	Tan Orange Brown Fine to Medium Sandy Clayey Silt (MH) with Mica		

Pan #:	FJW	Beaker #:	TY		**Apparent Relative Density (Assumed)**		**2.650**				
Hydrometer Jar #:			4								
Pan Tare Weight (grams):			0.00		**Moisture Content**	Hygroscopic	Natural				
Total Sample Air Dried Wt. + tare wt. (grams):			245.20		Tare #	45					
Weight of Total Sample Air Dried:			245.20	A	Tare Wt.	13.96					
Weight of Air Dried Hydrometer Sample (g):			50.00	B	Wet Wt. + A	24.64					
Total Sample Oven Dried:			238.60	C	Dry Wt. + A	24.35					
Hydrometer Sample Oven Dried (**W**):			48.64	D	Water Wt. (B-C)	0.29					
% Passing #10:			99.1%	E	Dry Wt. (C-A)	10.39					
Correction Factor a (Table 1):			1.00		% Moisture (100 x D/E)	2.79%					

Sieve	Retained Wt.	Percent Passing	
3.0"		Pan # (washed)	100.0%
1.5"			100.0%
1.0"			100.0%
3/4"		55	100.0%
1/2"			100.0%
3/8"		Soil Mortar	100.0%
#4	0.0		100.0%
#10	2.2	100.0%	99.1%
#20	4.0	91.7%	90.8%
#40	7.9	83.8%	83.0%
#60	10.8	77.9%	77.2%
#100	12.9	73.5%	72.9%
#200	15.6	68.0%	67.3%

Description of Sand & Gravel Particles Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Stirring Apparatus: A ☐ B ☐ Dispersion Time: 1 min. Sodium Hexametaphosphate: 40 g./ Liter

Balance: ID No. Cal. Date: Hydrometer: *ID No. Cal. Date:*

Control Cylinder ☒ **Composite Correction** ☐ **Type: 151H** ☐ **152H** ☒

Time	Temp.	Hydrometer	Corrections		Hydrometer	Percent Passing		Effective Depth	Table 3	Diameter
			Control Cylinder	Composite Correction		P(-#10) =	P (total) =			D =
T (Min.)	(0.5 °C)	Reading			R	(R x a / W) x 100	P x % Passing #10	L	K	K x ((L/T)$^{1/2}$
1	21.0	37.0	4.5		32.50	66.8%	66.2%	11.0	0.01348	0.04464
2	21.0	35.0	4.5		30.50	62.7%	62.1%	11.3	0.01348	0.03203
5	21.0	30.5	4.5		26.00	53.5%	53.0%	12.0	0.01348	0.02091
15	21.0	23.0	4.5		18.50	38.0%	37.7%	13.3	0.01348	0.01267
30	21.0	19.0	4.5		14.50	29.8%	29.5%	13.9	0.01348	0.00918
60	21.5	15.5	4.0		11.50	23.6%	23.4%	14.4	0.01340	0.00657
250	21.5	11.0	4.0		7.00	14.4%	14.3%	15.1	0.01340	0.00330
1440	21.5	8.0	4.0		4.00	8.2%	8.1%	15.6	0.01340	0.00140

References / Comments / Deviations ASTM D 422, D 2487, D 4318

Jennifer Olsen	117926	Ken Daly		
Technician Name	*Certification #*	*Technical Responsibility*	*Position*	*Date*

Form No. TR-D422-3
Revision No. 0
Revision Date: 02/20/08

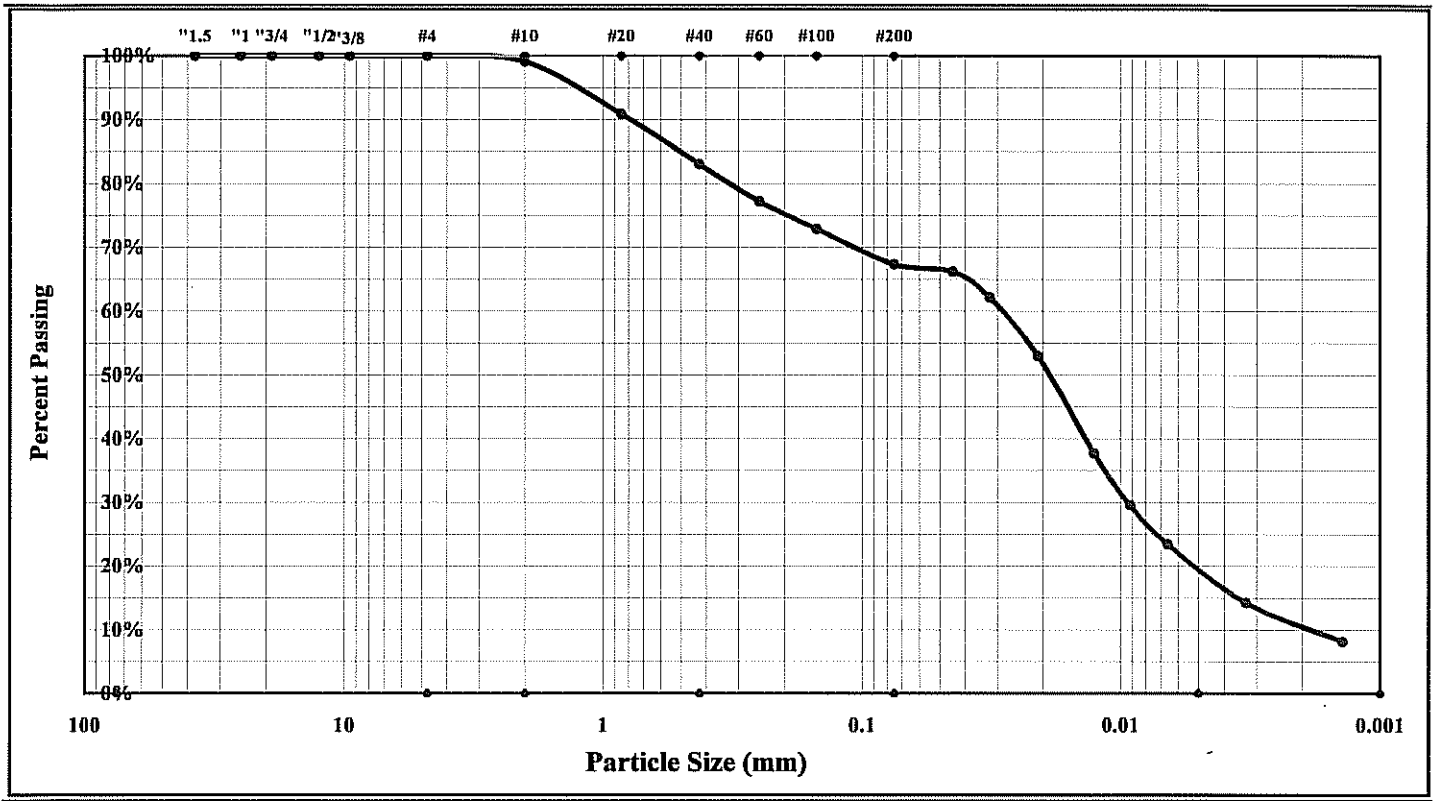
Particle Size Analysis of Soils

ASTM D422

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME Project #:	1356-06-825 Task 9	Report Date:	6/24/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/16-24/09
Client Name:	Duke Energy		
Address:			
Location:	Protective cover	Sample #: PC-3	Sample Date: 6/15/09
	middle section cell	Offset:	Elevation:
Sample Description:	Tan Orange Brown Fine to Medium Sandy Clayey Silt (MH) with Mica		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and >2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:	#4	Gravel:	0.0%	Silt	47.8%
Silt & Clay (% Passing #200):	67.3%	Total Sand:	32.7%	Clay	19.5%
ent Relative Density (Assumed)	2.650	Moisture Content		Colloids	
Liquid Limit	54	Plastic Limit	43	Plastic Index	11
Coarse Sand:	0.9%	Medium Sand:	16.1%	Fine Sand:	15.6%

Description of Sand and Gravel: Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Apparatus B: Air Jet Dispersion — Dispersion Period: 1 min. — Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References / Comments / Deviations: AASTM D 4318, D 854, D 2487

Ken Daly		Project Engineer	
Technical Responsibility	*Signature*	*Position*	*Date*

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Form No. TR-D4318-T89-90 *Client code* *Client Test #* *state #*

Revision No. 0

Revision Date: 11/20/07

Liquid Limit, Plastic Limit, and Plastic Index

S&ME

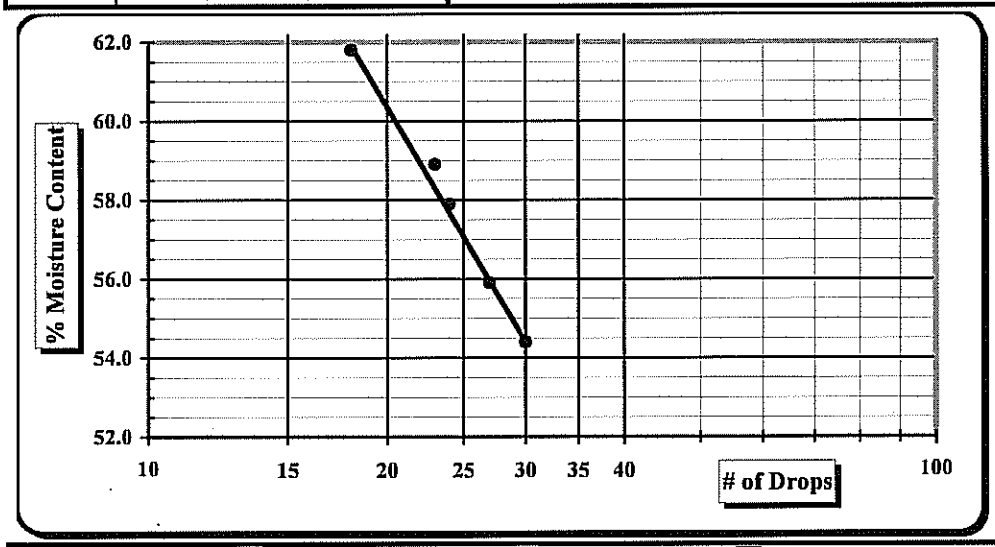
Another code *ASTM D 4318* ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐ ***Quality Assurance***

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Phase 9**	Report Date:	6/24/09
Project Name:	Allen Retired Ash Landfill Basin (RAB) Ash Landfill	Test Date(s)	6/22-24/09
Client Name:	Duke Energy		
Client Address:			
Location:	Cell 1A E. Middle section "protective cover"	Sample #: PC-4 / Offset:	Sample Date: 6/19/09 / Elevation:
Sample Description:	Brown Clayey Silt (MH) with Fine to Medium Sand and Mica		

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)			Grooving tool		
LL Apparatus			Grooving tool		
Oven			Grooving tool		

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	43	BA	45	PP	23		44	42	
A	Tare Weight	13.86	15.35	13.93	16.15	14.06		15.69	13.98	
B	Wet Soil Weight + A	26.01	27.99	24.87	27.56	25.27		21.94	20.14	
C	Dry Soil Weight + A	21.73	23.46	20.86	23.33	20.99		20.06	18.31	
D	Water Weight (B-C)	4.28	4.53	4.01	4.23	4.28		1.88	1.83	
E	Dry Soil Weight (C-A)	7.87	8.11	6.93	7.18	6.93		4.37	4.33	
F	% Moisture (D/E)*100	54.4%	55.9%	57.9%	58.9%	61.8%		43.0%	42.3%	
N	# OF DROPS	30	27	24	23	18		*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							**42.7%**		



One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☐

Liquid Limit **57**

Plastic Limit **43**

Plastic Index **14**

Group Symbol **MH**

Multipoint Method ☑

One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *Estimate the % Retained on the #40 Sieve:*

Notes / Deviations / References:

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Jennifer Olsen	6/24/2009	Ken Daly	
Technician Name	*Date*	*Technical Responsibility*	*Date*

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Form No. TR-D422-2
Revision No. 0
Revision Date: 02/20/08

Particle Size Analysis of Soils

ASTM D 422

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Task 9**	Report Date:	6/26/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/22-26/09
Client Name:	Duke Energy	Address:	
Location:	Cell 1A E Middle section	Sample #: PC-4	Sample Date: 6/19/09
	"protective cover"	Offset:	Elevation:
Sample Description:	Brown Clayey Silt (MH) with Fine to Medium Sand and Mica		

Pan #:	180	Beaker #:	TY	**Apparent Relative Density (Assumed)**		**2.650**			
Hydrometer Jar #:			7						
Pan Tare Weight (grams):			0.00	**Moisture Content**	Hygroscopic	Natural			
Total Sample Air Dried Wt. + tare wt. (grams):			267.58		Tare #	OO			
Weight of Total Sample Air Dried:			267.58	A	Tare Wt.	16.33			
Weight of Air Dried Hydrometer Sample (g):			50.00	B	Wet Wt. + A	26.97			
Total Sample Oven Dried:			264.36	C	Dry Wt. + A	26.84			
Hydrometer Sample Oven Dried (**W**):			49.39	D	Water Wt. (B-C)	0.13			
% Passing #10:			98.5%	E	Dry Wt. (C-A)	10.51			
Correction Factor a (Table 1):			1.00		% Moisture (100 x D/E)	1.24%			

Sieve	Retained Wt.	Percent Passing	
3.0"		Pan # (washed)	100.0%
1.5"			100.0%
1.0"			100.0%
3/4"		7	100.0%
1/2"	0.0		100.0%
3/8"	2.6	Soil Mortar	99.0%
#4	2.8		99.0%
#10	3.9	100.0%	98.5%
#20	1.2	97.6%	96.2%
#40	4.3	91.3%	90.0%
#60	7.5	84.8%	83.6%
#100	10.0	79.8%	78.6%
#200	12.8	74.2%	73.1%

Description of Sand & Gravel Particles Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Stirring Apparatus: A ☐ B ☐ Dispersion Time: 1 min. Sodium Hexametaphosphate: 40 g./ Liter

Balance: ID No. Cal. Date: Hydrometer: *ID No. Cal. Date:*

Control Cylinder ☒ **Composite Correction** ☐ **Type: 151H** ☐ **152H** ☒

Time T (Min.)	Temp. (0.5 °C)	Hydrometer Reading	Corrections: Control Cylinder	Corrections: Composite Correction	Hydrometer R	Percent Passing: P(-#10) = (R x a / W) x 100	Percent Passing: P (total) = P x % Passing #10	Effective Depth L	Table 3 K	Diameter D = K x ((L/T)$^{1/2}$
1	21.0	41.0	4.5		36.50	73.9%	72.8%	10.3	0.01348	0.04328
2	21.0	38.5	4.5		34.00	68.8%	67.8%	10.7	0.01348	0.03121
5	21.0	31.5	4.5		27.00	54.7%	53.9%	11.9	0.01348	0.02077
15	21.0	28.0	4.5		23.50	47.6%	46.9%	12.4	0.01348	0.01228
30	21.0	22.0	4.5		17.50	35.4%	34.9%	13.4	0.01348	0.00902
60	21.0	19.0	4.5		14.50	29.4%	28.9%	13.9	0.01348	0.00649
250	21.0	12.0	4.5		7.50	15.2%	15.0%	15.1	0.01348	0.00331
1440	21.5	7.5	4.0		3.50	7.1%	7.0%	15.7	0.01340	0.00140

References / Comments / Deviations

Jennifer Olsen	117926	Ken Daly		
Technician Name	*Certification #*	*Technical Responsibility*	*Position*	*Date*

Form No. TR-D422-3
Revision No. 0
Revision Date: 02/20/08

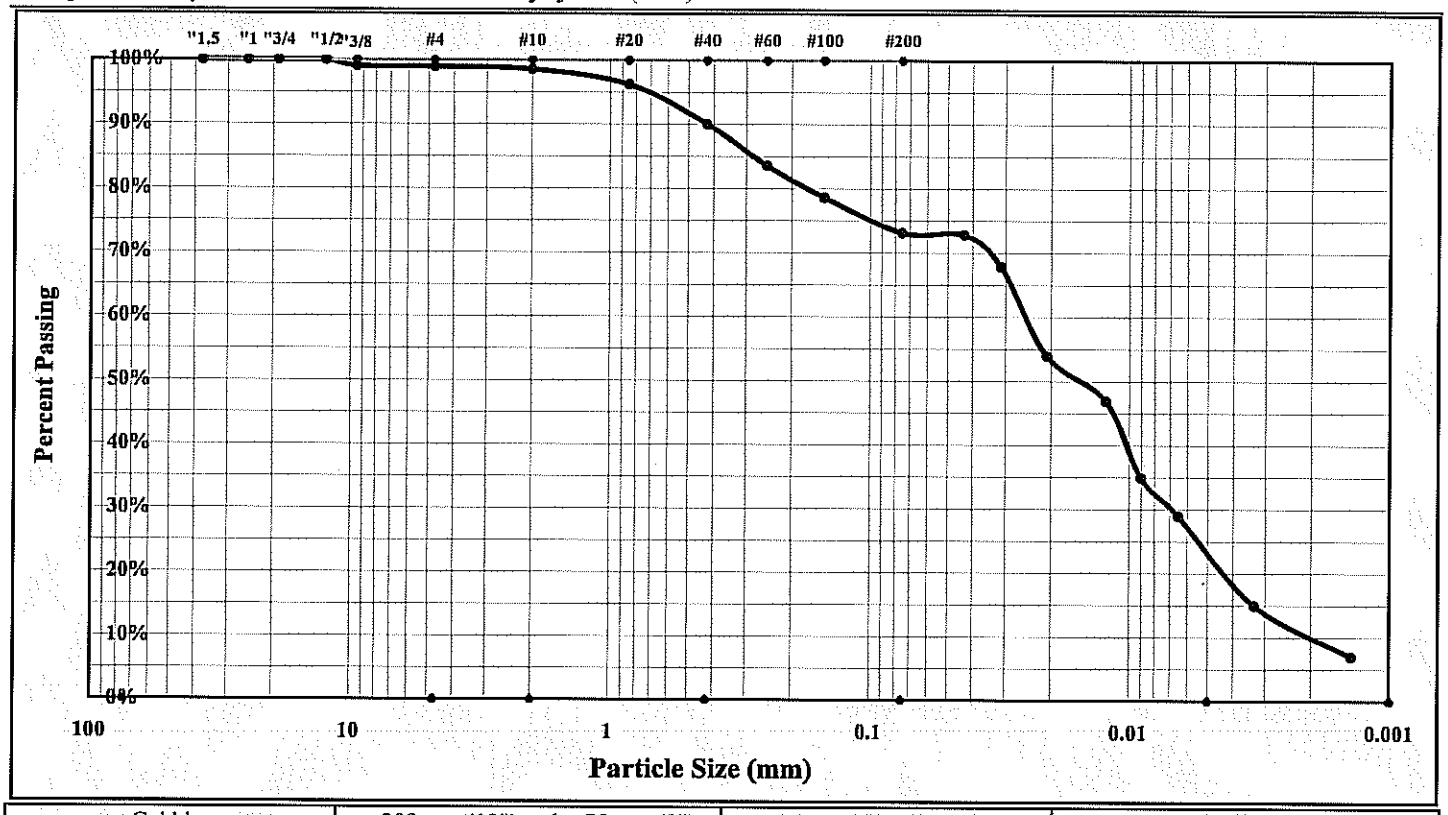
Particle Size Analysis of Soils

ASTM D422

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME Project #:	1356-06-825 Task 9	Report Date:	6/26/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/22-26/09
Client Name:	Duke Energy		
Address:			
Location:	Cell 1A E Middle	Sample #: PC-4	Sample Date: 6/19/09
	"protective cover"	Offset:	Elevation:
Sample Description:	Brown Clayey Silt (MH) with Fine to Medium Sand and Mica		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and >2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:		Gravel:	0.0%	Silt	50.1%
Silt & Clay (% Passing #200):	73.1%	Total Sand:	25.9%	Clay	23.0%
ent Relative Density (Assumed)	2.650	Moisture Content		Colloids	
Liquid Limit	57	Plastic Limit	43	Plastic Index	14
Coarse Sand:	0.4%	Medium Sand:	8.5%	Fine Sand:	16.9%

Description of Sand and Gravel: Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Apparatus B: Air Jet Dispersion — Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References / Comments / Deviations: AASTM D 4318, D 854, D 2487

Ken Daly
Technical Responsibility — *Signature* — *Position* — *Date*

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Form No. TR-D4318-T89-90 *Client code* *Client Test #* *state #*

Revision No. 0

Revision Date: 11/20/07

Liquid Limit, Plastic Limit, and Plastic Index

S&ME

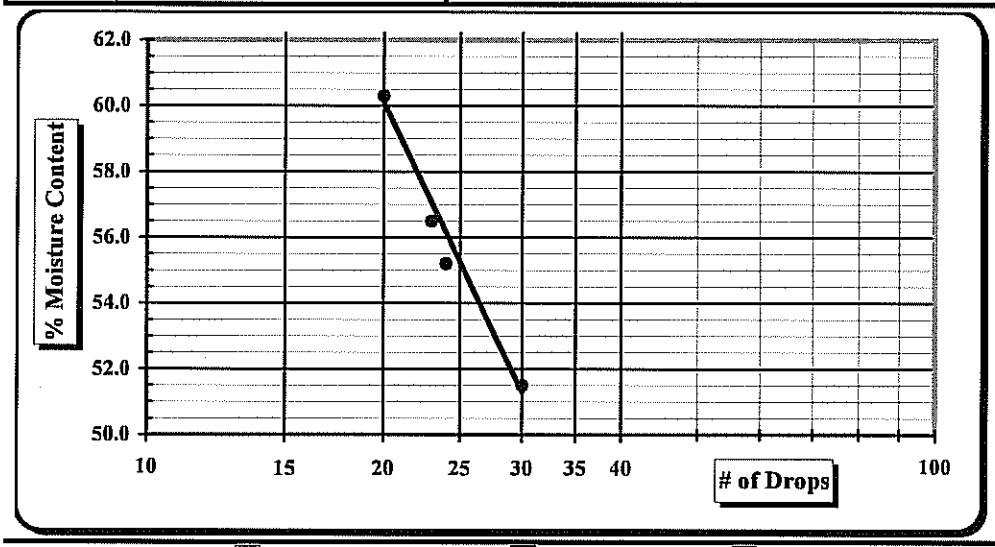
Another code *ASTM D 4318* ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐ ***Quality Assurance***

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Phase 9**	Report Date:	6/24/09
Project Name:	Allen Retired Ash Landfill Basin (RAB) Ash Landfill	Test Date(s)	6/22-24/09
Client Name:	Duke Energy		
Client Address:			
Location:	Middle of E. Berm @ top of	Sample #: PC-5	Sample Date: 6/19/09
Location:	slope "protective cover"	Offset:	Elevation:
Sample Description:	Tan Brown Fine to Medium Sandy Clayey Silt (MH) with Mica		

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)			Grooving tool		
LL Apparatus			Grooving tool		
Oven			Grooving tool		

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	5	XX	60	10			50	27	
A	Tare Weight	15.72	16.04	13.85	13.99			15.79	13.92	
B	Wet Soil Weight + A	26.46	26.86	24.38	23.64			22.37	20.15	
C	Dry Soil Weight + A	22.81	23.01	20.58	20.01			20.34	18.23	
D	Water Weight (B-C)	3.65	3.85	3.80	3.63			2.03	1.92	
E	Dry Soil Weight (C-A)	7.09	6.97	6.73	6.02			4.55	4.31	
F	% Moisture (D/E)*100	51.5%	55.2%	56.5%	60.3%			44.6%	44.5%	
N	# OF DROPS	30	24	23	20			*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							**44.6%**		



One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☐

Liquid Limit **55**

Plastic Limit **45**

Plastic Index 10

Group Symbol **MH**

Multipoint Method ☑

One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *Estimate the % Retained on the #40 Sieve:*

Notes / Deviations / References:

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Jennifer Olsen	6/24/2009	Ken Daly	
Technician Name	*Date*	*Technical Responsibility*	*Date*

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Form No. TR-D422-2
Revision No. 0
Revision Date: 02/20/08

Particle Size Analysis of Soils

ASTM D 422

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Task 9**	Report Date:	6/26/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/22-26/09
Client Name:	Duke Energy	Address:	
Location:	Middle of E berm @ top of slope "protective cover"	Sample #: PC-5	Sample Date: 6/19/09
		Offset:	Elevation:
Sample Description:	Tan Brown Fine to Medium Sandy Clayey Silt (MH) with Mica		

Pan #:	536	Beaker #:	PP		**Apparent Relative Density (Assumed)**		**2.650**				
Hydrometer Jar #:			8								
Pan Tare Weight (grams):			0.00		**Moisture Content**	Hygroscopic	Natural				
Total Sample Air Dried Wt. + tare wt. (grams):			223.76		Tare #	XY					
Weight of Total Sample Air Dried:			223.76	A	Tare Wt.	15.94					
Weight of Air Dried Hydrometer Sample (g):			50.00	B	Wet Wt. + A	26.06					
Total Sample Oven Dried:			221.57	C	Dry Wt. + A	25.96					
Hydrometer Sample Oven Dried (**W**):			49.51	D	Water Wt. (B-C)	0.10					
% Passing #10:			99.1%	E	Dry Wt. (C-A)	10.02					
Correction Factor a (Table 1):			1.00		% Moisture (100 x D/E)	1.00%					

Sieve	Retained Wt.	Percent Passing	
3.0"		Pan # (washed)	100.0%
1.5"			100.0%
1.0"			100.0%
3/4"		PO	100.0%
1/2"			100.0%
3/8"	0.0	Soil Mortar	100.0%
#4	0.6		99.7%
#10	2.1	**100.0%**	99.1%
#20	1.8	96.4%	95.5%
#40	6.1	87.7%	86.9%
#60	9.9	80.0%	79.3%
#100	12.6	74.5%	73.8%
#200	15.5	68.7%	68.1%

Description of Sand & Gravel Particles Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Stirring Apparatus: A ☐ B ☐ Dispersion Time: 1 min. Sodium Hexametaphosphate: 40 g./ Liter

Balance: ID No. Cal. Date: Hydrometer: *ID No. Cal. Date:*

Control Cylinder ☒ **Composite Correction** ☐ **Type: 151H** ☐ **152H** ☒

Time T (Min.)	Temp. (0.5 °C)	Hydrometer Reading	Corrections: Control Cylinder	Corrections: Composite Correction	Hydrometer R	Percent Passing: P(-#10) = (R x a / W) x 100	Percent Passing: P (total) = P x % Passing #10	Effective Depth L	Table 3 K	Diameter D = K x ((L/T)$^{1/2}$
1	21.0	38.5	4.5		34.00	68.7%	68.0%	10.7	0.01348	0.04413
2	21.0	35.5	4.5		31.00	62.6%	62.0%	11.2	0.01348	0.03192
5	21.0	31.0	4.5		26.50	53.5%	53.0%	11.9	0.01348	0.02084
15	21.0	24.0	4.5		19.50	39.4%	39.0%	13.1	0.01348	0.01260
30	21.0	19.0	4.5		14.50	29.3%	29.0%	13.9	0.01348	0.00918
60	21.0	15.0	4.5		10.50	21.2%	21.0%	14.6	0.01348	0.00664
250	21.0	10.5	4.5		6.00	12.1%	12.0%	15.3	0.01348	0.00334
1440	21.5	7.0	4.0		3.00	6.1%	6.0%	15.8	0.01340	0.00140

References / Comments / Deviations ASTM D 422, D 2487, D 4318

Jennifer Olsen	117926	Ken Daly		
Technician Name	*Certification #*	*Technical Responsibility*	*Position*	*Date*

Form No. TR-D422-3
Revision No. 0
Revision Date: 02/20/08

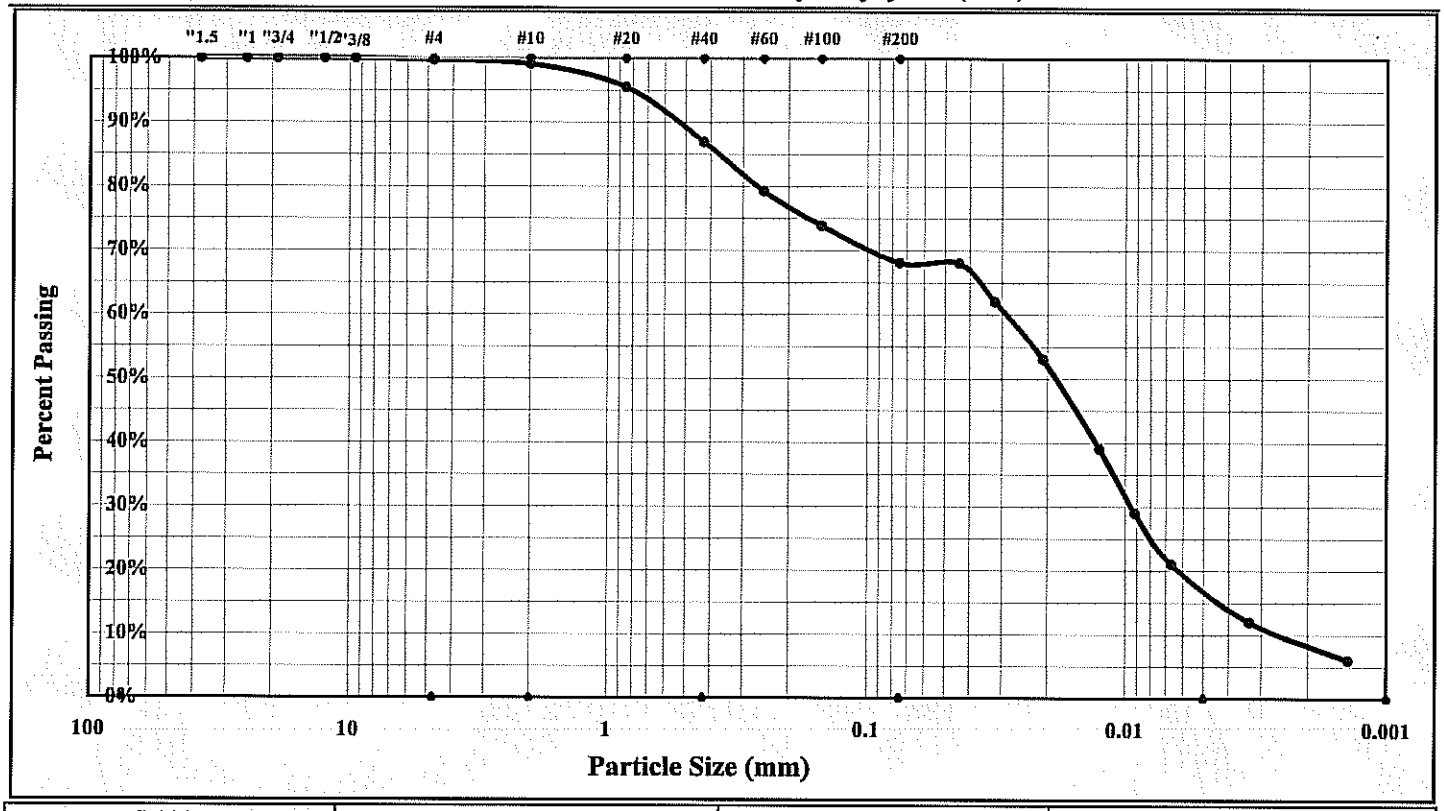
Particle Size Analysis of Soils

ASTM D422

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME Project #:	1356-06-825 Task 9	Report Date:	6/26/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/22-26/09
Client Name:	Duke Energy		
Address:			
Location:	Middle of E berm @ Sample #: PC-5	Sample Date:	6/19/09
	slope "protective Offset:	Elevation:	
Sample Description:	Tan Brown Fine to Medium Sandy Clayey Silt (MH) with Mica		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and >2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:		Gravel:	0.0%	Silt	51.1%
Silt & Clay (% Passing #200):	68.1%	Total Sand:	31.6%	Clay	17.0%
ent Relative Density (Assumed)	2.650	Moisture Content		Colloids	
Liquid Limit	55	Plastic Limit	45	Plastic Index	10
Coarse Sand:	0.6%	Medium Sand:	12.2%	Fine Sand:	18.8%

Description of Sand and Gravel: Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Apparatus B: Air Jet Dispersion — Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References / Comments / Deviations: AASTM D 4318, D 2487

Ken Daly
Technical Responsibility — *Signature* — *Position* — *Date*

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Form No. TR-D4318-T89-90 *Client code* *Client Test #* *state #*

Revision No. 0

Revision Date: 11/20/07

Liquid Limit, Plastic Limit, and Plastic Index

S&ME

Another code *ASTM D 4318* ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐ ***Quality Assurance***

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Phase 9**	Report Date:	6/26/09
Project Name:	Allen Retired Ash Landfill Basin (RAB) Ash Landfill	Test Date(s)	6/22-26/09
Client Name:	Duke Energy		
Client Address:			

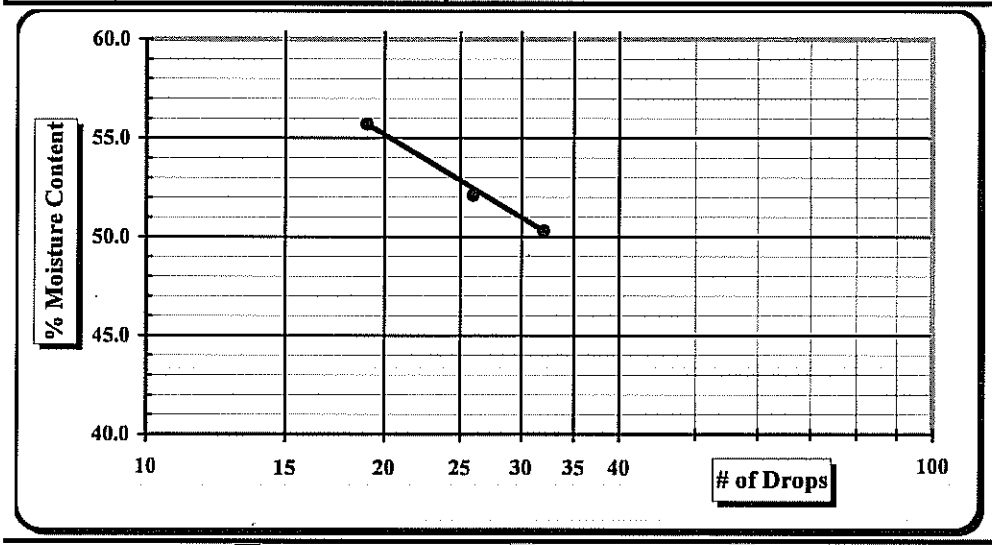
Boring #: Sample #: PC-6 Sample Date: 6/22/09

Location: Cell 1 Protective Cover Offset: Elevation: Bulk

Sample Description: Reddish Orange Micaceous Coarse to Fine to Medium Sandy Silt (ML)

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)			Grooving tool		
LL Apparatus			Grooving tool		
Oven			Grooving tool		

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	23	34	58				45	22	
A	Tare Weight	14.08	13.99	13.98				13.94	13.92	
B	Wet Soil Weight + A	22.95	24.30	23.99				20.21	20.03	
C	Dry Soil Weight + A	19.98	20.77	20.41				18.29	18.15	
D	Water Weight (B-C)	2.97	3.53	3.58				1.92	1.88	
E	Dry Soil Weight (C-A)	5.90	6.78	6.43				4.35	4.23	
F	% Moisture (D/E)*100	50.3%	52.1%	55.7%				44.1%	44.4%	
N	# OF DROPS	32	26	19				*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							**44.3%**		



One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☐

Liquid Limit **53**

Plastic Limit **44**

Plastic Index **9**

Group Symbol **ML**

Multipoint Method ☑

One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *Estimate the % Retained on the #40 Sieve:*

Notes / Deviations / References:

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Karen Warner — *Technician Name* — *Date*

Ken Daly — *Technical Responsibility* — *Date*

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Form No. TR-D422-2
Revision No. 0
Revision Date: 02/20/08

Particle Size Analysis of Soils

ASTM D 422

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

Project #:	**1356-06-825 Task 9**	Report Date:	6/26/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/22-26/09
Client Name:	Duke Energy	Address:	
Boring #:		Sample #: PC-6	Sample Date: 6/22/09
Location:	Cell 1 Protective Cover	Offset:	Elevation: Bulk
Sample Description:	Reddish Orange Micaceous Coarse to Fine to Medium Sandy Silt (ML)		

Pan #:		Beaker #:		**Apparent Relative Density (Assumed)**		**2.650**				
Hydrometer Jar #:										
Pan Tare Weight (grams):				**Moisture Content**	Hygroscopic	Natural				
Total Sample Air Dried Wt. + tare wt. (grams):	305.46			Tare #	35					
Weight of Total Sample Air Dried:	305.46		A	Tare Wt.	15.66					
Weight of Air Dried Hydrometer Sample (g):	50.04		B	Wet Wt. + A	26.34					
Total Sample Oven Dried:	293.79		C	Dry Wt. + A	25.92					
Hydrometer Sample Oven Dried (**W**):	48.07		D	Water Wt. (B-C)	0.42					
% Passing #10:	97.0%		E	Dry Wt. (C-A)	10.26					
Correction Factor a (Table 1):	1.00			% Moisture (100 x D/E)	4.09%					

Sieve	Retained Wt.	Percent Passing	
3.0"	0.0	Pan # (washed)	100.0%
1.5"	0.0		100.0%
1.0"	0.0		100.0%
3/4"	0.0		100.0%
1/2"	0.0		100.0%
3/8"	0.0	Soil Mortar	100.0%
#4	0.8		99.7%
#10	8.7	100.0%	97.0%
#20	5.9	87.7%	85.1%
#40	12.4	74.2%	72.0%
#60	16.7	65.2%	63.3%
#100	19.5	59.4%	57.6%
#200	23.0	52.2%	50.6%

Description of Sand & Gravel Particles Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Stirring Apparatus: A ☐ B ☐ Dispersion Time: 1 min. Sodium Hexametaphosphate: 40 g./ Liter

Balance: *ID No.* *Cal. Date:* Hydrometer: *ID No.* *Cal. Date:*

Control Cylinder ☒ **Composite Correction** ☐ **Type: 151H** ☐ **152H** ☒

Time T (Min.)	Temp. (0.5 °C)	Hydrometer Reading	Corrections: Control Cylinder	Corrections: Composite Correction	Hydrometer R	Percent Passing: P(-#10) = (R x a / W) x 100	Percent Passing: P (total) = P x % Passing #10	Effective Depth L	Table 3 K	Diameter D = K x ((L/T)^1/2
1	21.0	27.0	5.0		22.00	45.8%	44.4%	12.7	0.01348	0.04801
2	21.0	24.0	5.0		19.00	39.5%	38.4%	13.2	0.01348	0.03460
5	21.0	21.0	5.0		16.00	33.3%	32.3%	13.7	0.01348	0.02229
15	21.0	15.5	5.0		10.50	21.8%	21.2%	14.6	0.01348	0.01329
30	21.0	13.0	5.0		8.00	16.6%	16.1%	15.0	0.01348	0.00953
60	21.0	11.0	5.0		6.00	12.5%	12.1%	15.3	0.01348	0.00681
250	21.0	8.0	5.0		3.00	6.2%	6.1%	15.8	0.01348	0.00339
1440	22.0	6.0	4.5		1.50	3.1%	3.0%	16.0	0.01332	0.00141

References / Comments / Deviations ASTM D 422, D 2487, D 4318

Karen Warner	117900	Ken Daly	Project Engineer	
Technician Name	*Certification #*	*Technical Responsibility*	*Position*	*Date*

Form No. TR-D422-3
Revision No. 0
Revision Date: 02/20/08

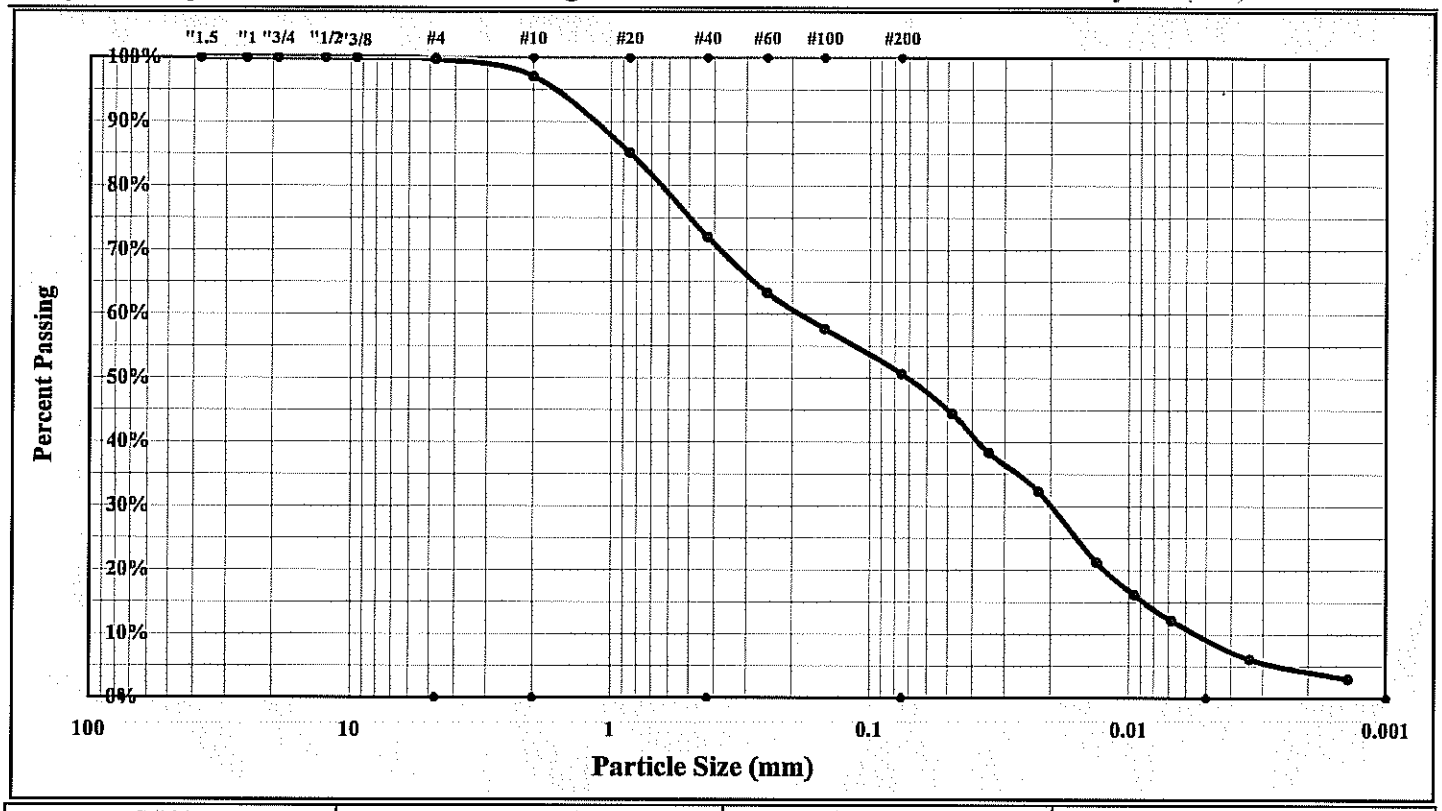
Particle Size Analysis of Soils

ASTM D422

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

S&ME Project #:	1356-06-825 Task 9	Report Date:	6/26/09
Project Name:	Allen Steam Station RAB Ash Landfill	Test Date(s):	6/22-26/09
Client Name:	Duke Energy		
Address:			
Boring #:	Sample #: PC-6	Sample Date:	6/22/09
Location:	Cell 1 Protective Offset:	Elevation:	Bulk
Sample Description:	Reddish Orange Micaceous Coarse to Fine to Medium Sandy Silt (ML)		



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and >2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size:	#4	Gravel:	0.0%	Silt	41.6%
Silt & Clay (% Passing #200):	50.6%	Total Sand:	49.1%	Clay	9.0%
ent Relative Density (Assumed)	2.650	Moisture Content		Colloids	3.0%
Liquid Limit	53	Plastic Limit	44	Plastic Index	9
Coarse Sand:	2.7%	Medium Sand:	25.0%	Fine Sand:	21.4%

Description of Sand and Gravel: Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

Apparatus B: Air Jet Dispersion — Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References / Comments / Deviations: ASTM D 4318, D 854, D 2487

Ken Daly		Project Engineer	
Technical Responsibility	*Signature*	*Position*	*Date*

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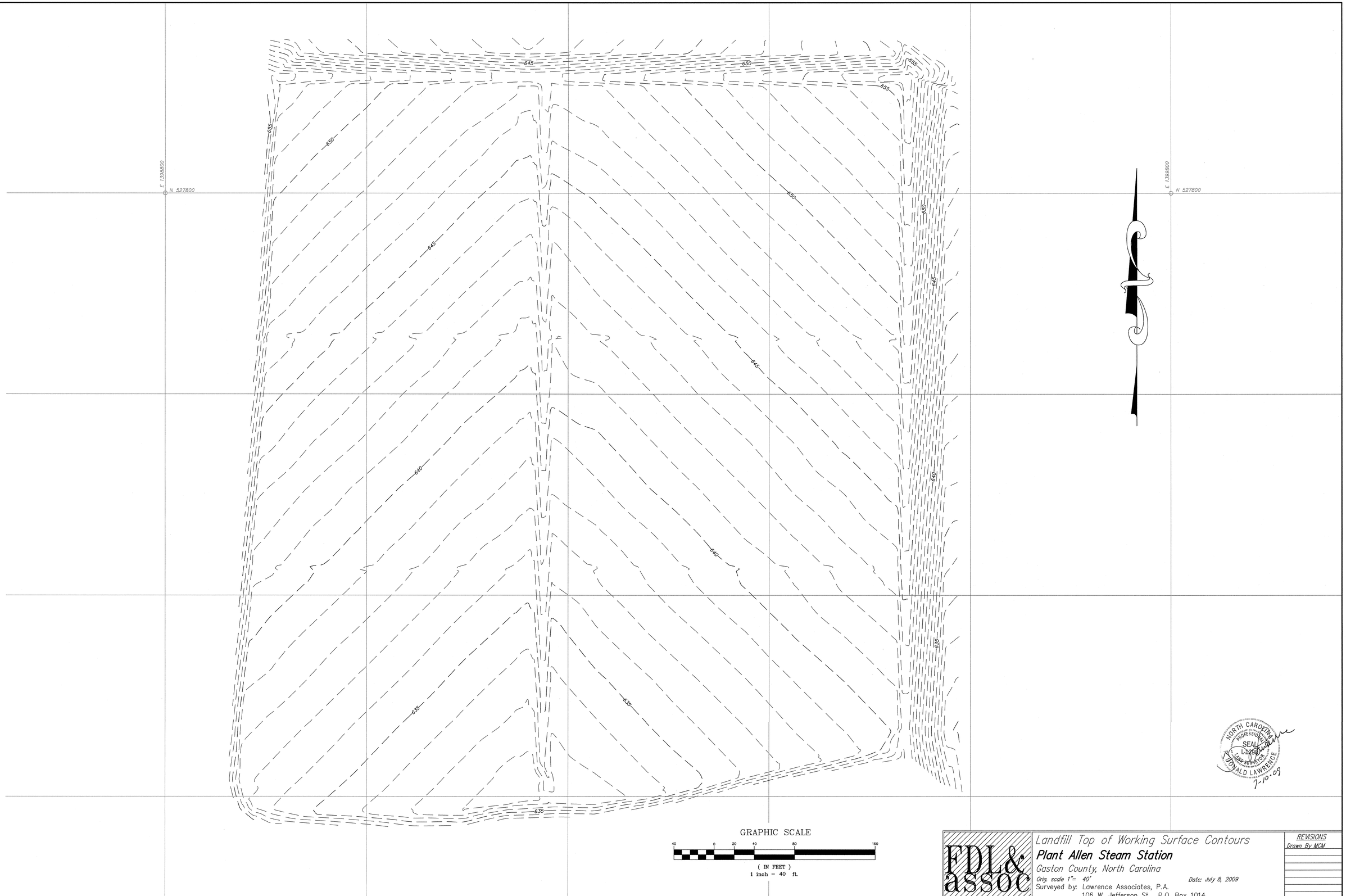
Protective Cover As-Built Drawing



FDL & assoc

Landfill Top of Working Surface Contours

Plant Allen Steam Station

Gaston County, North Carolina

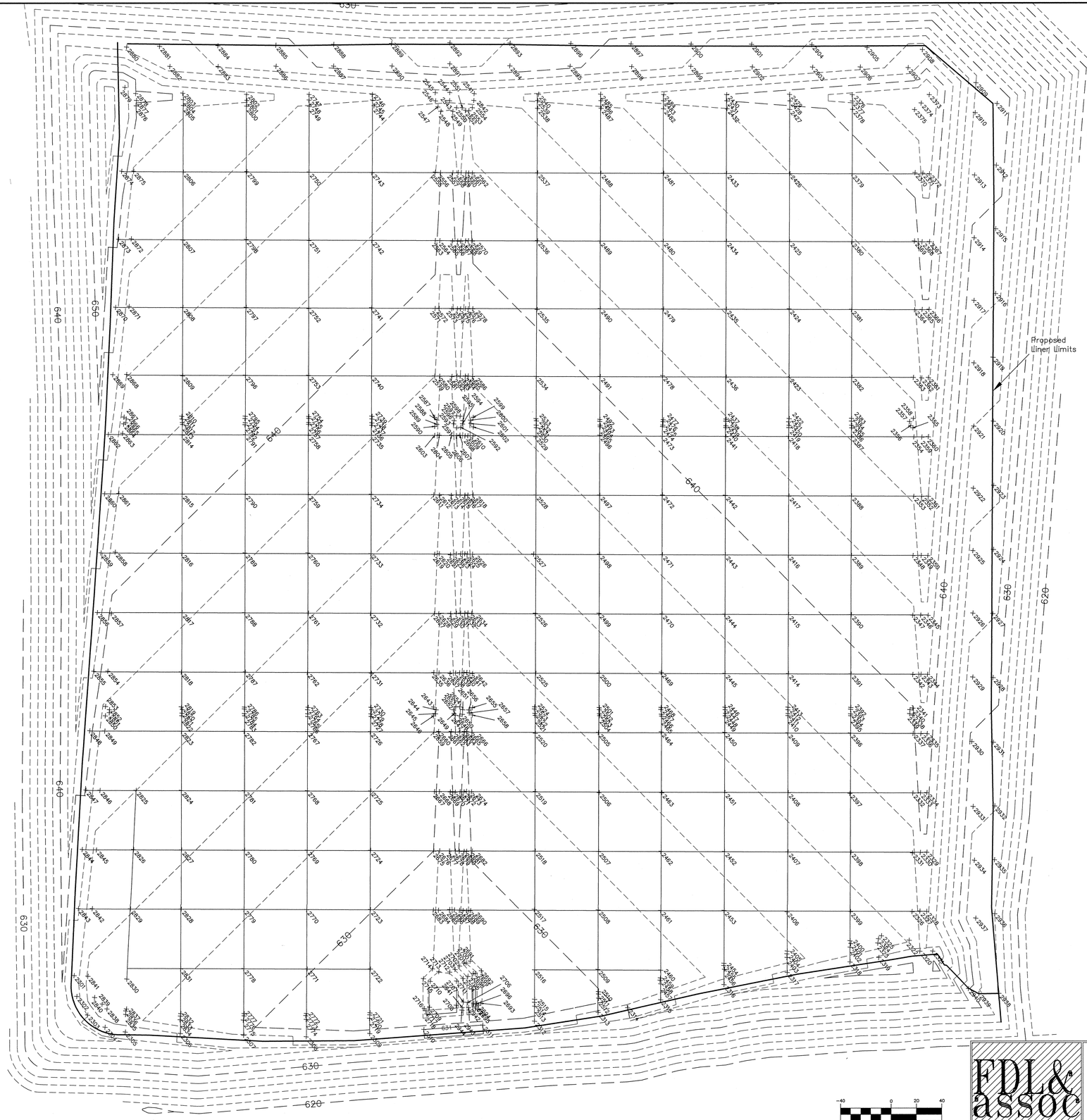
Orig. scale 1"= 40' Date: July 8, 2009

Surveyed by: Lawrence Associates, P.A.
106 W. Jefferson St. P.O. Box 1014
Monroe, North Carolina 28112 (704) 289-1013

REVISIONS
Drawn By MCM

Job No. 1640 Earnhardt Drawing file: AllenWorkingsrfc.dwg Drawing no. 09/50A

Protective Cover Thickness Verification



Note:
Topography shown is Proposed Sub-Grade Contours.

NORTH CAROLINA PROFESSIONAL SEAL L-1290 LAND SURVEYOR RONALD LAWRENCE
7-10-09

Top of Clay

Sheet 1 of 3

(IN FEET)
1 inch = 40 ft.

FDL & assoc

Landfill As-Built

Plant Allen Steam Station

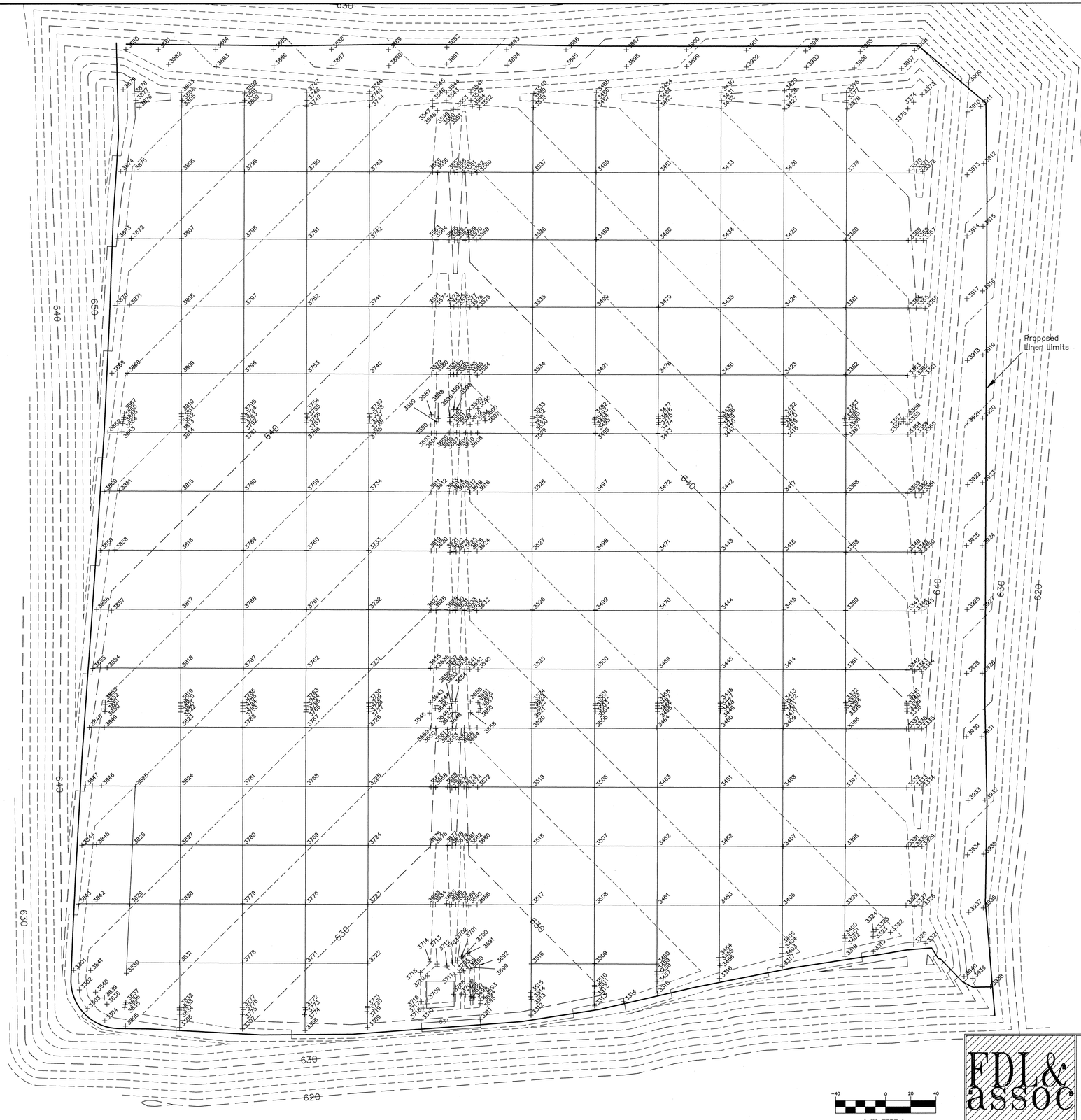
Gaston County, North Carolina

Orig. scale 1"= 40' Date: 7/06/09

Surveyed by: Lawrence Associates, P.A.
106 W. Jefferson St. P.O. Box 1014
Monroe, North Carolina 28112 (704) 289-1013

REVISIONS
Drawn By JLH

Job No. 1640 Drawing file: alnverify.dwg Drawing no. 09/076



Note:
Topography shown is Proposed Sub-Grade Contours.

(IN FEET)
1 inch = 40 ft.

NORTH CAROLINA PROFESSIONAL SEAL L-1290 LAND SURVEYOR DONALD LAWRENCE
7-10-09

Top of Working Surface

Sheet 2 of 3

FDL & assoc

Landfill As-Built

Plant Allen Steam Station

Gaston County, North Carolina

Orig. scale 1"= 40' Date: 7/06/09

Surveyed by: Lawrence Associates, P.A.
106 W. Jefferson St. P.O. Box 1014
Monroe, North Carolina 28112 (704) 289-1013

REVISIONS
Drawn By JLH

Job No. 1640 Drawing file: alnverify.dwg Drawing no. 09/076

Proposed				Subgrade			Top of Clay			Top of Clay - Subgrade	Top of Cover - Top Clay			
Point #	Northing	Easting	Elevation	Point #	Elevation	Desc.	Point #	Elevation	Desc.					
301	527217.54	1398861.90	637.12	1301	637.02	SUB	2301	638.62	TCY	1.60	3301	641.54	TCV	2.92
302	527200.91	1398864.19	636.56	1302	636.46	SUB	2302	638.16	TCY	1.70	3302	641.13	TCV	2.97
303	527186.51	1398872.81	636.00	1303	635.99	SUB	2303	637.50	TCY	1.51	3303	640.52	TCV	3.02
304	527176.63	1398886.37	635.45	1304	635.43	SUB	2304	637.04	TCY	1.61	3304	640.08	TCV	3.04
305	527172.86	1398902.73	634.89	1305	634.80	SUB	2305	636.42	TCY	1.62	3305	639.24	TCV	2.82
306	527171.73	1398946.39	633.94	1306	633.90	SUB	2306	635.52	TCY	1.62	3306	638.42	TCV	2.90
307	527170.44	1398996.39	633.22	1307	632.80	SUB	2307	634.74	TCY	1.94	3307	637.60	TCV	2.86
308	527169.15	1399046.38	631.90	1308	631.81	SUB	2308	633.44	TCY	1.63	3308	636.40	TCV	2.96
309	527171.63	1399096.39	631.42	1309	631.06	SUB	2309	633.00	TCY	1.94	3309	635.87	TCV	2.87
310	527174.87	1399139.10	631.00	1310	630.61	SUB	2310	632.50	TCY	1.89	3310	637.29	TCV	4.79
311	527178.44	1399186.09	631.00	1311	630.87	SUB	2311	632.52	TCY	1.65	3311	637.41	TCV	4.89
312	527181.54	1399226.85	631.74	1312	631.30	SUB	2312	633.24	TCY	1.94	3312	636.37	TCV	3.13
313	527188.75	1399276.92	632.61	1313	631.93	SUB	2313	634.12	TCY	2.19	3313	637.24	TCV	3.12
314	527192.18	1399300.70	633.36	1314	632.47	SUB	2314	634.86	TCY	2.39	3314	637.86	TCV	3.00
315	527198.79	1399327.00	634.02	1315	633.14	SUB	2315	635.52	TCY	2.38	3315	638.41	TCV	2.89
316	527211.08	1399377.08	635.33	1316	634.97	SUB	2316	636.85	TCY	1.88	3316	639.81	TCV	2.96
317	527220.43	1399427.16	636.60	1317	635.70	SUB	2317	638.18	TCY	2.48	3317	641.07	TCV	2.89
318	527228.37	1399477.23	637.85	1318	637.35	SUB	2318	639.44	TCY	2.09	3318	642.40	TCV	2.96
319	527231.99	1399500.00	638.43	1319	637.90	SUB	2319	639.95	TCY	2.05	3319	642.79	TCV	2.84
320	527237.15	1399532.49	638.50	1320	638.49	SUB	2320	640.10	TCY	1.61	3320	643.31	TCV	3.21
321	527237.10	1399542.85	638.50	1321	638.40	SUB	2321	640.03	TCY	1.63	3321	642.16	TCV	2.13
322	527245.04	1399524.80	636.10	1322	636.05	SUB	2322	637.68	TCY	1.63	3322	640.13	TCV	2.45
323	527243.79	1399500.00	634.62	1323	634.34	SUB	2323	636.19	TCY	1.85	3323	639.39	TCV	3.20
324	527246.82	1399500.00	634.62	1324	634.50	SUB	2324	636.18	TCY	1.68	3324	639.26	TCV	3.08
325	527249.20	1399502.20	635.67	1325	635.28	SUB	2325	637.17	TCY	1.89	3325	639.40	TCV	2.23
326	527268.51	1399526.62	636.60	1326	636.56	SUB	2326	638.11	TCY	1.55	3326	640.16	TCV	2.05
327	527268.49	1399532.62	638.64	1327	638.57	SUB	2327	640.19	TCY	1.62	3327	642.35	TCV	2.16
328	527268.48	1399537.62	638.64	1328	638.55	SUB	2328	640.20	TCY	1.65	3328	642.25	TCV	2.05
329	527315.57	1399537.81	639.68	1329	639.58	SUB	2329	641.26	TCY	1.68	3329	643.26	TCV	2.00
330	527315.59	1399532.81	639.68	1330	639.58	SUB	2330	641.19	TCY	1.61	3330	643.23	TCV	2.04
331	527315.61	1399526.82	637.60	1331	637.53	SUB	2331	639.14	TCY	1.61	3331	641.17	TCV	2.03
332	527362.70	1399527.01	638.60	1332	638.59	SUB	2332	640.12	TCY	1.53	3332	642.18	TCV	2.06
333	527362.68	1399533.01	640.72	1333	640.62	SUB	2333	642.22	TCY	1.60	3333	644.24	TCV	2.02
334	527362.67	1399538.01	640.72	1334	640.64	SUB	2334	642.23	TCY	1.59	3334	644.27	TCV	2.04
335	527409.76	1399538.20	641.76	1335	641.66	SUB	2335	643.28	TCY	1.62	3335	645.30	TCV	2.02
336	527409.78	1399533.20	641.76	1336	641.69	SUB	2336	643.31	TCY	1.62	3336	645.32	TCV	2.01
337	527409.80	1399527.21	639.60	1337	639.51	SUB	2337	641.11	TCY	1.60	3337	643.24	TCV	2.13
338	527423.50	1399527.26	639.84	1338	639.77	SUB	2338	641.37	TCY	1.60	3338	643.55	TCV	2.18
339	527425.50	1399524.27	638.84	1339	638.82	SUB	2339	640.43	TCY	1.61	3339	643.58	TCV	3.15
340	527428.50	1399524.29	638.84	1340	638.80	SUB	2340	640.44	TCY	1.64	3340	643.59	TCV	3.15
341	527430.82	1399527.30	640.00	1341	639.94	SUB	2341	641.50	TCY	1.56	3341	643.64	TCV	2.14
342	527456.89	1399527.40	640.64	1342	640.64	SUB	2342	642.17	TCY	1.53	3342	644.23	TCV	2.06
343	527456.87	1399533.40	642.57	1343	642.55	SUB	2343	644.17	TCY	1.62	3343	646.23	TCV	2.06
344	527456.86	1399538.40	642.57	1344	642.52	SUB	2344	644.16	TCY	1.64	3344	646.22	TCV	2.06
345	527503.95	1399538.59	643.74	1345	643.66	SUB	2345	645.27	TCY	1.61	3345	647.31	TCV	2.04
346	527503.97	1399533.59	643.74	1346	643.67	SUB	2346	645.37	TCY	1.70	3346	647.39	TCV	2.02
347	527503.99	1399527.60	641.81	1347	641.80	SUB	2347	643.40	TCY	1.60	3347	645.40	TCV	2.00
348	527551.08	1399527.79	642.97	1348	642.86	SUB	2348	644.56	TCY	1.70	3348	646.58	TCV	2.02
349	527551.06	1399533.79	644.92	1349	644.82	SUB	2349	646.68	TCY	1.86	3349	648.69	TCV	2.01
350	527551.05	1399538.79	644.92	1350	644.85	SUB	2350	646.75	TCY	1.90	3350	648.78	TCV	2.03
351	527598.14	1399538.98	646.09	1351	646.00	SUB	2351	647.59	TCY	1.59	3351	649.66	TCV	2.07
352	527598.16	1399533.98	646.09	1352	646.01	SUB	2352	647.61	TCY	1.60	3352	649.66	TCV	2.05
353	527598.17	1399527.99	644.14	1353	644.06	SUB	2353	645.71	TCY	1.65	3353	647.71	TCV	2.00
354	527645.27	1399528.18	645.30	1354	645.21	SUB	2354	646.90	TCY	1.69	3354	649.05	TCV	2.15
355	527652.51	1399528.13	645.47	1355	645.40	SUB	2355	647.01	TCY	1.61	3355	649.25	TCV	2.24
356	527654.50	1399525.22	644.47	1356	644.46	SUB	2356	646.12	TCY	1.66	3356	648.75	TCV	2.63
357	527657.50	1399525.23	644.47	1357	644.44	SUB	2357	645.98	TCY	1.54	3357	648.83	TCV	2.85
358	527659.86	1399528.24	645.65	1358	645.63	SUB	2358	647.15	TCY	1.52	3358	649.15	TCV	2.00
359	527645.25	1399534.18	647.27	1359	647.19	SUB	2359	648.86	TCY	1.67	3359	650.88	TCV	2.02
360	527645.24	1399539.18	647.27	1360	647.20	SUB	2360	648.91	TCY	1.71	3360	650.91	TCV	2.00
361	527692.33	1399539.37	648.45	1361	648.35	SUB	2361	650.00	TCY	1.65	3361	652.03	TCV	2.03
362	527692.35	1399534.37	648.45	1362	648.37	SUB	2362	650.08	TCY	1.71	3362	652.13	TCV	2.05
363	527692.36	1399528.38	646.47	1363	646.37	SUB	2363	648.00	TCY	1.63	3363	650.05	TCV	2.05
364	527746.18	1399528.60	647.79	1364	647.73	SUB	2364	649.38	TCY	1.65	3364	651.41	TCV	2.03
365	527746.16	1399534.60	649.79	1365	649.69	SUB	2365	651.41	TCY	1.72	3365	653.42	TCV	2.01
366	527746.14	1399539.60	649.79	1366	649.70	SUB	2366	651.40	TCY	1.70	3366	653.49	TCV	2.09
367	527799.95	1399539.82	651.13	1367	651.06	SUB	2367	652.77	TCY	1.71	3367	654.79	TCV	2.02
368	527799.97	1399534.82	651.13	1368	651.06	SUB	2368	652.80	TCY	1.74	3368	654.83	TCV	2.03
369	527799.99	1399528.82	649.11	1369	649.06	SUB	2369	650.69	TCY	1.63	3369	652.80	TCV	2.11
370	527853.80	1399529.04	650.43	1370	650.33	SUB	2370	651.97	TCY	1.64	3370	654.08	TCV	2.11
371	527853.78	1399535.04	652.48	1371	652.39	SUB	2371	654.00	TCY	1.61	3371	656.10	TCV	2.10
372	527853.77	1399540.04	652.48	1372	652.41	SUB	2372	654.01	TCY	1.60	3372	656.14	TCV	2.13
373	527916.74	1399540.30	653.93	1373	653.84	SUB	2373	655.49	TCY	1.65	3373	657.55	TCV	2.06
374	527911.75	1399535.28	653.93	1374	653.83	SUB	2374	655.58	TCY	1.75	3374	657.69	TCV	2.11
375	527905.48	1399529.26	651.75	1375	651.74	SUB	2375	653.33	TCY	1.59	3375	655.36	TCV	2.03
376	527916.82	1399479.24	652.48	1376	652.43	SUB	2376	654.14	TCY	1.71	3376	656.19	TCV	2.05
377	527911.82	1399479.23	652.48	1377	652.43	SUB	2377	654.09	TCY	1.66	3377	656.10	TCV	2.01
378	527905.72	1399479.21	650.52	1378	650.44	SUB	2378	652.05	TCY	1.61	3378	654.07	TCV	2.02
379	527853.94	1399479.06	649.19	1379	649.12	SUB	2379	650.77	TCY	1.65	3379	655.77	TCV	5.00
380	527800.13	1399478.90	647.87	1380	647.80	SUB	2380	649.37	TCY	1.57	3380	651.47	TCV	2.10
381	527746.32	1399478.74	646.55	1381	646.45	SUB	2381	648.12	TCY	1.67	3381	650.12	TCV	2.00
382	527692.51	1399478.59	645.23	1382	645.14	SUB	2382	646.79	TCY	1.65	3382	648.82	TCV	2.03
383	527659.86	1399478.49	644.42	1383	644.32	SUB	2383	645.92	TCY	1.60	3383	647.92	TCV	2.00
384	527657.50	1399478.48	643.24	1384	643.17	SUB	2384	644.78	TCY	1.61	3384	647.81	TCV	3.03
385	527654.50	1399478.47	643.24	1385	643.20	SUB	2385	644.77	TCY	1.57	3385	647.70	TCV	2.93
386	527652.50	1399478.47	644.24	1386	644.21	SUB	2386	645.74	TCY	1.53	3386	647.76	TCV	2.02
387	527645.41	1399478.45	644.07	1387	644.07	SUB	2387	645.59	TCY	1.52	3387	647.64	TCV	2.05
388	527598.32	1399478.31	642.90	1388	642.80	SUB	2388	644.45	TCY	1.65	3388	646.49	TCV	2.04
389	527551.23	1399478.17	641.74	1389	641.64	SUB	2389	643.25	TCY	1.61	3389	645.33	TCV	2.08
390	527504.13	1399478.03	640.57	1390	640.55	SUB	2390	642.10	TCY	1.55	3390	644.16	TCV	2.06
391	527457.04	1399477.90	639.55	1391	639.47	SUB	2391	641.06	TCY	1.59	3391	643.21	TCV	2.15
392	527430.82	1399477.82	638.98	1392	638.88	SUB	2392	640.49	TCY	1.61	3392	642.55	TCV	2.06
393	527428.50	1399477.81	637.82	1393	637.60	SUB	2393	639.42	TCY	1.82	3393	642.37	TCV	2.95
394	527425.50	1399477.80	637.82	1394	637.58	SUB	2394	639.40	TCY	1.82	3394	642.36	TCV	2.96
395	527423.50	1399477.80	638.82	1395	638.65	SUB	2395	640.32	TCY	1.67	3395	642.42	TCV	2.10
396	527409.94	1399477.76	638.55	1396	638.53	SUB	2396	640.08	TCY	1.55	3396	642.26	TCV	2.18
397	527362.85	1399477.62	637.55	1397	637.47	SUB	2397	639.13	TCY	1.66	3397	641.13	TCV	2.00
398	527315.75	1399477.48	636.55	1398	636.49	SUB	2398	638.06	TCY	1.57	3398	640.10	TCV	2.04
399	527268.66	1399477.34	635.55	1399	635.45	SUB	2399	637.11	TCY	1.66	3399	639.13	TCV	2.02
400	527245.18	1399477.28	635.05	1400	634.62	SUB	2400	636.58	TCY	1.96	3400	638.61	TCV	2.03
401	527243.15	1399477.27	634.04	1401	633.72	SUB	2401	635.64	TCY	1.92	3401	638.61	TCV	2.97
402	527240.11	1399477.26	634.04	1402	634.02	SUB	2402	635.64	TCY	1.62	3402	638.63	TCV	2.99
403	527232.01	1399427.19	632.81	1403	632.73	SUB	2403	634.39	TCY	1.66	3403	637.41	TCV	3.02
404	527235.07	1399427.20	632.81	1404	632.59	SUB	2404	634.40	TCY	1.81	3404	637.40	TCV	3.00
405	527237.10	1399427.20	633.81	1405	633.69	SUB	2405	635.32	TCY	1.63	3405	637.49	TCV	2.17
406	527268.80	1399427.30	634.49	1406	634.43	SUB	2406	636.09	TCY	1.66	3406	638.12	TCV	2.03
407	527315.90	1399427.43	635.49	1407	635.42	SUB	2407	636.99	TCY	1.57	3407	639.10	TCV	2.11
408	527362.99	1399427.57	636.49	1408	636.49	SUB	2408	638.02	TCY	1.53	3408	640.16	TCV	2.14
409	527410.09	1399427.71	637.49	1409	637.40	SUB	2409	638.99	TCY	1.59	3409	641.06	TCV	2.07
410	527423.50	1399427.75	637.76	1410	637.66	SUB	2410	639.26	TCY	1.60	3410	641.27	TCV	2.01
411	527425.50	1399427.76	636.76	1411	636.69	SUB	2411	638.29	TCY	1.60	3411	641.18	TCV	2.89
412	527428.50	1399427.76	636.76	1412	636.71	SUB	2412	638.36	TCY	1.65	3412	641.21	TCV	2.85
413	527430.82	1399427.77	637.92	1413	637.83	SUB	2413	639.43	TCY	1.60	3413	641.44	TCV	2.01
414	527457.18	1399427.85	638.49	1414	638.46	SUB	2414	640.00	TCY	1.54	3414	642.07	TCV	2.07
415	527504.28	1399427.99	639.49	1415	639.39	SUB	2415	640.99	TCY	1.60	3415	643.18	TCV	2.19
416	527551.37	1399428.12	640.50	1416	640.42	SUB	2416	642.00	TCY	1.58	3416	644.08	TCV	2.08
417	527598.47	1399428.26	641.67	1417	641.58	SUB	2417	643.17	TCY	1.59	3417	645.21	TCV	2.04
418	527645.56	1399428.40	642.83	1418	642.83	SUB	2418	644.35	TCY	1.52	3418	646.46	TCV	2.11
419	527652.50	1399428.42	643.00	1419	643.00	SUB	2419	644.54	TCY	1.54	3419	646.54	TCV	2.00
420	527654.50	1399428.43	642.00	1420	641.98	SUB	2420	643.52	TCY	1.54	3420	646.45	TCV	2.93
421	527657.50	1399428.43	642.00	1421	641.94	SUB	2421	643.53	TCY	1.59	3421	646.56	TCV	3.03
422	527659.86	1399428.44	643.18	1422	643.18	SUB	2422	644.73	TCY	1.55	3422	646.74	TCV	2.01
423	527692.66	1399428.54	644.00	1423	643.96	SUB	2423	645.58	TCY	1.62	3423	647.62	TCV	2.04
424	527746.47	1399428.70	645.33	1424	645.28	SUB	2424	646.88	TCY	1.60	3424	648.91	TCV	2.03
425	527800.28	1399428.85	646.66	1425	646.57	SUB	2425	648.19	TCY	1.62	3425	650.21	TCV	2.02
426	527854.09	1399429.01	647.99	1426	647.92	SUB	2426	649.56	TCY	1.64	3426	651.64	TCV	2.08
427	527905.95	1399429.16	649.28	1427	649.28	SUB	2427	650.80	TCY	1.52	3427	652.87	TCV	2.07
428	527911.88	1399429.18	651.24	1428	651.20	SUB	2428	652.83	TCY	1.63	3428	654.90	TCV	2.07
429	527916.88	1399429.19	651.24	1429	651.18	SUB	2429	652.74	TCY	1.56	3429	654.76	TCV	2.02
430	527916.94	1399379.15	650.00	1430	649.93	SUB	2430	651.50	TCY	1.57	3430	653.63	TCV	2.13
431	527911.94	1399379.13	650.00	1431	649.95	SUB	2431	651.53	TCY	1.58	3431	653.65	TCV	2.12
432	527906.19	1399379.11	648.04	1432	648.01	SUB	2432	649.60	TCY	1.59	3432	651.65	TCV	2.05
433	527854.24	1399378.96	646.75	1433	646.73	SUB	2433	648.27	TCY	1.54	3433	650.41	TCV	2.14
434	527800.43	1399378.81	645.42	1434	645.37	SUB	2434	646.92	TCY	1.55	3434	649.07	TCV	2.15
435	527746.61	1399378.65	644.09	1435	644.07	SUB	2435	645.61	TCY	1.54	3435	647.75	TCV	2.14
436	527692.76	1399378.49	642.76	1436	642.69	SUB	2436	644.29	TCY	1.60	3436	646.32	TCV	2.03
437	527659.86	1399378.39	641.94	1437	641.92	SUB	2437	643.46	TCY	1.54	3437	645.46	TCV	2.00
438	527657.50	1399378.39	640.76	1438	640.71	SUB	2438	642.35	TCY	1.64	3438	645.33	TCV	2.98
439	527654.50	1399378.38	640.76	1439	640.75	SUB	2439	642.33	TCY	1.58	3439	645.23	TCV	2.90
440	527652.50	1399378.37	641.76	1440	641.71	SUB	2440	643.28	TCY	1.57	3440	645.30	TCV	2.02
441	527645.71	1399378.35	641.59	1441	641.51	SUB	2441	643.10	TCY	1.59	3441	645.16	TCV	2.06
442	527598.61	1399378.21	640.43	1442	640.33	SUB	2442	641.93	TCY	1.60	3442	644.07	TCV	2.14
443	527551.52	1399378.08	639.38	1443	639.30	SUB	2443	640.88	TCY	1.58	3443	642.93	TCV	2.05
444	527504.42	1399377.94	638.41	1444	638.33	SUB	2444	639.91	TCY	1.58	3444	641.99	TCV	2.08
445	527457.33	1399377.80	637.42	1445	637.32	SUB	2445	638.94	TCY	1.62	3445	641.09	TCV	2.15
446	527430.82	1399377.72	636.85	1446	636.77	SUB	2446	638.37	TCY	1.60	3446	640.39	TCV	2.02
447	527428.50	1399377.72	635.69	1447	635.52	SUB	2447	637.29	TCY	1.77	3447	640.16	TCV	2.87
448	527425.50	1399377.71	635.69	1448	635.47	SUB	2448	637.24	TCY	1.77	3448	640.16	TCV	2.92
449	527423.50	1399377.70	636.69	1449	636.45	SUB	2449	638.20	TCY	1.75	3449	640.22	TCV	2.02
450	527410.23	1399377.66	636.42	1450	636.42	SUB	2450	637.98	TCY	1.56	3450	640.12	TCV	2.14
451	527363.14	1399377.53	635.42	1451	635.41	SUB	2451	636.92	TCY	1.51	3451	639.01	TCV	2.09
452	527316.04	1399377.39	634.42	1452	634.41	SUB	2452	635.93	TCY	1.52	3452	638.00	TCV	2.07
453	527268.95	1399377.25	633.42	1453	633.41	SUB	2453	634.95	TCY	1.54	3453	637.02	TCV	2.07
454	527227.42	1399377.13	632.55	1454	632.54	SUB	2454	634.05	TCY	1.51	3454	636.17	TCV	2.12
455	527225.37	1399377.12	631.55	1455	631.13	SUB	2455	633.14	TCY	2.01	3455	636.17	TCV	3.03
456	527222.29	1399377.11	631.55	1456	631.20	SUB	2456	633.14	TCY	1.94	3456	636.21	TCV	3.07
457	527211.01	1399327.03	630.24	1457	629.93	SUB	2457	631.82	TCY	1.89	3457	634.95	TCV	3.13
458	527214.05	1399327.04	630.24	1458	629.68	SUB	2458	631.83	TCY	2.15	3458	634.80	TCV	2.97
459	527216.08	1399327.05	631.24	1459	630.98	SUB	2459	632.74	TCY	1.76	3459	634.82	TCV	2.08
460	527222.00	1399327.06	631.37	1460	631.28	SUB	2460	632.87	TCY	1.59	3460	634.89	TCV	2.02
461	527269.10	1399327.20	632.36	1461	632.26	SUB	2461	633.89	TCY	1.63	3461	635.96	TCV	2.07

Proposed				Subgrade			Top of Clay			Top of Clay - Subgrade	Top of Cover - Top Clay			
Point #	Northing	Easting	Elevation	Point #	Elevation	Desc.	Point #	Elevation	Desc.					
462	527316.19	1399327.34	633.36	1462	633.36	SUB	2462	634.87	TCY	1.51	3462	636.97	TCV	2.10
463	527363.29	1399327.48	634.36	1463	634.28	SUB	2463	635.96	TCY	1.68	3463	637.99	TCV	2.03
464	527410.38	1399327.62	635.36	1464	635.27	SUB	2464	636.94	TCY	1.67	3464	639.02	TCV	2.08
465	527423.50	1399327.65	635.63	1465	635.60	SUB	2465	637.17	TCY	1.57	3465	639.20	TCV	2.03
466	527425.50	1399327.66	634.63	1466	634.51	SUB	2466	636.13	TCY	1.62	3466	639.14	TCV	3.01
467	527428.50	1399327.67	634.63	1467	634.52	SUB	2467	636.16	TCY	1.64	3467	639.21	TCV	3.05
468	527430.82	1399327.68	635.79	1468	635.70	SUB	2468	637.29	TCY	1.59	3468	639.31	TCV	2.02
469	527457.48	1399327.75	636.36	1469	636.31	SUB	2469	637.88	TCY	1.57	3469	639.88	TCV	2.00
470	527504.57	1399327.89	637.35	1470	637.35	SUB	2470	638.89	TCY	1.54	3470	640.93	TCV	2.04
471	527551.66	1399328.03	638.35	1471	638.34	SUB	2471	639.92	TCY	1.58	3471	641.94	TCV	2.02
472	527598.76	1399328.17	639.32	1472	639.24	SUB	2472	640.82	TCY	1.58	3472	642.96	TCV	2.14
473	527645.85	1399328.31	640.35	1473	640.26	SUB	2473	641.87	TCY	1.61	3473	643.91	TCV	2.04
474	527652.50	1399328.32	640.52	1474	640.43	SUB	2474	642.04	TCY	1.61	3474	644.08	TCV	2.04
475	527654.50	1399328.33	639.52	1475	639.51	SUB	2475	641.10	TCY	1.59	3475	643.90	TCV	2.80
476	527657.50	1399328.34	639.52	1476	639.49	SUB	2476	641.12	TCY	1.63	3476	644.09	TCV	2.97
477	527659.86	1399328.35	640.70	1477	640.60	SUB	2477	642.20	TCY	1.60	3477	644.23	TCV	2.03
478	527692.95	1399328.44	641.52	1478	641.42	SUB	2478	643.02	TCY	1.60	3478	645.07	TCV	2.05
479	527746.76	1399328.60	642.85	1479	642.78	SUB	2479	644.36	TCY	1.58	3479	646.45	TCV	2.09
480	527800.57	1399328.76	644.18	1480	644.10	SUB	2480	645.69	TCY	1.59	3480	647.73	TCV	2.04
481	527854.38	1399328.92	645.51	1481	645.43	SUB	2481	647.01	TCY	1.58	3481	649.08	TCV	2.07
482	527906.42	1399329.07	646.80	1482	646.70	SUB	2482	648.38	TCY	1.68	3482	650.38	TCV	2.00
483	527912.01	1399329.08	648.75	1483	648.65	SUB	2483	650.30	TCY	1.65	3483	652.31	TCV	2.01
484	527917.01	1399329.10	648.75	1484	648.65	SUB	2484	650.25	TCY	1.60	3484	652.34	TCV	2.09
485	527917.07	1399279.05	647.51	1485	647.43	SUB	2485	649.03	TCY	1.60	3485	651.05	TCV	2.02
486	527912.07	1399279.04	647.51	1486	647.44	SUB	2486	649.07	TCY	1.63	3486	651.10	TCV	2.03
487	527906.65	1399279.02	645.56	1487	645.48	SUB	2487	647.10	TCY	1.62	3487	649.14	TCV	2.04
488	527854.53	1399278.87	644.27	1488	644.18	SUB	2488	645.80	TCY	1.62	3488	647.86	TCV	2.06
489	527800.72	1399278.71	642.94	1489	642.85	SUB	2489	644.48	TCY	1.63	3489	646.50	TCV	2.02
490	527746.91	1399278.55	641.61	1490	641.53	SUB	2490	643.12	TCY	1.59	3490	645.13	TCV	2.01
491	527693.10	1399278.40	640.28	1491	640.18	SUB	2491	641.79	TCY	1.61	3491	643.88	TCV	2.09
492	527659.86	1399278.30	639.61	1492	639.55	SUB	2492	641.13	TCY	1.58	3492	643.13	TCV	2.00
493	527657.50	1399278.29	638.43	1493	638.34	SUB	2493	640.02	TCY	1.68	3493	642.92	TCV	2.90
494	527654.50	1399278.28	638.43	1494	638.42	SUB	2494	639.98	TCY	1.56	3494	642.78	TCV	2.80
495	527652.50	1399278.28	639.43	1495	639.30	SUB	2495	640.93	TCY	1.63	3495	642.93	TCV	2.00
496	527646.00	1399278.26	639.26	1496	639.16	SUB	2496	640.78	TCY	1.62	3496	642.85	TCV	2.07
497	527598.91	1399278.12	638.28	1497	638.20	SUB	2497	639.79	TCY	1.59	3497	641.84	TCV	2.05
498	527551.81	1399277.98	637.29	1498	637.23	SUB	2498	638.83	TCY	1.60	3498	640.86	TCV	2.03
499	527504.72	1399277.84	636.29	1499	636.24	SUB	2499	637.81	TCY	1.57	3499	639.90	TCV	2.09
500	527457.62	1399277.71	635.29	1500	635.22	SUB	2500	636.79	TCY	1.57	3500	638.79	TCV	2.00
501	527430.82	1399277.63	634.73	1501	634.67	SUB	2501	636.25	TCY	1.58	3501	638.28	TCV	2.03
502	527428.50	1399277.62	633.57	1502	633.41	SUB	2502	635.13	TCY	1.72	3502	638.22	TCV	3.09
503	527425.50	1399277.61	633.57	1503	633.44	SUB	2503	635.11	TCY	1.67	3503	638.14	TCV	3.03
504	527423.50	1399277.61	634.57	1504	634.47	SUB	2504	636.12	TCY	1.65	3504	638.14	TCV	2.02
505	527410.53	1399277.57	634.30	1505	634.27	SUB	2505	635.84	TCY	1.57	3505	637.96	TCV	2.12
506	527363.43	1399277.43	633.30	1506	633.21	SUB	2506	634.84	TCY	1.63	3506	636.98	TCV	2.14
507	527316.34	1399277.29	632.30	1507	632.23	SUB	2507	633.83	TCY	1.60	3507	635.86	TCV	2.03
508	527269.24	1399277.15	631.30	1508	631.26	SUB	2508	632.86	TCY	1.60	3508	634.91	TCV	2.05
509	527222.15	1399277.02	630.30	1509	630.20	SUB	2509	631.90	TCY	1.70	3509	633.92	TCV	2.02
510	527204.73	1399276.97	629.94	1510	629.84	SUB	2510	631.47	TCY	1.63	3510	633.50	TCV	2.03
511	527202.73	1399276.96	628.94	1511	628.31	SUB	2511	630.54	TCY	2.23	3511	633.42	TCV	2.88
512	527199.73	1399276.95	628.94	1512	628.91	SUB	2512	630.50	TCY	1.59	3512	633.37	TCV	2.87
513	527193.54	1399226.89	627.74	1513	627.47	SUB	2513	629.24	TCY	1.77	3513	632.42	TCV	3.18
514	527196.54	1399226.89	627.74	1514	627.44	SUB	2514	629.24	TCY	1.80	3514	632.34	TCV	3.10
515	527198.54	1399226.90	628.74	1515	628.73	SUB	2515	630.28	TCY	1.55	3515	632.37	TCV	2.09
516	527222.29	1399226.97	629.24	1516	629.15	SUB	2516	630.77	TCY	1.62	3516	632.99	TCV	2.22
517	527269.39	1399227.11	630.24	1517	630.16	SUB	2517	631.82	TCY	1.66	3517	633.83	TCV	2.01
518	527316.48	1399227.25	631.24	1518	631.15	SUB	2518	632.74	TCY	1.59	3518	634.77	TCV	2.03
519	527363.58	1399227.38	632.24	1519	632.14	SUB	2519	633.76	TCY	1.62	3519	635.87	TCV	2.11
520	527410.67	1399227.52	633.23	1520	633.15	SUB	2520	634.75	TCY	1.60	3520	636.89	TCV	2.14
521	527423.50	1399227.56	633.50	1521	633.34	SUB	2521	635.06	TCY	1.72	3521	637.06	TCV	2.00
522	527425.50	1399227.56	632.50	1522	632.31	SUB	2522	634.00	TCY	1.69	3522	636.97	TCV	2.97
523	527428.50	1399227.57	632.50	1523	632.28	SUB	2523	634.09	TCY	1.81	3523	636.99	TCV	2.90
524	527430.82	1399227.58	633.66	1524	633.59	SUB	2524	635.18	TCY	1.59	3524	637.20	TCV	2.02
525	527457.77	1399227.66	634.23	1525	634.14	SUB	2525	635.74	TCY	1.60	3525	637.75	TCV	2.01
526	527504.86	1399227.80	635.23	1526	635.17	SUB	2526	636.75	TCY	1.58	3526	638.76	TCV	2.01
527	527551.96	1399227.93	636.23	1527	636.17	SUB	2527	637.74	TCY	1.57	3527	639.74	TCV	2.00
528	527599.05	1399228.07	637.23	1528	637.15	SUB	2528	638.74	TCY	1.59	3528	640.77	TCV	2.03
529	527646.15	1399228.21	638.22	1529	638.13	SUB	2529	639.72	TCY	1.59	3529	641.73	TCV	2.01
530	527652.50	1399228.23	638.39	1530	638.30	SUB	2530	639.93	TCY	1.63	3530	641.93	TCV	2.00
531	527654.50	1399228.23	637.39	1531	637.29	SUB	2531	638.93	TCY	1.64	3531	641.74	TCV	2.81
532	527657.50	1399228.24	637.39	1532	637.20	SUB	2532	638.97	TCY	1.77	3532	641.73	TCV	2.76
533	527659.86	1399228.25	638.57	1533	638.47	SUB	2533	640.10	TCY	1.63	3533	642.13	TCV	2.03
534	527693.24	1399228.35	639.19	1534	639.12	SUB	2534	640.72	TCY	1.60	3534	642.85	TCV	2.13
535	527747.05	1399228.51	640.37	1535	640.30	SUB	2535	641.89	TCY	1.59	3535	643.98	TCV	2.09
536	527800.86	1399228.66	641.70	1536	641.62	SUB	2536	643.23	TCY	1.61	3536	645.30	TCV	2.07
537	527854.68	1399228.82	643.03	1537	642.95	SUB	2537	644.57	TCY	1.62	3537	646.74	TCV	2.17
538	527906.89	1399228.97	644.32	1538	644.22	SUB	2538	645.86	TCY	1.64	3538	647.89	TCV	2.03
539	527912.13	1399228.99	646.27	1539	646.23	SUB	2539	647.86	TCY	1.63	3539	649.87	TCV	2.01
540	527917.13	1399229.00	646.27	1540	646.20	SUB	2540	647.85	TCY	1.65	3540	649.85	TCV	2.00
541	527917.20	1399178.96	645.02	1541	645.02	SUB	2541	646.61	TCY	1.59	3541	648.63	TCV	2.02
542	527912.20	1399178.94	645.02	1542	645.00	SUB	2542	646.57	TCY	1.57	3542	648.62	TCV	2.05
543	527912.22	1399159.73	644.55	1543	644.50	SUB	2543	646.09	TCY	1.59	3543	648.33	TCV	2.24
544	527917.22	1399159.74	644.55	1544	644.51	SUB	2544	646.15	TCY	1.64	3544	648.45	TCV	2.30
545	527917.24	1399148.39	644.82	1545	644.79	SUB	2545	646.38	TCY	1.59	3545	648.40	TCV	2.02
546	527912.24	1399148.37	644.82	1546	644.77	SUB	2546	646.36	TCY	1.59	3546	648.38	TCV	2.02
547	527907.27	1399148.36	643.30	1547	643.28	SUB	2547	644.85	TCY	1.57	3547	647.31	TCV	2.46
548	527904.58	1399152.35	642.00	1548	641.99	SUB	2548	643.50	TCY	1.51	3548	646.52	TCV	3.02
549	527904.57	1399161.35	642.00				2549	643.5	TCY		3549	646.50	TCV	3.00
550	527907.19	1399165.50	643.08				2550	644.61	TCY		3550	646.64	TCV	2.03
551	527907.17	1399168.50	643.08				2551	644.58	TCY		3551	646.64	TCV	2.06
552	527904.56	1399172.58	642.00				2552	643.6	TCY		3552	647.50	TOE	
553	527904.55	1399174.58	642.00	1553	641.97	SUB	2553	643.55	TCY	1.58	3553	648.55	TCV	5.00
554	527907.12	1399178.93	643.08	1554	643.00	SUB	2554	644.58	TCY	1.58	3554	648.62	TCV	4.04
555	527854.91	1399148.20	642.00	1555	641.95	SUB	2555	643.50	TCY	1.55	3555	645.52	TCV	2.02
556	527854.90	1399152.20	640.00	1556	639.97	SUB	2556	641.57	TCY	1.60	3556	645.49	TCV	3.92
557	527854.87	1399161.20	640.00				2557	641.6	TCY		3557	645.41	TCV	3.81
558	527854.86	1399165.35	642.00				2558	643.5	TCY		3558	645.66	TCV	2.16
559	527854.85	1399168.35	642.00				2559	643.5	TCY		3559	645.74	TCV	2.24
560	527854.84	1399172.44	640.00				2560	641.5	TCY		3560	646.09	TOE	
561	527854.84	1399174.44	640.00	1561	639.95	SUB	2561	641.51	TCY	1.56	3561	647.29	TCV	5.78
562	527854.82	1399178.77	641.79	1562	641.68	SUB	2562	643.30	TCY	1.62	3562	647.38	TCV	4.08
563	527801.10	1399148.05	640.67	1563	640.60	SUB	2563	642.22	TCY	1.62	3563	644.28	TCV	2.06
564	527801.09	1399152.05	638.67	1564	638.62	SUB	2564	640.19	TCY	1.57	3564	644.25	TCV	4.06
565	527801.06	1399161.05	638.67				2565	640.17	TCY		3565	644.13	TCV	3.96
566	527801.05	1399165.19	640.67				2566	642.17	TCY		3566	644.19	TCV	2.02
567	527801.04	1399168.19	640.67				2567	642.17	TCY		3567	644.22	TCV	2.05
568	527801.03	1399172.28	638.67				2568	640.2	TCY		3568	644.43	TOE	
569	527801.02	1399174.28	638.67	1569	638.66	SUB	2569	640.18	TCY	1.52	3569	645.88	TCV	5.70
570	527801.01	1399178.62	640.46	1570	640.46	SUB	2570	641.97	TCY	1.51	3570	645.78	TCV	3.81
571	527747.29	1399147.89	639.33	1571	639.29	SUB	2571	640.88	TCY	1.59	3571	642.96	TCV	2.08
572	527747.28	1399151.89	637.33	1572	637.30	SUB	2572	638.84	TCY	1.54	3572	642.90	TCV	4.06
573	527747.25	1399160.89	637.33				2573	638.86	TCY		3573	642.68	TCV	3.82
574	527747.24	1399165.03	639.33				2574	640.85	TCY		3574	642.85	TCV	2.00
575	527747.23	1399168.03	639.33				2575	640.83	TCY		3575	642.94	TCV	2.11
576	527747.22	1399172.12	637.33				2576	638.84	TCY		3576	642.85	TOE	
577	527747.21	1399174.12	637.33	1577	637.28	SUB	2577	638.86	TCY	1.58	3577	644.44	TCV	5.58
578	527747.20	1399178.46	639.30	1578	639.22	SUB	2578	640.80	TCY	1.58	3578	644.47	TCV	3.67
579	527693.48	1399147.73	638.00	1579	637.96	SUB	2579	639.51	TCY	1.55	3579	641.60	TCV	2.09
580	527693.47	1399151.73	636.00	1580	635.99	SUB	2580	637.60	TCY	1.61	3580	641.53	TCV	3.93
581	527693.44	1399160.73	636.00				2581	637.53	TCY		3581	641.49	TCV	3.96
582	527693.43	1399164.87	638.00				2582	639.52	TCY		3582	641.53	TCV	2.01
583	527693.42	1399167.87	638.00				2583	639.52	TCY		3583	641.56	TCV	2.04
584	527693.41	1399171.97	636.00				2584	637.51	TCY		3584	641.90	TOE	
585	527693.40	1399173.97	636.00	1585	635.93	SUB	2585	637.52	TCY	1.59	3585	643.39	TCV	5.87
586	527693.39	1399178.30	638.16	1586	638.09	SUB	2586	639.76	TCY	1.67	3586	643.37	TCV	3.61
587	527660.86	1399147.63	637.35	1587	637.26	SUB	2587	638.89	TCY	1.63	3587	640.96	TCV	2.07
588	527658.46	1399149.63	636.17	1588	636.10	SUB	2588	637.77	TCY	1.67	3588	640.50	TCV	2.73
589	527655.46	1399149.62	636.17	1589	636.10	SUB	2589	637.69	TCY	1.59	3589	640.47	TCV	2.78
590	527653.50	1399147.61	637.17	1590	637.11	SUB	2590	638.67	TCY	1.56	3590	640.69	TCV	2.02
591	527653.50	1399164.76	637.17				2591	638.67	TCY		3591	640.69	TCV	2.02
592	527653.50	1399167.76	637.17				2592	638.68	TCY		3592	640.69	TCV	2.01
593	527655.50	1399162.62	636.17				2593	637.7	TCY		3593	640.29	TCV	2.59
594	527655.50	1399169.85	636.17				2594	637.77	TCY		3594	641.06	TOE	
595	527658.50	1399169.86	636.17				2595	637.75	TCY		3595	641.25	TOE	
596	527658.50	1399162.63	636.17				2596	637.71	TCY		3596	640.47	TCV	2.76
597	527660.86	1399164.78	637.35				2597	638.85	TCY		3597	640.89	TCV	2.04
598	527660.86	1399167.78	637.35				2598	638.86	TCY		3598	640.87	TCV	2.01
599	527660.86	1399178.20	637.51	1599	637.44	SUB	2599	639.04	TCY	1.60	3599	642.88	TCV	3.84
600	527658.55	1399175.86	636.33	1600	636.27	SUB	2600	637.91	TCY	1.64	3600	641.04	TCV	3.13
601	527655.55	1399175.85	636.33	1601	636.25	SUB	2601	637.85	TCY	1.60	3601	640.91	TCV	3.06
602	527653.50	1399178.18	637.33	1602	637.23	SUB	2602	638.83	TCY	1.60	3602	642.69	TCV	3.86
603	527646.38	1399147.59	637.00	1603	636.90	SUB	2603	638.53	TCY	1.63	3603	640.59	TCV	2.06
604	527646.37	1399151.59	635.00	1604	634.92	SUB	2604	636.56	TCY	1.64	3604	640.49	TCV	3.93
605	527646.35	1399160.59	635.00				2605	636.52	TCY		3605	640.34	TCV	3.82
606	527646.33	1399164.74	637.00				2606	638.51	TCY		3606	640.52	TCV	2.01
607	527646.32	1399167.74	637.00				2607	638.52	TCY		3607	640.54	TCV	2.02
608	527646.31	1399171.83	635.00				2608	636.51	TCY		3608	640.94	TOE	
609	527646.31	1399173.83	635.00	1609	634.97	SUB	2609	636.51	TCY	1.54	3609	642.38	TCV	5.87
610	527646.29	1399178.16	637.16	1610	637.11	SUB	2610	638.69	TCY	1.58	3610	642.31	TCV	3.62
611	527599.29	1399147.45	636.00	1611	635.91	SUB	2611	637.56	TCY	1.65	3611	639.66	TCV	2.10
612	527599.28	1399151.45	634.00	1612	634.00	SUB	2612	635.59	TCY	1.59	3612	639.51	TCV	3.92
613	527599.25	1399160.45	634.00				2613	635.57	TCY		3613	639.42	TCV	3.85
614	527599.24	1399164.60	636.00				2614	637.52	TCY		3614	639.53	TCV	2.01
615	527599.23	1399167.60	636.00				2615	637.5	TCY		3615	639.56	TCV	2.06
616	527599.22	1399171.69	634.00				2616	635.53	TCY		3616	640.42	TOE	4.89
617	527599.21	1399173.69	634.00	1617	633.90	SUB	2617	635.51	TCY	1.61	3617	641.68	TCV	6.17
618	527599.20	1399178.02	636.16	1618	636.06	SUB	2618	637.66	TCY	1.60	3618	641.67	TCV	4.01
619	527552.19	1399147.32	635.00	1619	634.90	SUB	2619	636.52	TCY	1.62	3619	638.61	TCV	2.09
620	527552.18	1399151.32	633.00	1620	633.00	SUB	2620	634.53	TCY	1.53	3620	638.55	TCV	4.02
621	527552.16	1399160.32	633.00				2621	634.5	TCY		3621	638.26	TCV	3.76
622	527552.14	1399164.46	635.00				2622	636.51	TCY		3622	638.51	TCV	2.00

Proposed				Subgrade			Top of Clay			Top of Clay - Subgrade	Top of Cover - Top Clay			
Point #	Northing	Easting	Elevation	Point #	Elevation	Desc.	Point #	Elevation	Desc.		Point #	Elevation	Desc.	
623	527552.13	1399167.46	635.00				2623	636.5	TCY		3623	638.53	TCV	2.03
624	527552.12	1399171.55	633.00				2624	634.58	TCY		3624	638.83	TOE	
625	527552.12	1399173.55	633.00	1625	632.91	SUB	2625	634.57	TCY	1.66	3625	640.53	TCV	5.96
626	527552.10	1399177.89	635.16	1626	635.09	SUB	2626	636.66	TCY	1.57	3626	640.54	TCV	3.88
627	527505.10	1399147.18	634.00	1627	633.91	SUB	2627	635.56	TCY	1.65	3627	637.68	TCV	2.12
628	527505.09	1399151.18	632.00	1628	632.00	SUB	2628	633.51	TCY	1.51	3628	637.55	TCV	4.04
629	527505.06	1399160.18	632.00				2629	633.59	TCY		3629	637.38	TCV	3.79
630	527505.05	1399164.32	634.00				2630	635.53	TCY		3630	637.53	TCV	2.00
631	527505.04	1399167.32	634.00				2631	635.51	TCY		3631	637.51	TCV	2.00
632	527505.03	1399171.41	632.00				2632	633.5	TCY		3632	638.12	TOE	4.62
633	527505.02	1399173.41	632.00	1633	631.92	SUB	2633	633.58	TCY	1.66	3633	639.62	TCV	6.04
634	527505.01	1399177.75	634.16	1634	634.09	SUB	2634	635.66	TCY	1.57	3634	639.61	TCV	3.95
635	527458.00	1399147.04	633.00	1635	632.90	SUB	2635	634.59	TCY	1.69	3635	636.72	TCV	2.13
636	527457.99	1399151.04	631.00	1636	630.96	SUB	2636	632.54	TCY	1.58	3636	636.60	TCV	4.06
637	527457.97	1399160.04	631.00				2637	632.5	TCY		3637	636.37	TCV	3.87
638	527457.95	1399164.19	633.00				2638	634.52	TCY		3638	636.52	TCV	2.00
639	527457.95	1399167.19	633.00				2639	634.52	TCY		3639	636.53	TCV	2.01
640	527457.93	1399171.28	631.00				2640	632.51	TCY		3640	636.90	TOE	
641	527457.93	1399173.28	631.00	1641	630.95	SUB	2641	632.53	TCY	1.58	3641	638.55	TCV	6.02
642	527457.91	1399177.61	633.16	1642	633.07	SUB	2642	634.66	TCY	1.59	3642	638.48	TCV	3.82
643	527430.82	1399146.96	632.43	1643	632.37	SUB	2643	633.98	TCY	1.61	3643	636.01	TCV	2.03
644	527428.50	1399148.95	631.27	1644	631.13	SUB	2644	632.84	TCY	1.71	3644	635.84	TCV	3.00
645	527425.50	1399148.95	631.27	1645	631.14	SUB	2645	632.86	TCY	1.72	3645	635.76	TCV	2.90
646	527423.50	1399146.94	632.27	1646	632.17	SUB	2646	633.85	TCY	1.68	3646	635.86	TCV	2.01
647	527423.50	1399164.08	632.27				2647	633.77	TCY		3647	635.77	TCV	2.00
648	527423.50	1399167.08	632.27				2648	633.77	TCY		3648	635.79	TCV	2.02
649	527425.50	1399161.95	631.27				2649	632.85	TCY		3649	635.45	TCV	2.60
650	527425.50	1399169.18	631.27				2650	632.82	TCY		3650	636.13	TOE	
651	527428.50	1399169.19	631.27				2651	632.87	TCY		3651	636.20	TOE	
652	527428.50	1399161.95	631.27				2652	632.85	TCY		3652	635.54	TCV	2.69
653	527430.82	1399164.11	632.43				2653	633.94	TCY		3653	635.95	TCV	2.01
654	527430.82	1399167.11	632.43				2654	633.93	TCY		3654	635.95	TCV	2.02
655	527430.82	1399177.53	632.59	1655	632.50	SUB	2655	634.09	TCY	1.59	3655	637.79	TCV	3.70
656	527428.50	1399175.19	631.43	1656	631.07	SUB	2656	633.00	TCY	1.93	3656	636.14	TCV	3.14
657	527425.50	1399175.18	631.43	1657	631.13	SUB	2657	633.03	TCY	1.90	3657	636.04	TCV	3.01
658	527423.33	1399177.51	632.43	1658	632.33	SUB	2658	633.95	TCY	1.62	3658	637.66	TCV	3.71
659	527410.91	1399146.90	632.00	1659	631.95	SUB	2659	633.50	TCY	1.55	3659	635.58	TCV	2.08
660	527410.90	1399150.90	630.00	1660	629.92	SUB	2660	631.56	TCY	1.64	3660	635.56	TCV	4.00
661	527410.87	1399159.90	630.00				2661	631.56	TCY		3661	635.35	TCV	3.79
662	527410.86	1399164.05	632.00				2662	633.5	TCY		3662	635.51	TCV	2.01
663	527410.85	1399167.05	632.00				2663	633.53	TCY		3663	635.59	TCV	2.06
664	527410.84	1399171.14	630.00				2664	631.51	TCY		3664	635.97	TOE	4.46
665	527410.83	1399173.14	630.00	1665	629.98	SUB	2665	631.50	TCY	1.52	3665	637.60	TCV	6.10
666	527410.82	1399177.47	632.16	1666	632.09	SUB	2666	633.66	TCY	1.57	3666	637.56	TCV	3.90
667	527363.81	1399146.77	631.00	1667	630.93	SUB	2667	632.54	TCY	1.61	3667	634.62	TCV	2.08
668	527363.80	1399150.77	629.00	1668	629.00	SUB	2668	630.60	TCY	1.60	3668	634.52	TCV	3.92
669	527363.78	1399159.77	629.00				2669	630.59	TCY		3669	634.42	TCV	3.83
670	527363.76	1399163.91	631.00				2670	632.52	TCY		3670	634.53	TCV	2.01
671	527363.76	1399166.91	631.00				2671	632.51	TCY		3671	634.59	TCV	2.08
672	527363.74	1399171.00	629.00				2672	630.52	TCY		3672	634.61	TOE	
673	527363.74	1399173.00	629.00	1673	628.97	SUB	2673	630.50	TCY	1.53	3673	636.66	TCV	6.16
674	527363.73	1399177.34	631.16	1674	631.08	SUB	2674	632.66	TCY	1.58	3674	636.66	TCV	4.00
675	527316.72	1399146.63	630.00	1675	629.99	SUB	2675	631.60	TCY	1.61	3675	633.61	TCV	2.01
676	527316.71	1399150.63	628.00	1676	627.98	SUB	2676	629.60	TCY	1.62	3676	631.60	TCV	2.00
677	527316.68	1399159.63	628.00				2677	629.6	TCY		3677	633.28	TCV	3.68
678	527316.67	1399163.77	630.00				2678	631.51	TCY		3678	633.51	TCV	2.00
679	527316.66	1399166.77	630.00				2679	631.51	TCY		3679	633.58	TCV	2.07
680	527316.65	1399170.86	628.00				2680	629.55	TCY		3680	633.78	TOE	
681	527316.64	1399172.86	628.00	1681	627.96	SUB	2681	629.51	TCY	1.55	3681	635.61	TCV	6.10
682	527316.63	1399177.20	630.16	1682	630.07	SUB	2682	631.67	TCY	1.60	3682	635.57	TCV	3.90
683	527269.62	1399146.49	629.00	1683	628.92	SUB	2683	630.60	TCY	1.68	3683	632.75	TCV	2.15
684	527269.61	1399150.49	627.00	1684	626.95	SUB	2684	628.58	TCY	1.63	3684	632.71	TCV	4.13
685	527269.59	1399159.49	627.00				2685	628.59	TCY		3685	632.65	TCV	4.06
686	527269.57	1399163.63	629.00				2686	630.5	TCY		3686	632.65	TCV	2.15
687	527269.57	1399166.63	629.00				2687	630.5	TCY		3687	632.75	TCV	2.25
688	527269.55	1399170.72	627.00				2688	628.59	TCY		3688	633.08	TOE	
689	527269.55	1399172.72	627.00	1689	626.93	SUB	2689	628.57	TCY	1.64	3689	634.76	TCV	6.19
690	527269.54	1399177.06	629.16	1690	629.10	SUB	2690	630.66	TCY	1.56	3690	634.72	TCV	4.06
691	527231.27	1399176.95	628.36	1691	628.26	SUB	2691	629.88	TCY	1.62	3691	634.07	TCV	4.19
692	527221.98	1399186.17	628.36	1692	628.11	SUB	2692	629.86	TCY	1.75	3692	632.50	TCV	2.64
693	527195.18	1399185.44	627.75	1693	627.65	SUB	2693	629.35	TCY	1.70	3693	632.34	TCV	2.99
694	527193.02	1399183.44	626.75	1694	626.31	SUB	2694	628.31	TCY	2.00	3694	633.20	TCV	4.89
695	527190.01	1399183.44	626.75	1695	626.44	SUB	2695	628.34	TCY	1.90	3695	633.68	TCV	5.34
696	527194.54	1399180.44	625.50	1696	625.46	SUB	2696	627.08	TCY	1.62	3696	632.35	TCV	5.27
697	527194.38	1399178.44	625.50				2697	627.06	TCY		3697	632.33	TCV	5.27
698	527218.78	1399178.44	625.50				2698	627.04	TCY		3698	633.95	TCV	6.91
699	527219.60	1399180.44	625.50	1699	625.43	SUB	2699	627.05	TCY	1.62	3699	634.05	TCV	7.00
700	527228.03	1399172.60	626.00	1700	625.89	SUB	2700	627.53	TCY	1.64	3700	633.88	TCV	6.35
701	527227.25	1399170.60	626.00				2701	627.55	TCY		3701	633.42	TCV	5.87
702	527223.77	1399166.50	628.00				2702	629.53	TCY		3702	632.00	TCV	2.47
703	527222.55	1399163.50	628.00				2703	629.51	TCY		3703	631.51	TCV	2.00
704	527215.47	1399170.44	628.00				2704	629.52	TCY		3704	631.88	TCV	2.36
705	527216.70	1399173.44	628.00				2705	629.53	TCY		3705	632.00	TCV	2.47
706	527196.36	1399173.44	628.00				2706	629.51	TCY		3706	632.33	TCV	2.82
707	527196.56	1399170.44	628.00				2707	629.53	TCY		3707	631.85	TCV	2.32
708	527193.39	1399165.44	625.50	1708	625.32	SUB	2708	627.09	TCY	1.77	3708	631.39	TCV	4.30
709	527191.76	1399143.44	625.50	1709	625.43	SUB	2709	627.10	TCY	1.67	3709	631.84	TCV	4.74
710	527213.39	1399143.44	625.50	1710	625.50	SUB	2710	627.08	TCY	1.58	3710	631.68	TCV	4.60
711	527213.39	1399165.44	625.50	1711	625.48	SUB	2711	627.08	TCY	1.60	3711	631.56	TCV	4.48
712	527220.38	1399159.35	625.95	1712	625.90	SUB	2712	627.46	TCY	1.56	3712	631.40	TCV	3.94
713	527220.38	1399150.35	625.95	1713	625.73	SUB	2713	627.48	TCY	1.75	3713	631.59	TCV	4.11
714	527223.38	1399146.35	628.00	1714	628.00	SUB	2714	629.60	TCY	1.60	3714	631.63	TCV	2.03
715	527215.46	1399138.44	628.00	1715	627.90	SUB	2715	629.57	TCY	1.67	3715	631.70	TCV	2.13
716	527191.61	1399138.44	627.75	1716	627.31	SUB	2716	629.34	TCY	2.03	3716	631.84	TCV	2.50
717	527189.77	1399140.28	626.75	1717	626.33	SUB	2717	628.30	TCY	1.97	3717	632.83	TCV	4.53
718	527186.77	1399140.28	626.75	1718	626.31	SUB	2718	628.28	TCY	1.97	3718	633.90	TCV	5.62
719	527182.93	1399096.42	627.32	1719	627.09	SUB	2719	628.92	TCY	1.83	3719	632.08	TCV	3.16
720	527185.93	1399096.43	627.32	1720	627.21	SUB	2720	628.90	TCY	1.69	3720	631.92	TCV	3.02
721	527187.93	1399096.44	628.32	1721	628.26	SUB	2721	629.91	TCY	1.65	3721	632.01	TCV	2.10
722	527222.68	1399096.54	629.06	1722	628.97	SUB	2722	630.66	TCY	1.69	3722	632.67	TCV	2.01
723	527269.77	1399096.68	630.06	1723	630.02	SUB	2723	631.66	TCY	1.64	3723	633.66	TCV	2.00
724	527316.87	1399096.81	631.06	1724	630.97	SUB	2724	632.57	TCY	1.60	3724	634.62	TCV	2.05
725	527363.96	1399096.95	632.06	1725	632.00	SUB	2725	633.57	TCY	1.57	3725	635.59	TCV	2.02
726	527411.06	1399097.09	633.06	1726	633.02	SUB	2726	634.63	TCY	1.61	3726	636.66	TCV	2.03
727	527423.50	1399097.13	633.33	1727	633.21	SUB	2727	634.87	TCY	1.66	3727	636.88	TCV	2.01
728	527425.50	1399097.13	632.33	1728	632.27	SUB	2728	633.83	TCY	1.56	3728	636.79	TCV	2.96
729	527428.50	1399097.14	632.33	1729	632.30	SUB	2729	633.88	TCY	1.58	3729	636.84	TCV	2.96
730	527430.82	1399097.15	633.49	1730	633.41	SUB	2730	635.03	TCY	1.62	3730	637.05	TCV	2.02
731	527458.15	1399097.23	634.06	1731	633.98	SUB	2731	635.57	TCY	1.59	3731	637.58	TCV	2.01
732	527505.24	1399097.37	635.06	1732	635.00	SUB	2732	636.59	TCY	1.59	3732	638.66	TCV	2.07
733	527552.34	1399097.50	636.06	1733	635.96	SUB	2733	637.58	TCY	1.62	3733	639.60	TCV	2.02
734	527599.43	1399097.64	637.06	1734	636.98	SUB	2734	638.58	TCY	1.60	3734	640.58	TCV	2.00
735	527646.53	1399097.78	638.07	1735	637.98	SUB	2735	639.57	TCY	1.59	3735	641.60	TCV	2.03
736	527654.50	1399097.80	638.26	1736	638.11	SUB	2736	639.77	TCY	1.66	3736	641.77	TCV	2.00
737	527656.50	1399097.81	637.26	1737	636.98	SUB	2737	638.76	TCY	1.78	3737	641.75	TCV	2.99
738	527659.50	1399097.82	637.26	1738	637.12	SUB	2738	638.76	TCY	1.64	3738	641.79	TCV	3.03
739	527661.86	1399097.82	638.44	1739	638.36	SUB	2739	639.96	TCY	1.60	3739	642.00	TCV	2.04
740	527693.62	1399097.92	639.24	1740	639.17	SUB	2740	640.76	TCY	1.59	3740	642.79	TCV	2.03
741	527747.44	1399098.08	640.57	1741	640.54	SUB	2741	642.12	TCY	1.58	3741	644.16	TCV	2.04
742	527801.25	1399098.23	641.90	1742	641.83	SUB	2742	643.40	TCY	1.57	3742	645.44	TCV	2.04
743	527855.06	1399098.39	643.24	1743	643.16	SUB	2743	644.83	TCY	1.67	3743	646.83	TCV	2.00
744	527907.50	1399098.54	644.54	1744	644.50	SUB	2744	646.12	TCY	1.62	3744	648.15	TCV	2.03
745	527912.30	1399098.56	646.06	1745	646.04	SUB	2745	647.65	TCY	1.61	3745	649.65	TCV	2.00
746	527917.30	1399098.57	646.06	1746	646.02	SUB	2746	647.60	TCY	1.58	3746	649.62	TCV	2.02
747	527917.36	1399048.57	647.31	1747	647.27	SUB	2747	648.82	TCY	1.55	3747	650.85	TCV	2.03
748	527912.36	1399048.56	647.31	1748	647.23	SUB	2748	648.85	TCY	1.62	3748	650.86	TCV	2.01
749	527907.73	1399048.54	645.77	1749	645.68	SUB	2749	647.30	TCY	1.62	3749	649.33	TCV	2.03
750	527855.20	1399048.39	644.47	1750	644.40	SUB	2750	645.99	TCY	1.59	3750	648.01	TCV	2.02
751	527801.39	1399048.23	643.14	1751	643.05	SUB	2751	644.68	TCY	1.63	3751	646.74	TCV	2.06
752	527747.58	1399048.08	641.81	1752	641.77	SUB	2752	643.36	TCY	1.59	3752	645.42	TCV	2.06
753	527693.77	1399047.92	640.47	1753	640.37	SUB	2753	641.97	TCY	1.60	3753	644.05	TCV	2.08
754	527661.86	1399047.82	639.68	1754	639.64	SUB	2754	641.21	TCY	1.57	3754	643.24	TCV	2.03
755	527659.50	1399047.82	638.50	1755	638.26	SUB	2755	640.10	TCY	1.84	3755	642.81	TCV	2.71
756	527656.50	1399047.81	638.50	1756	638.26	SUB	2756	640.09	TCY	1.83	3756	642.84	TCV	2.75
757	527654.50	1399047.80	639.50	1757	639.40	SUB	2757	641.02	TCY	1.62	3757	643.04	TCV	2.02
758	527646.68	1399047.78	639.31	1758	639.25	SUB	2758	640.89	TCY	1.64	3758	642.94	TCV	2.05
759	527599.58	1399047.64	638.14	1759	638.07	SUB	2759	639.67	TCY	1.60	3759	641.70	TCV	2.03
760	527552.49	1399047.50	637.12	1760	637.05	SUB	2760	638.69	TCY	1.64	3760	640.73	TCV	2.04
761	527505.39	1399047.37	636.12	1761	636.05	SUB	2761	637.62	TCY	1.57	3761	639.66	TCV	2.04
762	527458.30	1399047.23	635.12	1762	635.06	SUB	2762	636.72	TCY	1.66	3762	638.77	TCV	2.05
763	527430.82	1399047.15	634.55	1763	634.45	SUB	2763	636.15	TCY	1.70	3763	638.18	TCV	2.03
764	527428.50	1399047.14	633.39	1764	633.02	SUB	2764	634.91	TCY	1.89	3764	638.08	TCV	3.17
765	527425.50	1399047.13	633.39	1765	633.02	SUB	2765	634.90	TCY	1.88	3765	637.90	TCV	3.00
766	527423.50	1399047.13	634.39	1766	633.98	SUB	2766	635.96	TCY	1.98	3766	637.97	TCV	2.01
767	527411.20	1399047.09	634.12	1767	634.04	SUB	2767	635.72	TCY	1.68	3767	637.76	TCV	2.04
768	527364.11	1399046.95	633.12	1768	633.06	SUB	2768	634.72	TCY	1.66	3768	636.73	TCV	2.01
769	527317.01	1399046.82	632.12	1769	632.06	SUB	2769	633.67	TCY	1.61	3769	635.72	TCV	2.05
770	527269.92	1399046.68	631.12	1770	631.03	SUB	2770	632.70	TCY	1.67	3770	634.70	TCV	2.00
771	527222.82	1399046.54	630.12	1771	630.05	SUB	2771	631.70	TCY	1.65	3771	633.71	TCV	2.01
772	527187.71	1399046.44	629.36	1772	629.35	SUB	2772	630.95	TCY	1.60	3772	632.97	TCV	2.02
773	527185.71	1399046.43	628.36	1773	628.21	SUB	2773	629.96	TCY	1.75	3773	632.94	TCV	2.98
774	527182.71	1399046.42	628.36	1774	627.95	SUB	2774	629.93	TCY	1.98	3774	633.10	TCV	3.17
775	527182.48	1398996.42	629.39	1775	629.10	SUB	2775	630.98	TCY	1.88	3775	634.23	TCV	3.25
776	527185.48	1398996.43	629.39	1776	629.25	SUB	2776	630.96	TCY	1.71	3776	633.88	TCV	2.92
777	527187.48	1398996.44	630.39	1777	630.35	SUB	2777	631.98	TCY	1.63	3777	634.00	TCV	2.02
778	527222.97	1398996.54	631.18	1778	631.10	SUB	2778	632.78	TCY	1.68	3778	634.81	TCV	2.03
779	527270.06	1398996.68	632.18	1779	632.08	SUB	2779	633.76	TCY	1.68	3779	635.76	TCV	2.00
780	527317.16	1398996.82	633.18	1780	633.09	SUB	2780	634.77	TCY	1.68	3780	636.80	TCV	2.03
781	527364.25	1398996.95	634.18	1781	634.18	SUB	2781	635.78	TCY	1.60	3781	637.82	TCV	2.04
782	527411.35	1398997.09	635.18	1782	635.17	SUB	2782	636.76	TCY	1.59	3782	638.81	TCV	2.05
783	527423.50	1398997.13	635.45	1783	634.87	SUB	2783	637.05	TCY	2.18	3783	639.06	TCV	2.01

Proposed				Subgrade			Top of Clay			Top of Clay - Subgrade	Top of Cover - Top Clay			
Point #	Northing	Easting	Elevation	Point #	Elevation	Desc.	Point #	Elevation	Desc.		Point #	Elevation	Desc.	
784	527425.50	1398997.13	634.45	1784	634.20	SUB	2784	636.02	TCY	1.82	3784	638.92	TCV	2.90
785	527428.50	1398997.14	634.45	1785	634.22	SUB	2785	636.05	TCY	1.83	3785	639.07	TCV	3.02
786	527430.82	1398997.15	635.61	1786	635.52	SUB	2786	637.19	TCY	1.67	3786	639.24	TCV	2.05
787	527458.44	1398997.23	636.18	1787	636.15	SUB	2787	637.73	TCY	1.58	3787	639.75	TCV	2.02
788	527505.54	1398997.37	637.18	1788	637.13	SUB	2788	638.68	TCY	1.55	3788	640.68	TCV	2.00
789	527552.63	1398997.50	638.21	1789	638.13	SUB	2789	639.71	TCY	1.58	3789	641.87	TCV	2.16
790	527599.73	1398997.64	639.38	1790	639.29	SUB	2790	640.88	TCY	1.59	3790	642.92	TCV	2.04
791	527646.82	1398997.78	640.54	1791	640.47	SUB	2791	642.05	TCY	1.58	3791	644.12	TCV	2.07
792	527654.50	1398997.80	640.73	1792	640.60	SUB	2792	642.23	TCY	1.63	3792	644.29	TCV	2.06
793	527656.50	1398997.81	639.73	1793	639.37	SUB	2793	641.29	TCY	1.92	3793	644.23	TCV	2.94
794	527659.50	1398997.82	639.73	1794	639.58	SUB	2794	641.32	TCY	1.74	3794	644.30	TCV	2.98
795	527661.86	1398997.82	640.91	1795	640.83	SUB	2795	642.41	TCY	1.58	3795	644.43	TCV	2.02
796	527693.92	1398997.92	641.71	1796	641.61	SUB	2796	643.25	TCY	1.64	3796	645.28	TCV	2.03
797	527747.73	1398998.08	643.04	1797	642.96	SUB	2797	644.55	TCY	1.59	3797	646.56	TCV	2.01
798	527801.54	1398998.23	644.38	1798	644.30	SUB	2798	645.91	TCY	1.61	3798	647.96	TCV	2.05
799	527855.35	1398998.39	645.71	1799	645.61	SUB	2799	647.21	TCY	1.60	3799	649.26	TCV	2.05
800	527907.97	1398998.54	647.01	1800	646.91	SUB	2800	648.58	TCY	1.67	3800	650.63	TCV	2.05
801	527912.43	1398998.56	648.55	1801	648.46	SUB	2801	650.13	TCY	1.67	3801	652.13	TCV	2.00
802	527917.43	1398998.57	648.55	1802	648.48	SUB	2802	650.05	TCY	1.57	3802	652.09	TCV	2.04
803	527917.49	1398948.57	649.79	1803	649.79	SUB	2803	651.30	TCY	1.51	3803	653.47	TCV	2.17
804	527912.49	1398948.56	649.79	1804	649.77	SUB	2804	651.34	TCY	1.57	3804	653.34	TCV	2.00
805	527908.20	1398948.55	648.25	1805	648.21	SUB	2805	649.77	TCY	1.56	3805	651.79	TCV	2.02
806	527855.50	1398948.39	646.94	1806	646.90	SUB	2806	648.44	TCY	1.54	3806	650.47	TCV	2.03
807	527801.69	1398948.23	645.61	1807	645.53	SUB	2807	647.11	TCY	1.58	3807	649.13	TCV	2.02
808	527747.87	1398948.08	644.28	1808	644.20	SUB	2808	645.78	TCY	1.58	3808	647.81	TCV	2.03
809	527694.06	1398947.92	642.95	1809	642.86	SUB	2809	644.46	TCY	1.60	3809	646.46	TCV	2.00
810	527661.86	1398947.82	642.15	1810	642.05	SUB	2810	643.67	TCY	1.62	3810	645.70	TCV	2.03
811	527659.50	1398947.82	640.97	1811	640.63	SUB	2811	642.57	TCY	1.94	3811	645.40	TCV	2.83
812	527656.50	1398947.81	640.97	1812	640.67	SUB	2812	642.55	TCY	1.88	3812	645.40	TCV	2.85
813	527654.50	1398947.80	641.97	1813	641.81	SUB	2813	643.47	TCY	1.66	3813	645.48	TCV	2.01
814	527646.97	1398947.78	641.78	1814	641.70	SUB	2814	643.30	TCY	1.60	3814	645.38	TCV	2.08
815	527599.87	1398947.64	640.61	1815	640.52	SUB	2815	642.12	TCY	1.60	3815	644.14	TCV	2.02
816	527552.78	1398947.50	639.45	1816	639.38	SUB	2816	640.95	TCY	1.57	3816	642.99	TCV	2.04
817	527505.68	1398947.37	638.28	1817	638.18	SUB	2817	639.78	TCY	1.60	3817	641.81	TCV	2.03
818	527458.59	1398947.23	637.24	1818	637.19	SUB	2818	638.77	TCY	1.58	3818	640.78	TCV	2.01
819	527430.82	1398947.15	636.67	1819	636.60	SUB	2819	638.17	TCY	1.57	3819	640.19	TCV	2.02
820	527428.50	1398947.14	635.51	1820	635.12	SUB	2820	637.05	TCY	1.93	3820	639.90	TCV	2.85
821	527425.50	1398947.13	635.51	1821	635.08	SUB	2821	637.02	TCY	1.94	3821	639.95	TCV	2.93
822	527423.50	1398947.13	636.51	1822	636.16	SUB	2822	638.02	TCY	1.86	3822	640.03	TCV	2.01
823	527411.49	1398947.09	636.24	1823	636.17	SUB	2823	637.76	TCY	1.59	3823	639.83	TCV	2.07
824	527364.40	1398946.95	635.24	1824	635.14	SUB	2824	636.79	TCY	1.65	3824	638.83	TCV	2.04
825	527364.50	1398911.07	636.00	1825	635.92	SUB	2825	637.52	TCY	1.60	3825	639.55	TCV	2.03
826	527317.42	1398908.78	635.05	1826	635.00	SUB	2826	636.57	TCY	1.57	3826	638.74	TCV	2.17
827	527317.30	1398946.82	634.24	1827	634.15	SUB	2827	635.84	TCY	1.69	3827	637.89	TCV	2.05
828	527270.21	1398946.68	633.24	1828	633.19	SUB	2828	634.84	TCY	1.65	3828	636.85	TCV	2.01
829	527270.33	1398906.49	634.09	1829	634.04	SUB	2829	635.68	TCY	1.64	3829	637.69	TCV	2.01
830	527214.84	1398903.81	632.97	1830	632.94	SUB	2830	634.54	TCY	1.60	3830	636.62	TCV	2.08
831	527223.11	1398946.54	632.24	1831	632.15	SUB	2831	633.84	TCY	1.69	3831	635.88	TCV	2.04
832	527187.28	1398946.43	631.43	1832	631.33	SUB	2832	633.03	TCY	1.70	3832	635.03	TCV	2.00
833	527185.27	1398946.43	630.43	1833	630.04	SUB	2833	632.02	TCY	1.98	3833	635.03	TCV	3.01
834	527182.26	1398946.42	630.43	1834	630.04	SUB	2834	632.02	TCY	1.98	3834	635.08	TCV	3.06
835	527186.45	1398902.60	631.47	1835	630.86	SUB	2835	632.98	TCY	2.12	3835	636.13	TCV	3.15
836	527189.41	1398903.15	631.47	1836	630.94	SUB	2836	632.99	TCY	2.05	3836	636.11	TCV	3.12
837	527191.39	1398903.52	632.47	1837	632.38	SUB	2837	633.98	TCY	1.60	3837	636.13	TCV	2.15
838	527190.62	1398887.87	631.79	1838	631.78	SUB	2838	633.33	TCY	1.55	3838	636.59	TCV	3.26
839	527195.28	1398882.40	632.00	1839	631.93	SUB	2839	633.53	TCY	1.60	3839	636.64	TCV	3.11
840	527198.81	1398877.28	633.19	1840	632.75	SUB	2840	634.78	TCY	2.03	3840	637.42	TCV	2.64
841	527216.83	1398872.87	633.66	1841	633.62	SUB	2841	635.26	TCY	1.64	3841	637.33	TCV	2.07
842	527270.42	1398876.32	634.73	1842	634.70	SUB	2842	636.33	TCY	1.63	3842	638.36	TCV	2.03
843	527270.45	1398865.29	638.18	1843	638.08	SUB	2843	639.75	TCY	1.67	3843	642.64	TCV	2.89
844	527317.53	1398868.32	639.13	1844	639.04	SUB	2844	640.68	TCY	1.64	3844	643.50	TCV	2.82
845	527317.50	1398879.34	635.67	1845	635.59	SUB	2845	637.26	TCY	1.67	3845	639.27	TCV	2.01
846	527364.59	1398882.36	636.61	1846	636.53	SUB	2846	638.21	TCY	1.68	3846	640.22	TCV	2.01
847	527364.62	1398871.34	640.08	1847	640.02	SUB	2847	641.61	TCY	1.59	3847	644.52	TCV	2.91
848	527411.71	1398874.37	641.03	1848	640.93	SUB	2848	642.53	TCY	1.60	3848	645.47	TCV	2.94
849	527411.67	1398885.39	637.55	1849	637.48	SUB	2849	639.08	TCY	1.60	3849	641.08	TCV	2.00
850	527423.50	1398886.15	637.78	1850	637.69	SUB	2850	639.38	TCY	1.69	3850	641.55	TCV	2.17
851	527425.50	1398889.28	636.78	1851	636.78	SUB	2851	638.36	TCY	1.58	3851	641.64	TCV	3.28
852	527428.50	1398889.47	636.78	1852	636.77	SUB	2852	638.37	TCY	1.60	3852	641.72	TCV	3.35
853	527430.82	1398886.62	637.93	1853	637.85	SUB	2853	639.51	TCY	1.66	3853	641.74	TCV	2.23
854	527458.76	1398888.41	638.49	1854	638.43	SUB	2854	640.00	TCY	1.57	3854	642.30	TCV	2.30
855	527458.79	1398877.39	642.11	1855	642.03	SUB	2855	643.62	TCY	1.59	3855	646.51	TCV	2.89
857	527505.85	1398891.44	639.42	1857	639.33	SUB	2857	640.98	TCY	1.65	3857	643.18	TCV	2.20
858	527552.93	1398894.46	640.76	1858	640.67	SUB	2858	642.26	TCY	1.59	3858	644.51	TCV	2.25
859	527552.97	1398883.44	644.29	1859	644.22	SUB	2859	645.81	TCY	1.59	3859	648.65	TCV	2.84
860	527600.05	1398886.46	645.38	1860	645.30	SUB	2860	646.89	TCY	1.59	3860	649.72	TCV	2.83
861	527600.02	1398897.48	641.85	1861	641.77	SUB	2861	643.45	TCY	1.68	3861	645.49	TCV	2.04
862	527647.14	1398889.49	646.48	1862	646.43	SUB	2862	647.98	TCY	1.55	3862	650.83	TCV	2.85
863	527647.11	1398900.51	642.95	1863	642.89	SUB	2863	644.55	TCY	1.66	3863	646.71	TCV	2.16
864	527654.50	1398900.98	643.12	1864	643.11	SUB	2864	644.72	TCY	1.61	3864	646.72	TCV	2.00
865	527656.50	1398904.12	642.12	1865	642.08	SUB	2865	643.72	TCY	1.64	3865	646.41	TCV	2.69
866	527659.50	1398904.31	642.12	1866	642.10	SUB	2866	643.69	TCY	1.59	3866	646.41	TCV	2.72
867	527661.86	1398901.46	643.29	1867	643.26	SUB	2867	644.81	TCY	1.55	3867	646.82	TCV	2.01
868	527694.19	1398903.48	644.04	1868	643.97	SUB	2868	645.60	TCY	1.63	3868	647.66	TCV	2.06
869	527694.23	1398892.40	647.58	1869	647.49	SUB	2869	649.14	TCY	1.65	3869	652.05	TCV	2.91
870	527748.03	1398894.76	648.84	1870	648.75	SUB	2870	650.42	TCY	1.67	3870	653.32	TCV	2.90
871	527748.00	1398905.28	645.34	1871	645.25	SUB	2871	646.94	TCY	1.69	3871	648.96	TCV	2.02
872	527801.81	1398907.09	646.63	1872	646.58	SUB	2872	648.23	TCY	1.65	3872	650.23	TCV	2.00
873	527801.84	1398897.13	650.15	1873	650.07	SUB	2873	651.73	TCY	1.66	3873	654.60	TCV	2.87
874	527855.64	1398899.49	651.66	1874	651.57	SUB	2874	653.23	TCY	1.66	3874	655.90	TCV	2.67
875	527855.61	1398908.90	647.92	1875	647.85	SUB	2875	649.47	TCY	1.62	3875	651.52	TCV	2.05
876	527908.38	1398910.67	649.19	1876	649.13	SUB	2876	650.77	TCY	1.64	3876	652.84	TCV	2.07
877	527912.54	1398910.89	650.72	1877	650.66	SUB	2877	652.30	TCY	1.64	3877	654.47	TCV	2.17
878	527917.54	1398910.89	650.72	1878	650.64	SUB	2878	652.32	TCY	1.68	3878	654.50	TCV	2.18
879	527922.52	1398902.44	653.51	1879	650.64	SUB	2879	652.35	TCY	1.71	3879	654.51	TCV	2.16
880	527954.63	1398903.85	643.37	1880	642.20	SUB	2880	644.97	TCY	2.77	3880	647.76	TCV	2.79
881	527954.96	1398929.87	642.71	1881	642.54	SUB	2881	644.30	TCY	1.76	3881	646.32	TCV	2.02
882	527939.00	1398937.79	642.85	1882	642.82	SUB	2882	644.36	TCY	1.54	3882	646.40	TCV	2.04
883	527939.11	1398976.01	641.95	1883	641.89	SUB	2883	643.45	TCY	1.56	3883	645.51	TCV	2.06
884	527955.55	1398975.85	641.55	1884	641.37	SUB	2884	643.06	TCY	1.69	3884	645.13	TCV	2.07
885	527956.13	1399021.84	640.39	1885	640.22	SUB	2885	641.90	TCY	1.68	3885	643.98	TCV	2.08
886	527939.23	1399021.95	640.79	1886	640.70	SUB	2886	642.31	TCY	1.61	3886	644.33	TCV	2.02
887	527939.36	1399067.89	639.64	1887	639.61	SUB	2887	641.14	TCY	1.53	3887	643.19	TCV	2.05
888	527956.71	1399067.82	639.23	1888	639.09	SUB	2888	640.77	TCY	1.68	3888	642.88	TCV	2.11
889	527957.30	1399113.80	638.07	1889	637.95	SUB	2889	639.63	TCY	1.68	3889	641.78	TCV	2.15
890	527939.48	1399113.83	638.48	1890	638.40	SUB	2890	640.07	TCY	1.67	3890	642.13	TCV	2.06
891	527939.61	1399159.77	637.33	1891	637.24	SUB	2891	638.93	TCY	1.69	3891	641.05	TCV	2.12
892	527957.88	1399159.81	636.91	1892	636.77	SUB	2892	638.45	TCY	1.68	3892	640.60	TCV	2.15
893	527957.60	1399207.61	638.11	1893	637.96	SUB	2893	639.68	TCY	1.72	3893	641.83	TCV	2.15
894	527939.39	1399207.58	638.53	1894	638.44	SUB	2894	640.11	TCY	1.67	3894	642.16	TCV	2.05
895	527939.18	1399255.39	639.73	1895	639.66	SUB	2895	641.32	TCY	1.66	3895	643.34	TCV	2.02
896	527957.32	1399255.43	639.31	1896	639.13	SUB	2896	640.84	TCY	1.71	3896	643.00	TCV	2.16
897	527957.04	1399303.25	640.51	1897	640.36	SUB	2897	642.02	TCY	1.66	3897	644.22	TCV	2.20
898	527938.96	1399303.20	640.93	1898	640.91	SUB	2898	642.52	TCY	1.61	3898	644.53	TCV	2.01
899	527938.75	1399351.01	642.14	1899	642.07	SUB	2899	643.70	TCY	1.63	3899	645.99	TCV	2.29
900	527956.75	1399351.07	641.71	1900	641.55	SUB	2900	643.31	TCY	1.76	3900	645.49	TCV	2.18
901	527956.47	1399398.89	642.91	1901	642.76	SUB	2901	644.48	TCY	1.72	3901	647.08	TCV	2.60
902	527938.53	1399398.82	643.34	1902	643.27	SUB	2902	644.89	TCY	1.62	3902	647.15	TCV	2.26
903	527938.31	1399446.63	644.54	1903	644.53	SUB	2903	646.13	TCY	1.60	3903	648.38	TCV	2.25
904	527956.19	1399446.71	644.11	1904	643.96	SUB	2904	645.70	TCY	1.74	3904	648.38	TCV	2.68
905	527954.08	1399490.57	645.26	1905	645.12	SUB	2905	646.76	TCY	1.64	3905	649.82	TCV	3.06
906	527938.14	1399485.05	645.50	1906	645.43	SUB	2906	647.10	TCY	1.67	3906	649.56	TCV	2.46
907	527937.97	1399523.46	646.47	1907	646.45	SUB	2907	648.00	TCY	1.55	3907	650.71	TCV	2.71
908	527951.97	1399534.63	646.40	1908	644.41	SUB	2908	647.90	TCY	3.49	3908	652.39	TCV	4.49
909	527926.00	1399577.24	642.00	1909	641.91	SUB	2909	645.45	TCY	3.54	3909	650.56	TCV	5.11
910	527902.62	1399575.39	642.00	1910	641.99	SUB	2910	643.58	TCY	1.59	3910	646.93	TCV	3.35
911	527909.73	1399593.41	642.00	1911	641.93	SUB	2911	643.78	TCY	1.85	3911	647.52	TCV	3.74
912	527860.80	1399593.03	640.74	1912	640.61	SUB	2912	642.26	TCY	1.65	3912	644.57	TCV	2.31
913	527852.95	1399575.11	640.88	1913	640.84	SUB	2913	642.48	TCY	1.64	3913	644.57	TCV	2.09
914	527803.27	1399574.82	639.74	1914	639.69	SUB	2914	641.33	TCY	1.64	3914	643.55	TCV	2.22
915	527809.99	1399592.63	639.44	1915	639.32	SUB	2915	640.97	TCY	1.65	3915	643.15	TCV	2.18
916	527759.18	1399592.23	638.18	1916	638.05	SUB	2916	639.77	TCY	1.72	3916	641.88	TCV	2.11
917	527753.60	1399574.54	638.51	1917	638.47	SUB	2917	640.09	TCY	1.62	3917	642.29	TCV	2.20
918	527703.92	1399574.26	637.28	1918	637.26	SUB	2918	638.81	TCY	1.55	3918	640.84	TCV	2.03
919	527708.37	1399591.83	636.93	1919	636.76	SUB	2919	638.52	TCY	1.76	3919	640.67	TCV	2.15
920	527657.56	1399591.43	635.67	1920	635.50	SUB	2920	637.27	TCY	1.77	3920	639.41	TCV	2.14
921	527654.24	1399573.98	636.05	1921	635.97	SUB	2921	637.61	TCY	1.64	3921	639.72	TCV	2.11
922	527604.57	1399573.70	634.82	1922	634.72	SUB	2922	636.32	TCY	1.60	3922	638.45	TCV	2.13
923	527606.75	1399591.03	634.41	1923	634.23	SUB	2923	636.01	TCY	1.78	3923	638.20	TCV	2.19
924	527555.94	1399590.63	633.23	1924	633.15	SUB	2924	634.81	TCY	1.66	3924	636.93	TCV	2.12
925	527554.89	1399573.42	633.59	1925	633.49	SUB	2925	635.19	TCY	1.70	3925	637.21	TCV	2.02
926	527505.22	1399573.14	632.36	1926	632.35	SUB	2926	633.95	TCY	1.60	3926	635.97	TCV	2.02
927	527505.13	1399590.23	632.08	1927	631.98	SUB	2927	633.67	TCY	1.69	3927	635.85	TCV	2.18
928	527454.22	1399590.65	630.75	1928	630.59	SUB	2928	632.26	TCY	1.67	3928	634.44	TCV	2.18
929	527454.38	1399572.85	631.10	1929	631.10	SUB	2929	632.68	TCY	1.58	3929	634.92	TCV	2.24
930	527403.55	1399572.56	629.84	1930	629.70	SUB	2930	631.37	TCY	1.67	3930	633.59	TCV	2.22
931	527403.38	1399591.08	629.41	1931	629.29	SUB	2931	630.98	TCY	1.69	3931	633.11	TCV	2.13
932	527352.54	1399591.51	628.08	1932	627.98	SUB	2932	629.68	TCY	1.70	3932	631.84	TCV	2.16
933	527352.26	1399573.27	628.55	1933	628.46	SUB	2933	630.06	TCY	1.60	3933	632.10	TCV	2.04
934	527309.34	1399573.86	627.47	1934	627.39	SUB	2934	628.99	TCY	1.60	3934	631.28	TCV	2.29
935	527309.60	1399591.74	627.04	1935	626.92	SUB	2935	628.61	TCY	1.69	3935	630.77	TCV	2.16
936	527266.65	1399591.95	626.00	1936	625.95	SUB	2936	627.50	TCY	1.55	3936	629.82	TCV	2.32
937	527263.31	1399574.49	626.31	1937	626.29	SUB	2937	627.84	TCY	1.55	3937	630.28	TCV	2.44
938	527203.53	1399595.03	625.90	1938	625.82	SUB	2938	627.50	TCY	1.68	3938	630.72	TCV	3.22
939	527203.28	1399579.32	626.72	1939	628.25	SUB	2939	629.83	TCY	1.58	3939	633.07	TCV	3.24
940	527207.64	1399571.07	630.38	1940	630.75	SUB	2940	632.42	TCY	1.67	3940	634.49	TCV	2.07
941	527192.91	1399170.44	626.45				2941	628.00	TCY					
942	527192.92	1399173.44	626.52				2942	628.07	TCY					
943	527189.92	1399173.44	626.52				2943	628.09	TCY					
944	527189.91	1399170.44	626.45				2944	628.01	TCY					

Legend
SUB *Subgrade*
TCY *Top of Clay*
TCV *Top of Cover Material*

NORTH CAROLINA PROFESSIONAL SEAL L-1290 LAND SURVEYOR DONALD LAWRENCE
7-10-09

Sheet 3 of 3

FDL& assoc

Landfill As-Built

Plant Allen Steam Station

Gaston County, North Carolina

Orig. scale 1"= NA Date: 7/6/09

Surveyed by: Lawrence Associates, P.A.
106 W. Jefferson St. P.O. Box 1014
Monroe, North Carolina 28111 (704) 289-1013

REVISIONS
Drawn By FDL
FDL 7/8/09

Job No. 1640-2335 Drawing file Spread Sheet7-6-09.dwg Drawing no. 09/76

C:\proj\1640-2335\Spread Sheet7-6-09.dwg 7/6/2009 4:02:35 PM EDT

APPENDIX II – GEOSYNTHETICS

Section 1 – Inventory
Section 2 – Geosynthetic Clay Liner (GCL)
Section 3 – HDPE Geomembrane

APPENDIX II – GEOSYNTHETICS
Section 1 – Inventory

Field Inventory Forms
Bills of Lading/Shipment Lists

Field Inventory Forms

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 08-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 1 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000001	200902CV	
00000006	200902CV	
00000009	200902CV	
00000010	200902CV	
00000011	200902CV	
00000012	200902CV	
00000016	200902CV	
00000018	200902CV	
00000019	200902CV	
00000020	200902CV	
00000022	200902CV	
00000023	200902CV	
00000024	200902CV	
00000025	200902CV	
00000031	200902CV	
00000032	200902CV	
00000033	200902CV	
00000034	200902CV	
00000035	200902CV	
00000038	200902CV	
00000039	200902CV	
00000040	200902CV	
00000041	200902CV	
00000043	200902CV	
00000044	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 2 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000045	200902CV	
00000046	200902CV	
00000047	200902CV	
00000048	200902CV	
00000049	200902CV	
00000050	200902CV	
00000051	200902CV	
00000053	200902CV	
00000054	200902CV	
00000056	200902CV	
00000057	200902CV	
00000058	200902CV	
00000059	200902CV	
00000060	200902CV	
00000061	200902CV	
00000063	200902CV	
00000064	200902CV	
00000065	200902CV	
00000066	200902CV	
00000067	200902CV	
00000068	200902CV	
00000069	200902CV	
00000070	200902CV	
00000071	200902CV	
00000072	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 3 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000073	200902CV	
00000074	200902CV	
00000075	200902CV	
00000076	200902CV	
00000077	200902CV	
00000078	200902CV	
00000079	200902CV	
00000080	200902CV	
00000081	200902CV	
00000082	200902CV	
00000083	200902CV	
00000084	200902CV	
00000085	200902CV	
00000086	200902CV	
00000087	200902CV	
00000088	200902CV	
00000089	200902CV	
00000090	200902CV	
00000091	200902CV	
00000092	200902CV	
00000093	200902CV	
00000094	200902CV	
00000095	200902CV	
00000096	200902CV	
00000097	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 4 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000098	200902CV	
00000099	200902CV	
00000100	200902CV	
00000101	200902CV	
00000102	200902CV	
00000103	200902CV	
00000104	200902CV	
00000105	200902CV	
00000106	200902CV	
00000107	200902CV	
00000108	200902CV	
00000110	200902CV	
00000111	200902CV	
00000112	200902CV	
00000113	200902CV	
00000114	200902CV	
00000115	200902CV	
00000116	200902CV	
00000117	200902CV	
00000118	200902CV	
00000120	200902CV	
00000122	200902CV	
00000123	200902CV	
00000124	200902CV	
00000125	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 5 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000127	200902CV	
00000128	200902CV	
00000129	200902CV	
00000131	200902CV	
00000132	200902CV	
00000133	200902CV	
00000134	200902CV	
00000135	200902CV	
00000136	200902CV	
00000137	200902CV	
00000138	200902CV	
00000139	200902CV	
00000140	200902CV	
00000141	200902CV	
00000142	200902CV	
00000146	200902CV	
00000147	200902CV	
00000148	200902CV	
00000149	200902CV	
00000150	200902CV	
00000151	200902CV	
00000152	200902CV	
00000153	200902CV	
00000155	200902CV	
00000156	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 6 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000157	200902CV	
00000158	200902CV	
00000159	200902CV	
00000160	200902CV	
00000161	200902CV	
00000162	200902CV	
00000163	200902CV	
00000164	200902CV	
00000165	200902CV	
00000166	200902CV	
00000168	200902CV	
00000169	200902CV	
00000170	200902CV	
00000171	200902CV	
00000172	200902CV	
00000173	200902CV	
00000174	200902CV	
00000175	200902CV	
00000176	200902CV	
00000177	200902CV	
00000178	200902CV	
00000179	200902CV	
00000180	200902CV	
00000181	200902CV	
00000182	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 7 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000183	200902CV	
00000184	200902CV	
00000185	200902CV	
00000186	200902CV	
00000187	200902CV	
00000188	200902CV	
00000189	200902CV	
00000190	200902CV	
00000191	200902CV	
00000192	200902CV	
00000193	200902CV	
00000194	200902CV	
00000196	200902CV	
00000197	200902CV	
00000198	200902CV	
00000199	200902CV	
00000200	200902CV	
00000201	200902CV	
00000202	200902CV	
00000203	200902CV	
00000204	200902CV	
00000205	200902CV	
00000206	200902CV	
00000207	200902CV	
00000208	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 8 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000209	200902CV	
00000210	200902CV	
00000211	200902CV	
00000212	200902CV	
00000213	200902CV	
00000214	200902CV	
00000215	200902CV	
00000217	200902CV	
00000218	200902CV	
00000219	200902CV	
00000220	200902CV	
00000221	200902CV	
00000222	200902CV	
00000223	200902CV	
00000224	200902CV	
00000225	200902CV	
00000226	200902CV	
00000227	200902CV	
00000228	200902CV	
00000229	200902CV	
00000230	200902CV	
00000231	200902CV	
00000232	200902CV	
00000233	200902CV	
00000234	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 9 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000235	200902CV	
00000236	200902CV	
00000237	200902CV	
00000238	200902CV	
00000239	200902CV	
00000240	200902CV	
00000241	200902CV	
00000242	200902CV	
00000243	200902CV	
00000244	200902CV	
00000245	200902CV	
00000246	200902CV	
00000247	200902CV	
00000248	200902CV	
00000249	200902CV	
00000250	200902CV	
00000251	200902CV	
00000252	200902CV	
00000253	200902CV	
00000254	200902CV	
00000255	200902CV	
00000256	200902CV	
00000257	200902CV	
00000258	200902CV	
00000259	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 10 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000260	200902CV	
00000261	200902CV	
00000262	200902CV	
00000263	200902CV	
00000264	200902CV	
00000265	200902CV	
00000266	200902CV	
00000267	200902CV	
00000268	200902CV	
00000269	200902CV	
00000270	200902CV	
00000271	200902CV	
00000272	200902CV	
00000273	200902CV	
00000274	200902CV	
00000276	200902CV	
00000277	200902CV	
00000278	200902CV	
00000279	200902CV	
00000280	200902CV	
00000281	200902CV	
00000282	200902CV	
00000283	200902CV	
00000284	200902CV	
00000285	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 8-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 11 **of** 11

Material Description
Bentomat ST

Manufacturer's Roll Number	Lot Number	Defects/Remarks Conformance Test?
00000286	200902CV	
00000287	200902CV	
00000288	200902CV	
00000289	200902CV	
00000290	200902CV	
00000291	200902CV	
00000292	200902CV	
00000293	200902CV	
00000294	200902CV	
00000295	200902CV	
00000296	200902CV	
00000297	200902CV	
00000298	200902CV	
00000299	200902CV	
00000300	200902CV	
00000301	200902CV	
00000302	200902CV	
00000303	200902CV	
00000304	200902CV	
00000305	200902CV	
00000306	200902CV	
00000307	200902CV	
00000308	200902CV	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 23-Dec-08
S&ME Project No.: 1356-06-825
Project Name: Plant Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 1 **of** 6

Material Description
HDPE Geomembrane (60 mil, textured)

Manufacturer's Roll Number	Batch Number	Defects/Remarks Conformance Test?
246700	7181255	
246701	7181255	
246702	7181255	
246703	7181255	
246704	7181255	
246705	7181255	
246706	7181255	
246707	7181255	
246708	7181255	
246709	7181255	
246710	7181255	
246711	7181255	
246712	7181255	
246793	7181255	Sampled for conformance testing
246794	7181255	
246795	7181255	
246796	7181255	
246797	7181255	
246798	7181255	
246799	7181255	
247101	7181255	
247102	7181255	
247103	7181255	
247104	7181255	
247105	7181255	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 23-Dec-08
S&ME Project No.: 1356-06-825
Project Name: Plant Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 2 **of** 6

Material Description
HDPE Geomembrane (60 mil, textured)

Manufacturer's Roll Number	Batch Number	Defects/Remarks Conformance Test?
247106	7181255	
247107	7181250	
247108	7181250	
247109	7181250	
247110	7181250	
247111	7181250	
247112	7181250	Sampled for conformance testing
247113	7181250	
247114	7181250	
247115	7181250	
247116	7181250	
247117	7181250	
247118	7181250	
247219	7181250	
247220	7181250	
247221	7181250	
247222	7181250	
247223	7181250	
247224	7181250	
247225	7181250	
247226	7181250	
247227	7181250	
247228	7181250	
247229	7181250	
247230	7181250	

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 23-Dec-08
S&ME Project No.: 1356-06-825
Project Name: Plant Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 3 **of** 6

Material Description
HDPE Geomembrane (60 mil, textured)

Manufacturer's Roll Number	Batch Number	Defects/Remarks Conformance Test?
247231	7181250	
247232	7181250	
247233	7181250	
247234	7181250	
247235	7181250	
247236	7181250	
247237	7181250	
247238	7181250	
247339	7181250	
247340	7181250	
247341	7181250	
247342	7181250	
247343	7181250	
247344	7181250	
247345	7181250	
247346	7181250	
247347	7181250	
247348	7181250	
247349	7181250	
247350	7181250	
247351	7181250	
247352	7181250	
247353	7181250	
247354	7181250	
247355	7181250	Sampled for conformance testing

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 23-Dec-08
S&ME Project No.: 1356-06-825
Project Name: Plant Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 4 **of** 6

Material Description
HDPE Geomembrane (60 mil, textured)

Manufacturer's Roll Number	Batch Number	Defects/Remarks Conformance Test?
247456	7181250	
247457	7181250	
247458	7181250	
247459	7181250	
247460	7181250	
247461	7181250	
247462	7181250	
247463	7181250	
247464	7181250	
247465	7181250	Sampled for conformance testing
247466	7181250	
247467	7181250	
247568	7181250	
247569	7181250	
247570	7181250	
247571	7181254	
247572	7181254	
247573	7181254	
247574	7181254	
247575	7181254	
247576	7181254	
247577	7181254	
247578	7181254	
247579	7181254	
247580	7181254	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 23-Dec-08
S&ME Project No.: 1356-06-825
Project Name: Plant Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 5 **of** 6

Material Description
HDPE Geomembrane (60 mil, textured)

Manufacturer's Roll Number	Batch Number	Defects/Remarks Conformance Test?
247713	7181254	
247714	7181254	
247715	7181254	
247716	7181254	
247717	7181254	
247718	7181254	
247719	7181254	Sampled for conformance testing
247720	7181254	
247721	7181254	
247722	7181254	
248101	7181254	
248103	7181254	
248104	7181254	
248105	7181254	
248106	7181254	
248107	7181254	
248108	7181254	
248109	7181254	
248110	7181254	
248111	7181254	
248112	7181254	
248113	7181254	
248114	7181254	
248115	7181254	
248116	7181254	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 23-Dec-08
S&ME Project No.: 1356-06-825
Project Name: Plant Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 6 **of** 6

Material Description
HDPE Geomembrane (60 mil, textured)

Manufacturer's Roll Number	Batch Number	Defects/Remarks Conformance Test?
248117	7181254	
248218	7181254	
248219	7181254	
248220	7181254	
248221	7181254	
248222	7181254	
248223	7181254	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 1 **of** 10

Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710001	UTCX54535	
304710002	UTCX54535	
304710003	UTCX54535	
304710004	UTCX54535	
304710005	UTCX54535	
304710006	UTCX54535	
304710007	UTCX54535	
304710008	UTCX54535	
304710009	UTCX54535	
304710010	UTCX54535	
304710011	UTCX54535	
304710012	UTCX54535	
304710013	UTCX54535	
304710014	UTCX54535	
304710015	UTCX54535	
304710016	UTCX54535	
304710017	UTCX54535	
304710018	UTCX54535	
304710019	UTCX54535	
304710020	UTCX54535	
304710021	UTCX54535	
304710022	UTCX54535	
304710023	UTCX54535	
304710024	UTCX54535	
304710025	UTCX54535	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 2 **of** 10

Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710026	UTCX54535	
304710027	UTCX54535	
304710028	UTCX54535	
304710029	UTCX54535	
304710030	UTCX54535	
304710031	UTCX54535	
304710032	UTCX54535	
304710033	UTCX54535	
304710034	UTCX54535	
304710035	UTCX54535	
304710036	UTCX54535	
304710037	UTCX54535	
304710038	UTCX54535	
304710039	UTCX54535	
304710040	UTCX54535	
304710041	UTCX54535	
304710042	UTCX54535	
304710043	UTCX54535	
304710044	UTCX54535	
304710045	UTCX54535	
304710046	UTCX54535	
304710047	UTCX54535	
304710048	UTCX54535	
304710049	UTCX54535	
304710050	UTCX54535	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
Page: 3 **of** 10

Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710051	UTCX54535	
304710052	UTCX54535	
304710053	UTCX54535	
304710054	UTCX54535	
304710055	UTCX54535	
304710056	UTCX54535	
304710057	UTCX54535	
304710058	UTCX54535	
304710059	UTCX54535	
304710060	UTCX54535	
304710061	UTCX54535	
304710062	UTCX54535	
304710063	UTCX54535	
304710064	UTCX54535	
304710065	UTCX54535	
304710066	UTCX54535	
304710067	UTCX54535	
304710068	UTCX54535	
304710069	UTCX54535	
304710070	UTCX54535	
304710071	UTCX54535	
304710072	UTCX54535	
304710073	UTCX54535	
304710074	UTCX54535	
304710075	UTCX54535	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710076	UTCX54535	
304710077	UTCX54535	
304710078	UTCX54535	
304710079	UTCX54535	
304710080	UTCX54535	
304710081	UTCX54535	
304710082	UTCX54535	
304710083	UTCX54535	
304710084	UTCX54535	
304710085	UTCX54535	
304710086	UTCX54535	
304710087	UTCX54535	
304710088	UTCX54535	
304710089	UTCX54535	
304710090	UTCX54535	
304710091	UTCX54535	
304710092	UTCX54535	
304710093	UTCX54535	
304710094	UTCX54535	
304710095	UTCX54535	
304710096	UTCX54535	
304710097	UTCX54535	
304710098	UTCX54535	
304710099	UTCX54535	
304710100	UTCX54535	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710101	UTCX54535	
304710102	UTCX54535	
304710103	UTCX54535	
304710104	UTCX54535	
304710105	UTCX54535	
304710106	UTCX54535	
304710107	UTCX54535	
304710108	UTCX54535	
304710109	UTCX54535	
304710110	UTCX54535	
304710111	UTCX54535	
304710112	UTCX54535	
304710113	UTCX54535	
304710114	UTCX54535	
304710115	UTCX54535	
304710116	UTCX54535	
304710117	UTCX54535	
304710118	UTCX54535	
304710119	UTCX54535	
304710120	UTCX54535	
304710121	UTCX54535	
304710122	UTCX54535	
304710123	UTCX54535	
304710124	UTCX54535	
304710125	UTCX54535	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710126	UTCX54535	
304710127	UTCX54535	
304710128	UTCX54535	
304710129	UTCX54535	
304710130	UTCX54535	
304710131	UTCX54535	
304710132	UTCX54535	
304710133	UTCX54535	
304710134	UTCX54535	
304710135	UTCX54535	
304710136	UTCX54535	
304710137	UTCX54535	
304710138	UTCX54535	
304710139	UTCX54535	
304710140	UTCX54535	
304710141	UTCX54535	
304710142	UTCX54535	
304710143	UTCX54535	
304710144	UTCX54535	
304710145	UTCX54535	
304710146	UTCX54535	
304710147	UTCX54535	
304710148	UTCX54535	
304710149	UTCX54535	
304710150	UTCX54535	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710151	UTCX54535	
304710152	UTCX54535	
304710153	UTCX54535	
304710154	UTCX54535	
304710155	UTCX54535	
304710156	UTCX54535	
304710157	UTCX54535	
304710158	UTCX54535	
304710159	UTCX54535	
304710160	UTCX54535	
304710161	UTCX54535	
304710162	UTCX54535	
304710163	UTCX54535	
304710164	UTCX54535	
304710165	GPLX76646	
304710166	GPLX76646	
304710167	GPLX76646	
304710168	GPLX76646	
304710169	GPLX76646	
304710170	GPLX76646	
304710171	GPLX76646	
304710172	GPLX76646	
304710173	GPLX76646	
304710174	GPLX76646	
304710175	GPLX76646	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710176	GPLX76646	
304710177	GPLX76646	
304710178	GPLX76646	
304710179	GPLX76646	
304710180	GPLX76646	
304710181	GPLX76646	
304710182	GPLX76646	
304710183	GPLX76646	
304710184	GPLX76646	
304710185	GPLX76646	
304710186	GPLX76646	
304710187	GPLX76646	
304710188	GPLX76646	
304710189	GPLX76646	
304710190	GPLX76646	
304710191A	GPLX76646	
304710191B	GPLX76646	
304710192A	GPLX76646	
304710192B	GPLX76646	
304710193	GPLX76646	
304710194A	GPLX76646	
304710194B	GPLX76646	
304710195	GPLX76646	
304710196A	GPLX76646	
304710196B	GPLX76646	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710197	GPLX76646	
304710198	GPLX76646	
304710199	GPLX76646	
304710200	GPLX76646	
304710201	GPLX76646	
304710202	GPLX76646	
304710203	GPLX76646	
304710204	GPLX76646	
304710205	GPLX76646	
304710206	GPLX76646	
304710207	GPLX76646	
304710208	GPLX76646	
304710209	GPLX76646	
304710210	GPLX76646	
304710211	GPLX76646	
304710212	GPLX76646	
304710213	GPLX76646	
304710214	GPLX76646	
304710215	GPLX76646	
304710216	GPLX76646	
304710217	GPLX76646	
304710218	GPLX76646	
304710219	GPLX76646	
304710220	GPLX76646	
304710221	GPLX76646	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 7-Apr-09
S&ME Project No.: 1356-06-825
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Material Description
Skaps TN 300-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304710222	GPLX76777	
304710223	GPLX76777	
304710224	GPLX76777	
304710225	GPLX76777	
304710226	GPLX76777	
304710227	GPLX76777	
304710228	GPLX76777	
304710229	GPLX76777	
304710230	GPLX76777	
304710231	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 06-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720001	CEFX54562	
304720002	CEFX54562	
304720003	CEFX54562	
304720004	CEFX54562	
304720005	CEFX54562	
304720006	CEFX54562	
304720007	CEFX54562	
304720008	CEFX54562	
304720009	CEFX54562	
304720010	CEFX54562	
304720011	CEFX54562	
304720012	CEFX54562	
304720013	CEFX54562	
304720014	CEFX54562	
304720015	CEFX54562	
304720016	CEFX54562	
304720017	CEFX54562	
304720018	CEFX54562	
304720019	CEFX54562	
304720020	CEFX54562	
304720021	CEFX54562	
304720022	CEFX54562	
304720023	CEFX54562	
304720024	CEFX54562	
304720025	CEFX54562	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720026	CEFX54562	
304720027	CEFX54562	
304720028	CEFX54562	
304720029	CEFX54562	
304720030	CEFX54562	
304720031	CEFX54562	
304720032	CEFX54562	
304720033	CEFX54562	
304720034	CEFX54562	
304720035	CEFX54562	
304720036	CEFX54562	
304720037	CEFX54562	
304720038	CEFX54562	
304720039	CEFX54562	
304720040	CEFX54562	
304720041	CEFX54562	
304720042	CEFX54562	
304720043	CEFX54562	
304720044	CEFX54562	
304720045	CEFX54562	
304720046	CEFX54562	
304720047	CEFX54562	
304720048	CEFX54562	
304720049	CEFX54562	
304720050	CEFX54562	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720051	CEFX54562	
304720052	CEFX54562	
304720053	CEFX54562	
304720054	CEFX54562	
304720055	CEFX54562	
304720057	CEFX54562	
304720058	CEFX54562	
304720059	CEFX54562	
304720060	CEFX54562	
304720061	CEFX54562	
304720062	CEFX54562	
304720063	CEFX54562	
304720064	CEFX54562	
304720065	CEFX54562	
304720066	CEFX54562	
304720067	CEFX54562	
304720068	CEFX54562	
304720069	CEFX54562	
304720070	CEFX54562	
304720071	CEFX54562	
304720072	CEFX54562	
304720073	CEFX54562	
304720074	CEFX54562	
304720075	CEFX54562	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720076	CEFX54562	
304720077	CEFX54562	
304720078	CEFX54562	
304720079	CEFX54562	
304720080	CEFX54562	
304720081	CEFX54562	
304720082	CEFX54562	
304720083	CEFX54562	
304720084	CEFX54562	
304720085	CEFX54562	
304720086	CEFX54562	
304720087	CEFX54562	
304720088	CEFX54562	
304720089	CEFX54562	
304720090	CEFX54562	
304720091	CEFX54562	
304720092	CEFX54562	
304720093	CEFX54562	
304720094	CEFX54562	
304720095	CEFX54562	
304720096A	CEFX54562	
304720096B	CEFX54562	
304720097	CEFX54562	
304720098	CEFX54562	
304720099	CEFX54562	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720100	CEFX54562	
304720101	CEFX54562	
304720102	CEFX54562	
304720103	CEFX54562	
304720104	CEFX54562	
304720105	CEFX54562	
304720106A	CEFX54562	
304720106B	CEFX54562	
304720107	CEFX54562	
304720108	CEFX54562	
304720109	CEFX54562	
304720110	CEFX54562	
304720111	CEFX54562	
304720112	CEFX54562	
304720113	CEFX54562	
304720114	CEFX54562	
304720115	CEFX54562	
304720116	CEFX54562	
304720117	CEFX54562	
304720118	CEFX54562	
304720119	CEFX54562	
304720120	CEFX54562	
304720121	CEFX54562	
304720122	CEFX54562	
304720123	CEFX54562	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720124	CEFX54562	
304720125	CEFX54562	
304720126	CEFX54562	
304720127	CEFX54562	
304720128	CEFX54562	
304720129	CEFX54562	
304720130	CEFX54562	
304720131	CEFX54562	
304720132	CEFX54562	
304720133	CEFX54562	
304720134	CEFX54562	
304720135	CEFX54562	
304720136	CEFX54562	
304720137	CEFX54562	
304720138	CEFX54562	
304720139	CEFX54562	
304720140	GPLX76777	
304720141	GPLX76777	
304720142	GPLX76777	
304720143	GPLX76777	
304720144	GPLX76777	
304720145	GPLX76777	
304720147	GPLX76777	
304720148	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
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Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720149	GPLX76777	
304720150	GPLX76777	
304720151	GPLX76777	
304720152	GPLX76777	
304720153	GPLX76777	
304720154	GPLX76777	
304720155	GPLX76777	
304720156	GPLX76777	
304720157	GPLX76777	
304720158	GPLX76777	
304720159	GPLX76777	
304720160	GPLX76777	
304720161	GPLX76777	
304720162	GPLX76777	
304720163	GPLX76777	
304720164	GPLX76777	
304720165	GPLX76777	
304720166	GPLX76777	
304720167	GPLX76777	
304720168	GPLX76777	
304720169	GPLX76777	
304720170	GPLX76777	
304720171	GPLX76777	
304720172	GPLX76777	
304720173	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720174	GPLX76777	
304720175	GPLX76777	
304720176	GPLX76777	
304720177	GPLX76777	
304720178	GPLX76777	
304720179	GPLX76777	
304720180	GPLX76777	
304720181	GPLX76777	
304720182	GPLX76777	
304720183	GPLX76777	
304720184	GPLX76777	
304720185	GPLX76777	
304720186	GPLX76777	
304720187	GPLX76777	
304720188	GPLX76777	
304720190	GPLX76777	
304720191	GPLX76777	
304720192	GPLX76777	
304720193	GPLX76777	
304720194	GPLX76777	
304720195	GPLX76777	
304720196	GPLX76777	
304720197	GPLX76777	
304720198	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720199	GPLX76777	
304720200	GPLX76777	
304720201	GPLX76777	
304720202	GPLX76777	
304720203	GPLX76777	
304720204	GPLX76777	
304720205	GPLX76777	
304720206	GPLX76777	
304720207	GPLX76777	
304720208	GPLX76777	
304720209	GPLX76777	
304720210	GPLX76777	
304720211	GPLX76777	
304720212	GPLX76777	
304720213	GPLX76777	
304720214	GPLX76777	
304720215	GPLX76777	
304720216	GPLX76777	
304720217	GPLX76777	
304720218	GPLX76777	
304720219	GPLX76777	
304720220	GPLX76777	
304720221	GPLX76777	
304720222	GPLX76777	
304720223	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720224A	GPLX76777	
304720224B	GPLX76777	
304720225	GPLX76777	
304720226	GPLX76777	
304720227	GPLX76777	
304720228	GPLX76777	
304720229	GPLX76777	
304720230	GPLX76777	
304720231	GPLX76777	
304720232	GPLX76777	
304720233	GPLX76777	
304720234	GPLX76777	
304720235	GPLX76777	
304720236	GPLX76777	
304720237	GPLX76777	
304720238	GPLX76777	
304720239	GPLX76777	
304720240	GPLX76777	
304720241	GPLX76777	
304720242	GPLX76777	
304720243	GPLX76777	
304720244	GPLX76777	
304720245	GPLX76777	
304720246	GPLX76777	
304720247	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

FIELD INVENTORY CONTROL, STORAGE INSPECTION, AND CROSS REFERENCE ROLL NUMBERS

Date: 6-Apr-09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina
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Material Description
Skaps TN 350-mil Geocomposite

Manufacturer's Roll Number	Resin Lot Number	Defects/Remarks Conformance Test?
304720248	GPLX76777	
304720249	GPLX76777	
304720250	GPLX76777	
304720251	GPLX76777	
304720252	GPLX76777	
304720253	GPLX76777	
304720254	GPLX76777	
304720255	GPLX76777	
304720256A	GPLX76777	
304720256B	GPLX76777	
304720257	GPLX76777	
304720258	GPLX76777	
304720259	GPLX76777	
304720260	GPLX76777	
304720261	GPLX76777	
304720262A	GPLX76777	
304720262B	GPLX76777	
304720263	GPLX76777	

Notes:

CQA Personnel: Kyle Baucom

Bills of Lading/Shipment Lists

P A C K I N G L I S T

S AVENUE
ESTATES IL 60004

ORDER NO:.. 024675901
ORDER DATE: 11/19/2008
SHIP DATE:. 1/07/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000207	150.0	15.0	2250.0	2808.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000237	150.0	15.0	2250.0	2860.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000281	150.0	15.0	2250.0	2688.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000282	150.0	15.0	2250.0	2667.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000283	150.0	15.0	2250.0	2694.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000284	150.0	15.0	2250.0	2756.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000288	150.0	15.0	2250.0	2674.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000289	150.0	15.0	2250.0	2680.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000292	150.0	15.0	2250.0	2700.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000295	150.0	15.0	2250.0	2712.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000296	150.0	15.0	2250.0	2686.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000297	150.0	15.0	2250.0	2708.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000298	150.0	15.0	2250.0	2716.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000301	150.0	15.0	2250.0	2736.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000304	150.0	15.0	2250.0	2716.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000306	150.0	15.0	2250.0	2722.0
								========	
								36000.0	
CV-CG 50		50B	EA					50.0	2500.0
								========	
								50.0	

ORDER TOTALS..... ========
46023.0

TOTAL ITEMS..... 17

PACKING LIST

/CO
/70 FORBS AVENUE
OFFMAN ESTATES IL 60004

ORDER NO:.. 024675902
ORDER DATE: 11/19/2008
SHIP DATE:. 1/08/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000039	150.0	15.0	2250.0	2858.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000053	150.0	15.0	2250.0	2850.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000059	150.0	15.0	2250.0	2854.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000061	150.0	15.0	2250.0	2892.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000066	150.0	15.0	2250.0	2874.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000072	150.0	15.0	2250.0	2788.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000089	150.0	15.0	2250.0	2788.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000100	150.0	15.0	2250.0	2668.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000102	150.0	15.0	2250.0	2830.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000113	150.0	15.0	2250.0	2804.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000271	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000276	150.0	15.0	2250.0	2868.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000278	150.0	15.0	2250.0	2702.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000279	150.0	15.0	2250.0	2702.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000280	150.0	15.0	2250.0	2708.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000290	150.0	15.0	2250.0	2682.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000299	150.0	15.0	2250.0	2790.0
							========	
							38250.0	

========

ORDER TOTALS..... ========
47404.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

AVENUE
STATES IL 60004

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

ORDER NO:.. 024675903
ORDER DATE: 11/19/2008
SHIP DATE:. 1/08/2009

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000105	150.0	15.0	2250.0	2802.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000117	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000189	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000198	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000200	150.0	15.0	2250.0	2728.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000202	150.0	15.0	2250.0	2836.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000211	150.0	15.0	2250.0	2740.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000238	150.0	15.0	2250.0	2758.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000247	150.0	15.0	2250.0	2732.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000272	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000274	141.0	15.0	2115.0	2578.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000285	150.0	15.0	2250.0	2678.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000286	150.0	15.0	2250.0	2674.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000287	150.0	15.0	2250.0	2670.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000293	150.0	15.0	2250.0	2670.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000302	150.0	15.0	2250.0	2740.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000307	150.0	15.0	2250.0	2736.0
							========	
							38115.0	

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ORDER TOTALS..... 46392.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

FORBS AVENUE
FMAN ESTATES IL 60004

ORDER NO:.. 024675904
ORDER DATE: 11/19/2008
SHIP DATE:. 1/08/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000058	150.0	15.0	2250.0	2864.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000065	150.0	15.0	2250.0	2864.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000091	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000093	150.0	15.0	2250.0	2756.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000094	150.0	15.0	2250.0	2750.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000095	150.0	15.0	2250.0	2764.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000098	150.0	15.0	2250.0	2756.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000099	150.0	15.0	2250.0	2736.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000104	150.0	15.0	2250.0	2930.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000106	150.0	15.0	2250.0	2760.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000156	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000164	150.0	15.0	2250.0	2758.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000166	150.0	15.0	2250.0	2770.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000205	150.0	15.0	2250.0	2762.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000208	150.0	15.0	2250.0	2772.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000303	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000305	150.0	15.0	2250.0	2710.0
							========	
							38250.0	

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47258.0

ORDER TOTALS.....

TOTAL ITEMS..... 17

P A C K I N G L I S T

FORBS AVENUE
MAN ESTATES IL 60004

ORDER NO:.. 024675905
ORDER DATE: 11/19/2008
SHIP DATE:. 1/08/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000060	150.0	15.0	2250.0	2856.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000067	150.0	15.0	2250.0	2868.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000075	150.0	15.0	2250.0	2822.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000092	150.0	15.0	2250.0	2768.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000101	150.0	15.0	2250.0	2820.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000163	150.0	15.0	2250.0	2724.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000168	150.0	15.0	2250.0	2768.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000172	150.0	15.0	2250.0	2790.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000219	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000258	150.0	15.0	2250.0	2732.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000260	150.0	15.0	2250.0	2740.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000261	150.0	15.0	2250.0	2756.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000273	150.0	15.0	2250.0	2744.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000291	150.0	15.0	2250.0	2700.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000294	150.0	15.0	2250.0	2674.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000300	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000308	150.0	15.0	2250.0	2726.0
							========	
							38250.0	

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ORDER TOTALS..... 47028.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

ORBS AVENUE
AN ESTATES IL 60004

ORDER NO:.. 024675906
ORDER DATE: 11/19/2008
SHIP DATE:. 1/09/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000151	150.0	15.0	2250.0	2800.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000155	150.0	15.0	2250.0	2914.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000179	150.0	15.0	2250.0	2930.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000193	150.0	15.0	2250.0	2782.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000210	150.0	15.0	2250.0	2790.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000213	150.0	15.0	2250.0	2764.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000214	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000218	150.0	15.0	2250.0	2750.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000221	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000225	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000227	150.0	15.0	2250.0	2778.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000228	150.0	15.0	2250.0	2752.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000236	150.0	15.0	2250.0	2622.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000240	150.0	15.0	2250.0	2750.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000249	150.0	15.0	2250.0	2730.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000254	150.0	15.0	2250.0	2794.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000263	150.0	15.0	2250.0	2732.0
							========	
							38250.0	
							========	

ORDER TOTALS..... 47162.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

RBS AVENUE
AN ESTATES IL 60004

ORDER NO:.. 024675907
ORDER DATE: 11/19/2008
SHIP DATE:. 1/09/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000125	150.0	15.0	2250.0	2778.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000134	150.0	15.0	2250.0	2870.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000146	150.0	15.0	2250.0	2784.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000149	150.0	15.0	2250.0	2832.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000152	150.0	15.0	2250.0	2770.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000169	150.0	15.0	2250.0	2772.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000170	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000171	150.0	15.0	2250.0	2786.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000175	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000178	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000183	150.0	15.0	2250.0	2782.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000186	150.0	15.0	2250.0	2760.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000194	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000196	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000203	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000204	150.0	15.0	2250.0	2756.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000212	150.0	15.0	2250.0	2730.0
							========	
							38250.0	

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ORDER TOTALS..... 47220.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

B AVENUE
ESTATES IL 60004

ORDER NO:.. 024675908
ORDER DATE: 11/19/2008
SHIP DATE:. 1/09/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000038	150.0	15.0	2250.0	2850.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000057	150.0	15.0	2250.0	2966.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000064	150.0	15.0	2250.0	2856.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000068	150.0	15.0	2250.0	2846.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000083	150.0	15.0	2250.0	2750.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000084	150.0	15.0	2250.0	2788.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000086	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000088	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000158	150.0	15.0	2250.0	2728.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000184	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000209	150.0	15.0	2250.0	2762.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000223	150.0	15.0	2250.0	2710.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000242	150.0	15.0	2250.0	2740.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000243	150.0	15.0	2250.0	2732.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000251	150.0	15.0	2250.0	2772.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000253	150.0	15.0	2250.0	2782.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000270	150.0	15.0	2250.0	2728.0
								========	
								38250.0	
								========	

ORDER TOTALS..... 47318.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

ORBS AVENUE
AN ESTATES IL 60004

ORDER NO:.. 024675909
ORDER DATE: 11/19/2008
SHIP DATE:. 1/09/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000157	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000180	150.0	15.0	2250.0	2842.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000215	150.0	15.0	2250.0	2762.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000222	150.0	15.0	2250.0	2768.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000232	150.0	15.0	2250.0	2756.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000233	150.0	15.0	2250.0	2744.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000234	150.0	15.0	2250.0	2748.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000235	150.0	15.0	2250.0	2750.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000244	150.0	15.0	2250.0	2744.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000246	150.0	15.0	2250.0	2736.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000250	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000252	150.0	15.0	2250.0	2780.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000256	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000257	150.0	15.0	2250.0	2760.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000259	150.0	15.0	2250.0	2744.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000262	150.0	15.0	2250.0	2738.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000269	150.0	15.0	2250.0	2744.0
							========	
							38250.0	

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ORDER TOTALS..... 46874.0

TOTAL ITEMS..... 17

P A C K I N G

BS AVENUE
ESTATES IL 60004

ORDER NO:.. 024675910
ORDER DATE: 11/19/2008
SHIP DATE:. 1/09/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000147	150.0	15.0	2250.0	2810.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000148	150.0	15.0	2250.0	2758.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000160	150.0	15.0	2250.0	2744.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000161	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000162	150.0	15.0	2250.0	2742.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000165	150.0	15.0	2250.0	2814.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000174	150.0	15.0	2250.0	2788.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000176	150.0	15.0	2250.0	2798.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000177	150.0	15.0	2250.0	2768.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000181	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000182	150.0	15.0	2250.0	2772.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000185	150.0	15.0	2250.0	2770.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000187	150.0	15.0	2250.0	2752.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000188	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000190	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000197	150.0	15.0	2250.0	2766.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000199	150.0	15.0	2250.0	2778.0
							========	
							38250.0	

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47128.0

ORDER TOTALS.....

TOTAL ITEMS..... 17

P A C K I N G L I S T

CETCO
2870 FORBS AVENUE
HOFFMAN ESTATES IL 60004

ORDER NO:.. 024675911
ORDER DATE: 11/19/2008
SHIP DATE:. 1/12/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000090	150.0	15.0	2250.0	2764.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000120	150.0	15.0	2250.0	2886.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000124	150.0	15.0	2250.0	2800.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000133	150.0	15.0	2250.0	2994.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000142	150.0	15.0	2250.0	2790.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000153	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000159	150.0	15.0	2250.0	2740.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000173	150.0	15.0	2250.0	2768.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000220	150.0	15.0	2250.0	2780.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000230	150.0	15.0	2250.0	2744.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000231	150.0	15.0	2250.0	2764.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000239	150.0	15.0	2250.0	2758.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000248	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000255	150.0	15.0	2250.0	2752.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000264	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000265	150.0	15.0	2250.0	2730.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000267	150.0	15.0	2250.0	2768.0
							========	
							38250.0	

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ORDER TOTALS..... 47320.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

ETCO
2870 FORBS AVENUE
HOFFMAN ESTATES IL 60004

ORDER NO:.. 024675913
ORDER DATE: 11/19/2008
SHIP DATE:. 1/12/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000045	150.0	15.0	2250.0	2880.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000111	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000114	150.0	15.0	2250.0	2752.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000136	150.0	15.0	2250.0	2794.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000201	150.0	15.0	2250.0	2876.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000206	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000217	150.0	15.0	2250.0	2790.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000224	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000226	150.0	15.0	2250.0	2758.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000229	150.0	15.0	2250.0	2754.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000241	150.0	15.0	2250.0	2732.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000245	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000266	150.0	15.0	2250.0	2770.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000268	150.0	15.0	2250.0	2742.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000277	150.0	15.0	2250.0	2738.0
							========	
							33750.0	

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ORDER TOTALS..... 41608.0

TOTAL ITEMS..... 15

P A C K I N G L I S T

CETCO
2870 FORBS AVENUE
HOFFMAN ESTATES IL 60004

ORDER NO:.. 024675912
ORDER DATE: 11/19/2008
SHIP DATE:. 1/13/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000009	150.0	15.0	2250.0	2802.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000025	150.0	15.0	2250.0	2876.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000048	150.0	15.0	2250.0	2856.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000063	150.0	15.0	2250.0	2844.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000071	150.0	15.0	2250.0	2780.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000073	150.0	15.0	2250.0	2820.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000074	150.0	15.0	2250.0	2790.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000077	150.0	15.0	2250.0	2794.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000078	150.0	15.0	2250.0	2760.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000079	150.0	15.0	2250.0	2740.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000082	150.0	15.0	2250.0	2782.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000127	150.0	15.0	2250.0	2792.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000128	150.0	15.0	2250.0	2810.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000129	150.0	15.0	2250.0	2764.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000131	150.0	15.0	2250.0	2794.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000132	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000192	150.0	15.0	2250.0	2804.0
							========	
							38250.0	
							========	

ORDER TOTALS..... 47584.0

TOTAL ITEMS..... 17

P A C K I N G L I S T

AVENUE
STATES IL 60004

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

ORDER NO:.. 024675914
ORDER DATE: 11/19/2008
SHIP DATE:. 1/13/2009

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000020	150.0	15.0	2250.0	2850.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000032	150.0	15.0	2250.0	2846.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000044	150.0	15.0	2250.0	2846.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000046	150.0	15.0	2250.0	2872.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000047	150.0	15.0	2250.0	2844.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000076	150.0	15.0	2250.0	2852.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000081	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000087	150.0	15.0	2250.0	2758.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000115	150.0	15.0	2250.0	2772.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000116	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000118	150.0	15.0	2250.0	2784.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000122	150.0	15.0	2250.0	2794.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000138	150.0	15.0	2250.0	2786.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000139	150.0	15.0	2250.0	2790.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000140	150.0	15.0	2250.0	2784.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000141	150.0	15.0	2250.0	2784.0
							========	
							36000.0	

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44910.0

ORDER TOTALS.....

TOTAL ITEMS..... 16

P A C K I N G L I S T

S AVENUE
ESTATES IL 60004

ORDER NO:.. 024675915
ORDER DATE: 11/19/2008
SHIP DATE:. 1/13/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF 200902CV	00000001	150.0	15.0	2250.0	3158.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000016	150.0	15.0	2250.0	2884.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000031	150.0	15.0	2250.0	2878.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000043	150.0	15.0	2250.0	2828.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000049	150.0	15.0	2250.0	2882.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000054	100.0	15.0	1500.0	1914.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000069	150.0	15.0	2250.0	2808.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000070	150.0	15.0	2250.0	2796.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000096	150.0	15.0	2250.0	2780.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000110	150.0	15.0	2250.0	2778.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000112	150.0	15.0	2250.0	2776.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000123	150.0	15.0	2250.0	2792.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000135	150.0	15.0	2250.0	2832.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000137	150.0	15.0	2250.0	2798.0
CV-BENTOMAT ST		SFT	SF 200902CV	00000191	150.0	15.0	2250.0	2804.0
							========	
							33000.0	

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41708.0

ORDER TOTALS.....

TOTAL ITEMS..... 15

PACKING LIST

S AVENUE
ESTATES IL 60004

ORDER NO:.. 024675916
ORDER DATE: 11/19/2008
SHIP DATE:. 1/14/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000006	150.0	15.0	2250.0	2852.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000011	150.0	15.0	2250.0	2824.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000012	150.0	15.0	2250.0	2874.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000018	150.0	15.0	2250.0	2876.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000019	150.0	15.0	2250.0	2874.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000033	150.0	15.0	2250.0	2856.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000034	150.0	15.0	2250.0	2852.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000035	150.0	15.0	2250.0	2840.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000041	150.0	15.0	2250.0	2850.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000050	150.0	15.0	2250.0	2850.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000051	150.0	15.0	2250.0	2858.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000080	150.0	15.0	2250.0	2746.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000097	150.0	15.0	2250.0	2768.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000108	150.0	15.0	2250.0	2804.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000150	150.0	15.0	2250.0	2800.0
							========	
							33750.0	

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ORDER TOTALS..... ========
42524.0

TOTAL ITEMS..... 15

P A C K I N G L I S T

FORBS AVENUE
FMAN ESTATES IL 60004

ORDER NO:.. 024675917
ORDER DATE: 11/19/2008
SHIP DATE:. 1/16/2009

SOLD TO: 653
PLASTIC FUSION FABRICATORS
3455 STANWOOD BLVD.

HUNTSVILLE AL 35811

SHIP FROM:. CETCO CARTERSVILLE
FRT TERMS:. PREPAID & ADD
SHIP VIA:.. AMERICO LOGISTICS

SHIP TO: 62
ALLEN STEAM STATION LANDFILL
EARNHARDT GRADING, INC.
@ ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT NC 28012

PO: P12078

PRODUCT	SIZE	U/M	LOT #	ROLL#	LNGTH	WIDTH	SHIP QTY	WEIGHT
CV-BENTOMAT ST		SFT	SF	200902CV	00000010	150.0	15.0	2250.0	2828.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000022	150.0	15.0	2250.0	2830.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000023	150.0	15.0	2250.0	2842.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000024	150.0	15.0	2250.0	2852.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000040	150.0	15.0	2250.0	2862.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000056	150.0	15.0	2250.0	2966.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000085	150.0	15.0	2250.0	2774.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000103	150.0	15.0	2250.0	2726.0
CV-BENTOMAT ST		SFT	SF	200902CV	00000107	150.0	15.0	2250.0	2780.0
							========	
							20250.0	

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ORDER TOTALS..... 25460.0

TOTAL ITEMS..... 9

RAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

B/L NO. 021974

VIE OF CARRIER: TRUCK | CARRIER'S NO. | DATE 12/22/2008

EIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said carrier (the word carrier beir erstood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver her carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the da of, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. per hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditio hereby agreed to by the shipper and accepted for himself and his assigns.

EARNHARDT GRADING INC.

ROM: HIPPER (ORIGIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

TO: CONSIGNEE
ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012

STREET: DENNIS FOLTZ 704-361-7883

EMERGENCY RESPONSE PHONE NO.

DESTINATION | ZIP

LIVERING ARRIER: Stone | ROUTE | VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONL
122,445		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~41,080~~ 41340			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246796-08	9,419
L-HD-MSDS-060-BL	246797-08	9,419
L-HD-MSDS-060-BL	247107-08	9,419
L-HD-MSDS-060-BL	247108-08	9,419
L-HD-MSDS-060-BL	247110-08	9,419
L-HD-MSDS-060-BL	247113-08	9,419
L-HD-MSDS-060-BL	247114-08	9,419
L-HD-MSDS-060-BL	247115-08	9,419
L-HD-MSDS-060-BL	247116-08	9,419
L-HD-MSDS-060-BL	247118-08	9,419
L-HD-MSDS-060-BL	247226-08	9,419
L-HD-MSDS-060-BL	247575-08	9,419
L-HD-MSDS-060-BL	247578-08	9,419

Total Weight: ~~41,080~~ LB 41340
Total Units: 13 ~~K~~ 01/s-
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

410'x23' = 9430

9419x132 = 1,243,308 ft.² = 28.5 Ac.
÷2
621,654 = 14.27 Ac.

REMIT C.O.D. TO: AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE: [X] Prepaid [ ] Collect $

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

† Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. [ ] Check box if charges are

*This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Trans

Shipper, Per RHJ | Agent, Per

Permanent post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
... technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response

agru america, inc.

SHIPPING RELEASE FORM

Date : 12/22/08 BOL # : 21974 Document # : 11436 Customer : Plastic Fusion Destination : BNC

	ROLL #	EXTERNAL VISUAL OK ?		STRAPS OK ?		CORE OK ?		WELD ROD OK ?		COMMENTS (TO ALL NO REMARK
1	246796-08	Y	N	Y	N	Y	N	Y	N	
2	246797-08	Y	N	Y	N	Y	N	Y	N	
3	247107-08	Y	N	Y	N	Y	N	Y	N	
4	247108-08	Y	N	Y	N	Y	N	Y	N	
5	247110-08	Y	N	Y	N	Y	N	Y	N	
6	247113-08	Y	N	Y	N	Y	N	Y	N	
7	247114-08	Y	N	Y	N	Y	N	Y	N	
8	247115-08	Y	N	Y	N	Y	N	Y	N	
9	247116-08	Y	N	Y	N	Y	N	Y	N	
10	247118-08	Y	N	Y	N	Y	N	Y	N	
11	247226-08	Y	N	Y	N	Y	N	Y	N	
12	247575-08	Y	N	Y	N	Y	N	Y	N	
13	247578-08	Y	N	Y	N	Y	N	Y	N	
14		Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on rol

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary*) : *Secure Load; Lot # on BOL; Check type*

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?
yes no

SHIPREL.FRM
REV 01

Inspector : KC Loader : KC

STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

NAME OF CARRIER TRUCK | CARRIER'S NO. | DATE 12/22/2008 | B/L NO. 021973

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said carrier (the word carrier understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to del another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or said property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on th hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conc are hereby agreed to by the shipper and accepted for himself and his assigns.

FROM: SHIPPER (ORIGIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO: CONSIGNEE EARNHARDT GRADING INC.
ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET DENNIS FOLTZ 704-361-7883
DESTINATION ZIP

DELIVERING CARRIER Stone Construction | ROUTE | VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE OI
122,445		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~41,080~~ 41,496			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246705-08	9,419
L-HD-MSDS-060-BL	246706-08	9,419
L-HD-MSDS-060-BL	246707-08	9,419
L-HD-MSDS-060-BL	246708-08	9,419
L-HD-MSDS-060-BL	246709-08	9,419
L-HD-MSDS-060-BL	246710-08	9,419
L-HD-MSDS-060-BL	246711-08	9,419
L-HD-MSDS-060-BL	246712-08	9,419
L-HD-MSDS-060-BL	247101-08	9,419
L-HD-MSDS-060-BL	247109-08	9,419
L-HD-MSDS-060-BL	247111-08	9,419
L-HD-MSDS-060-BL	247219-08	9,419
L-HD-MSDS-060-BL	247458-08	9,419

Total Weight: ~~41,080~~ 41,496 LB
Total Units: 13 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

EMIT C.O.D. TO:
AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE ☑ Prepaid ☐ Collect $

f the shipment moves between two ports by a carrier by ater, the law requires that the bill of lading shall state hether it is "carrier's or shipper's weight".

Shipper's imprint in lieu of stamp; not a part of bill of lading pproved by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. ☐ Check box if charges are Col

his is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transporta

Shipper, Per PD Agent, Per

ermanent post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
hen transporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response ommunication Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

agru america, inc.

SHIPPING RELEASE FOR

Date : 12/22/08

BOL # :

Document # : 17436

Customer :

Destination : BNC

	ROLL #	EXTERNAL VISUAL OK?		STRAPS OK?		CORE OK?		WELD ROD OK?		COMMENTS (TO ALL NO REMAR	
1	246705-08	Y	N	Y	N	Y	N	Y	N		
2	246706-08	Y	N	Y	N	Y	N	Y	N		
3	246707-08	Y	N	Y	N	Y	N	Y	N		
4	246708-08	Y	N	Y	N	Y	N	Y	N		
5	246709-08	Y	N	Y	N	Y	N	Y	N		
6	246710-08	Y	N	Y	N	Y	N	Y	N		
7	246711-08	Y	N	Y	N	Y	N	Y	N		
8	246712-08	Y	N	Y	N	Y	N	Y	N		
9	247101-08	Y	N	Y	N	Y	N	Y	N		
10	247109-08	Y	N	Y	N	Y	N	Y	N		
11	247117-08	Y	N	Y	N	Y	N	Y	N		
12	247219-08	Y	N	Y	N	Y	N	Y	N		
13	247458-08	Y	N	Y	N	Y	N	Y	N		
14		Y	N	Y	N	Y	N	Y	N		
15		Y	N	Y	N	Y	N	Y	N		
16		Y	N	Y	N	Y	N	Y	N		
17		Y	N	Y	N	Y	N	Y	N		
18		Y	N	Y	N	Y	N	Y	N		
19		Y	N	Y	N	Y	N	Y	N		
20		Y	N	Y	N	Y	N	Y	N		

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary) : Secure Load; Lot # on BOL; Check type

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?

yes / no

SHIPREL.FRM
REV 01

Inspector : KP

Loader : KP

...eby agreed to by the shipper and accepted for himself and his assigns. ... the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and condit...

FROM: SHIPPER (ORIGIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO: EARNHARDT GRADING INC.
CONSIGNEE: ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET: DENNIS FOLTZ 704-361-7883
DESTINATION

ZIP

ORDERING CARRIER: Stone Construction

ROUTE

VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY)
113,026		MICRO SPIKE DOUBLE SIDED HD 60 MIL	37,920			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246700-08	9,419
L-HD-MSDS-060-BL	246701-08	9,419
L-HD-MSDS-060-BL	246798-08	9,419
L-HD-MSDS-060-BL	246799-08	9,419
L-HD-MSDS-060-BL	247105-08	9,419
L-HD-MSDS-060-BL	247112-08	9,419
L-HD-MSDS-060-BL	247117-08	9,419
L-HD-MSDS-060-BL	247340-08	9,419
L-HD-MSDS-060-BL	247342-08	9,419
L-HD-MSDS-060-BL	247343-08	9,419
L-HD-MSDS-060-BL	247569-08	9,419
L-HD-MSDS-060-BL	247719-08	9,419

Total Weight: 37,920 LB
Total Units: 12 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

COD TO:

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
☑ Prepaid
☐ Collect $

...nt moves between two ports by a carrier by ... requires that the bill of lading shall state ...rrier's or shipper's weight".

...rint in lieu of stamp; not a part of bill of lading ... Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. ☐ Check box if charges are Collect.

...ly that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation".

Shipper, Per

Agent, Per

...st office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
...ng hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

1

hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditic
by agreed to by the shipper and accepted for himself and his assigns.

M: PER GIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO: CONSIGNEE EARNHARDT GRADING INC.
ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET DENNIS FOLTZ 704-361-7883

DESTINATION ZIP

ERING ER Stone Construction

ROUTE

VEHICLE NUMBER

NO. KAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONL
31,863		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~44,240~~ 41,800			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246793-08	9 419
L-HD-MSDS-060-BL	246795-08	9 419
L-HD-MSDS-060-BL	247232-08	9 419
L-HD-MSDS-060-BL	247237-08	9 419
L-HD-MSDS-060-BL	247238-08	9 419
L-HD-MSDS-060-BL	247345-08	9 419
L-HD-MSDS-060-BL	247346-08	9 419
L-HD-MSDS-060-BL	247349-08	9 419
L-HD-MSDS-060-BL	247353-08	9 419
L-HD-MSDS-060-BL	247355-08	9 419
L-HD-MSDS-060-BL	247456-08	9 419
L-HD-MSDS-060-BL	247572-08	9 419
L-HD-MSDS-060-BL	247573-08	9 419
L-HD-MSDS-060-BL	247580-08	9 419

Total Weight: ~~44,240~~ 41,800 LB
Total Units: 44 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

Kevin Atkins

C.O.D. TO:

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
☑ Prepaid
☐ Collect $

pment moves between two ports by a carrier by law requires that the bill of lading shall state is "carrier's or shipper's weight".

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
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$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
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(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect.
☐ Check box if charges are Collec

imprint in lieu of stamp; not a part of bill of lading by the Interstate Commerce Commission.

certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportatio

Shipper, Per

Agent, Per

nt post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.

sporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response cation Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

12-19-08 BOL # : Document # : 114316 Customer : Plastic fusion Destination : Belmont NC

	ROLL #	EXTERNAL VISUAL OK?		STRAPS OK?		CORE OK?		WELD ROD OK?		COMMENTS (TO ALL NO REMARKS)
1	24723208	Y	N	Y	N	Y	N	Y	N	
2	24734908	Y	N	Y	N	Y	N	Y	N	
3	24735508	Y	N	Y	N	Y	N	Y	N	
4	246798-08	Y	N	Y	N	Y	N	Y	N	
5	247345-08	Y	N	Y	N	Y	N	Y	N	
6	247257-08	Y	N	Y	N	Y	N	Y	N	
7	247346-08	Y	N	Y	N	Y	N	Y	N	
8	247238-08	Y	N	Y	N	Y	N	Y	N	
9	246795-08	Y	N	Y	N	Y	N	Y	N	
10	247573-08	Y	N	Y	N	Y	N	Y	N	
11	247572-08	Y	N	Y	N	Y	N	Y	N	
12	247585-08	Y	N	Y	N	Y	N	Y	N	
13	247456-08	Y	N	Y	N	Y	N	Y	N	
14	247353-08	Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary) : Secure Load; Lot # on BOL; Check type

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

SHIPREL.FRM
REV 01

Digital photo taken of shipment ?
yes no

Inspector : R. Riley

Leader : Robert Green

ereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditio
y agreed to by the shipper and accepted for himself and his assigns.

EARNHARDT GRADING INC.

:
ER
IN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO:
CONSIGNEE: ALLEN STEAM STATION
STREET: 253 PLANT ALLEN ROAD
BELMONT, NC 28012
DENNIS FOLTZ 704-361-7883

DESTINATION

ZIP

RING
R: Sky

ROUTE

VEHICLE NUMBER

IO. CAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY
131,863		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~44,240~~ 44646			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	247103-08	9,419
L-HD-MSDS-060-BL	247347-08	9,419
L-HD-MSDS-060-BL	247348-08	9,419
L-HD-MSDS-060-BL	247351-08	9,419
L-HD-MSDS-060-BL	247354-08	9,419
L-HD-MSDS-060-BL	248105-08	9,419
L-HD-MSDS-060-BL	248106-08	9,419
L-HD-MSDS-060-BL	248114-08	9,419
L-HD-MSDS-060-BL	248115-08	9,419
L-HD-MSDS-060-BL	248116-08	9,419
L-HD-MSDS-060-BL	248117-08	9,419
L-HD-MSDS-060-BL	248218-08	9,419
L-HD-MSDS-060-BL	248222-08	9,419
L-HD-MSDS-060-BL	248223-08	9,419

Total Weight: ~~44,240~~ LB 44646
Total Units: 14 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

O.D. TO:
AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
[X] Prepaid
[ ] Collect $

ment moves between two ports by a carrier by law requires that the bill of lading shall state "carrier's or shipper's weight".

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$ per

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The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect.
[ ] Check box if charges are Colle

ertify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportatio

Shipper, Per RMG
Agent, Per

post office address of shipper
Page 1 of 1

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.

porting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response ition Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

1

12-14-08 21945 Document # : 11436 Customer : Plastic Fusion Destination : Belmont, NC

	ROLL #	EXTERNAL VISUAL OK ?		STRAPS OK ?		CORE OK ?		WELD ROD OK ?		COMMENTS (TO ALL NO REMARKS)
1	24821808	Y	N	Y	N	Y	N	Y	N	
2	24811708	Y	N	Y	N	Y	N	Y	N	
3	24811508	Y	N	Y	N	Y	N	Y	N	
4	24811608	Y	N	Y	N	Y	N	Y	N	
5	24811408	Y	N	Y	N	Y	N	Y	N	
6	247103-08	Y	N	Y	N	Y	N	Y	N	
7	24735108	Y	N	Y	N	Y	N	Y	N	
8	24734708	Y	N	Y	N	Y	N	Y	N	
9	24822208	Y	N	Y	N	Y	N	Y	N	
10	24734808	Y	N	Y	N	Y	N	Y	N	
11	24735408	Y	N	Y	N	Y	N	Y	N	
12	24822308	Y	N	Y	N	Y	N	Y	N	
13	24810608	Y	N	Y	N	Y	N	Y	N	
14	24810508	Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary) : Secure Load; Lot # on BOL; Check type

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ? yes no

SHIPREL.FRM
REV 01

Inspector : Loader :

by agreed to by the shipper and accepted for himself and his assigns.

/: PER GIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO: CONSIGNEE: EARNHARDT GRADING INC.
ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET: DENNIS FOLTZ 704-361-7883

DESTINATION

ZIP

RING ER: SAN

ROUTE

VEHICLE NUMBER

NO. KAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY)
131,863		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~44,240~~ 45024			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	247717-08	9,419
L-HD-MSDS-060-BL	247718-08	9,419
L-HD-MSDS-060-BL	247720-08	9,419
L-HD-MSDS-060-BL	247721-08	9,419
L-HD-MSDS-060-BL	247722-08	9,419
L-HD-MSDS-060-BL	248101-08	9,419
L-HD-MSDS-060-BL	248103-08	9,419
L-HD-MSDS-060-BL	248104-08	9,419
L-HD-MSDS-060-BL	248107-08	9,419
L-HD-MSDS-060-BL	248109-08	9,419
L-HD-MSDS-060-BL	248110-08	9,419
L-HD-MSDS-060-BL	248111-08	9,419
L-HD-MSDS-060-BL	248220-08	9,419
L-HD-MSDS-060-BL	248221-08	9,419

Total Weight: ~~44,240~~ LB 45024
Total Units: 14 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

C.O.D. TO:

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
[X] Prepaid
[ ] Collect $

pment moves between two ports by a carrier by law requires that the bill of lading shall state is "carrier's or shipper's weight".

s imprint in lieu of stamp; not a part of bill of lading by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. [ ] Check box if charges are Collec

certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportatio

Shipper, Per RAG Agent, Per

nt post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.

sporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response cation Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

1

12-19-08 | Lot #: 21946 | Document #: 11436 | Customer: Plastic Fusion | Destination: Belmont, NC

	ROLL #	EXTERNAL VISUAL OK?		STRAPS OK?		CORE OK?		WELD ROD OK?		COMMENTS (TO ALL NO REMARKS)
1	24771808	Y	N	Y	N	Y	N	Y	N	
2	24771708	Y	N	Y	N	Y	N	Y	N	
3	24810408	Y	N	Y	N	Y	N	Y	N	
4	24810308	Y	N	Y	N	Y	N	Y	N	
5	248221-08	Y	N	Y	N	Y	N	Y	N	
6	24822008	Y	N	Y	N	Y	N	Y	N	
7	24810108	Y	N	Y	N	Y	N	Y	N	
8	24810708	Y	N	Y	N	Y	N	Y	N	
9	24810908	Y	N	Y	N	Y	N	Y	N	
10	24811008	Y	N	Y	N	Y	N	Y	N	
11	24772208	Y	N	Y	N	Y	N	Y	N	
12	24811108	Y	N	Y	N	Y	N	Y	N	
13	24772108	Y	N	Y	N	Y	N	Y	N	
14	24772008	Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary) : *Secure Load; Lot # on BOL; Check type*

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?
yes no

SHIPREL.FRM
REV 01

Inspector: Lyllhonda L.

Loader: Fulton

hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditic
by agreed to by the shipper and accepted for himself and his assigns.

1:
PER
GIN

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

agru america

EMERGENCY RESPONSE PHONE NO.

TO: EARNHARDT GRADING INC.
CONSIGNEE ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET DENNIS FOLTZ 704-361-7883
DESTINATION
ZIP

RING
R Stone

ROUTE

VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY)
131,863		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~44,240~~ 44562			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246704-08	9,419
L-HD-MSDS-060-BL	247222-08	9,419
L-HD-MSDS-060-BL	247227-08	9,419
L-HD-MSDS-060-BL	247229-08	9,419
L-HD-MSDS-060-BL	247235-08	9,419
L-HD-MSDS-060-BL	247344-08	9,419
L-HD-MSDS-060-BL	247352-08	9,419
L-HD-MSDS-060-BL	247457-08	9,419
L-HD-MSDS-060-BL	247459-08	9,419
L-HD-MSDS-060-BL	247460-08	9,419
L-HD-MSDS-060-BL	247570-08	9,419
L-HD-MSDS-060-BL	247571-08	9,419
L-HD-MSDS-060-BL	247574-08	9,419
L-HD-MSDS-060-BL	247576-08	9,419

Total Weight: ~~44,240~~ LB 44562
Total Units: 14 ROLLS
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

O.D. TO:
AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
☐ Prepaid
☐ Collect $

nent moves between two ports by a carrier by aw requires that the bill of lading shall state "carrier's or shipper's weight".

nprint in lieu of stamp; not a part of bill of lading the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect.
☐ Check box if charges are Collec

rtify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportatio

Shipper, Per
Agent, Per

post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
orting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response ion Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

1

12-14-08 21949 77436 Customer: Plastic Fusion Destination: Belmont, NC

	ROLL #	EXTERNAL VISUAL OK?		STRAPS OK?		CORE OK?		WELD ROD OK?		COMMENTS (TO ALL NO REMARKS)
1	24734408	✓	N	✓	N	✓	N	Y	N	
2	24757408	✓	N	✓	N	✓	N	Y	N	
3	24757608	✓	N	✓	N	✓	N	Y	N	
4	24757008	✓	N	✓	N	✓	N	Y	N	
5	24746008	✓	N	✓	N	✓	N	Y	N	
6	24670408	✓	N	✓	N	✓	N	Y	N	
7	24722208	✓	N	✓	N	✓	N	Y	N	
8	24722908	✓	N	✓	N	✓	N	Y	N	
9	24757108	✓	N	✓	N	✓	N	Y	N	
10	24745708	✓	N	✓	N	✓	N	Y	N	
11	24745908	✓	N	✓	N	✓	N	Y	N	
12	24723508	✓	N	✓	N	✓	N	Y	N	
13	24722708	✓	N	✓	N	✓	N	Y	N	
14	24735208	✓	N	✓	N	✓	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary) : Secure Load; Lot # on BOL; Check type

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?

yes no

SHIPREL.FRM
REV 01

Inspector: Lynnette R.

Loader: Fulton

hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which covers the transportation of this shipment, and the said terms and conditi
by agreed to by the shipper and accepted for himself and his assigns.

M:
PER
GIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO: EARNHARDT GRADING INC.
CONSIGNEE ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET DENNIS FOLTZ 704-361-7883
DESTINATION
ZIP

RING
R Steve Cook
ROUTE
VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY)
31,863		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~44,240~~ 44,786			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	247104-08	9,419
L-HD-MSDS-060-BL	247106-08	9,419
L-HD-MSDS-060-BL	247108-08	9,419
L-HD-MSDS-060-BL	247113-08	9,419
L-HD-MSDS-060-BL	247114-08	9,419
L-HD-MSDS-060-BL	247115-08	9,419
L-HD-MSDS-060-BL	247116-08	9,419
L-HD-MSDS-060-BL	247223-08	9,419
L-HD-MSDS-060-BL	247228-08	9,419
L-HD-MSDS-060-BL	247230-08	9,419
L-HD-MSDS-060-BL	247579-08	9,419
L-HD-MSDS-060-BL	248112-08	9,419
L-HD-MSDS-060-BL	248113-08	9,419
L-HD-MSDS-060-BL	248219-08	9,419

Total Weight: ~~44,240~~ 44,786 LB
Total Units: 14 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

D. TO:
AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

nt moves between two ports by a carrier by / requires that the bill of lading shall state rrier's or shipper's weight".

rint in lieu of stamp; not a part of bill of lading Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

C.O.D. Amt $

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

C.O.D. FEE
☒ Prepaid
☐ Collect $

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. ☐ Check box if charges are Collect.

fy that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation".

st office address of Shipper Shipper, Per PD Agent, Per

Page 1 of 1

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
ing hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

1

Date : BOL # : Document # : Customer : Destination :

	ROLL #	EXTERNAL VISUAL OK ?		STRAPS OK ?		CORE OK ?		WELD-ROD OK ? *		COMMENTS (TO ALL NO REMARKS)
1	247164-08	Y	N	Y	N	Y	N	Y	N	
2	247106-08	Y	N	Y	N	Y	N	Y	N	
3	247108-08	Y	N	Y	N	Y	N	Y	N	
4	247113-08	Y	N	Y	N	Y	N	Y	N	
5	247114-08	Y	N	Y	N	Y	N	Y	N	
6	247115-08	Y	N	Y	N	Y	N	Y	N	
7	247116-08	Y	N	Y	N	Y	N	Y	N	
8	247223-08	Y	N	Y	N	Y	N	Y	N	
9	247228-08	Y	N	Y	N	Y	N	Y	N	
10	247230-08	Y	N	Y	N	Y	N	Y	N	
11	247579-08	Y	N	Y	N	Y	N	Y	N	
12	248112-08	Y	N	Y	N	Y	N	Y	N	
13	248113-08	Y	N	Y	N	Y	N	Y	N	
14	248219-08	Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*If neccessary) : Secure Load; Lot # on BOL; Check type

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?
yes no

SHIPREL.FRM
REV 01

Inspector : S. M.

Loader : S. Mashish

STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

NAME OF CARRIER TRUCK

CARRIER'S NO.

DATE 12/22/2008

B/L NO. 021981

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said carrier (the word carrier understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deli another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or a said property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and condi are hereby agreed to by the shipper and accepted for himself and his assigns.

FROM:
SHIPPER
(ORIGIN)

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

EMERGENCY RESPONSE PHONE NO.

TO: EARNHARDT GRADING INC.
CONSIGNEE ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET DENNIS FOLTZ 704-361-7883

DESTINATION

ZIP

DELIVERING CARRIER Steel Construction

ROUTE

VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONL
113,026		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~37,920~~ 38,352			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246703-08	9 419
L-HD-MSDS-060-BL	247231-08	9 419
L-HD-MSDS-060-BL	247339-08	9 419
L-HD-MSDS-060-BL	247341-08	9 419
L-HD-MSDS-060-BL	247350-08	9 419
L-HD-MSDS-060-BL	247461-08	9 419
L-HD-MSDS-060-BL	247462-08	9 419
L-HD-MSDS-060-BL	247463-08	9 419
L-HD-MSDS-060-BL	247464-08	9 419
L-HD-MSDS-060-BL	247466-08	9 419
L-HD-MSDS-060-BL	247467-08	9 419
L-HD-MSDS-060-BL	247568-08	9 419

Total Weight: ~~37,920~~ 38,352 LB
Total Units: 12 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

T C.O.D. TO:

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
☑ Prepaid
☐ Collect $

shipment moves between two ports by a carrier by the law requires that the bill of lading shall state r it is "carrier's or shipper's weight".

er's imprint in lieu of stamp; not a part of bill of lading d by the Interstate Commerce Commission.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. ☐ Check box if charges are Collect.

to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation*

Shipper, Per

Agent, Per

ent post office address

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.

ansporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response nication Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

agru america, inc.

SHIPPING RELEASE FORM

Date : 12-22-08

BOL # :

Document # : 11436

Customer : Plastic Fusion

Destination : Belmont, NC

	ROLL #	EXTERNAL VISUAL OK?		STRAPS OK?		CORE OK?		WELD ROD OK?		COMMENTS (TO ALL NO REMARKS)
1	246703.08	Y	N	Y	N	Y	N	Y	N	
2	247231.08	Y	N	Y	N	Y	N	Y	N	
3	247339.08	Y	N	Y	N	Y	N	Y	N	
4	247341.08	Y	N	Y	N	Y	N	Y	N	
5	247350.08	Y	N	Y	N	Y	N	Y	N	
6	247461.08	Y	N	Y	N	Y	N	Y	N	
7	247462.08	Y	N	Y	N	Y	N	Y	N	
8	247463.08 (247463)	Y	N	Y	N	Y	N	Y	N	12 rolls 60HD micro
9	247464.08	Y	N	Y	N	Y	N	Y	N	
10	247466.08	Y	N	Y	N	Y	N	Y	N	
11	247467.08	Y	N	Y	N	Y	N	Y	N	
12	247568.08	Y	N	Y	N	Y	N	Y	N	
13		Y	N	Y	N	Y	N	Y	N	
14		Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary) : Secure Load; Lot # on BOL; Check type

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?

yes no

SHIPREL.FRM
REV 01

Inspector : R.G

Loader : R.G

hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditic by agreed to by the shipper and accepted for himself and his assigns.

4: PER GIN:

AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

agru america

EMERGENCY RESPONSE PHONE NO.

TO: EARNHARDT GRADING INC.
CONSIGNEE ALLEN STEAM STATION
253 PLANT ALLEN ROAD
BELMONT, NC 28012
STREET DENNIS FOLTZ 704-361-7883
DESTINATION
ZIP

RING ER: Stark Construction
ROUTE
VEHICLE NUMBER

NO. KAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY)
13,026		MICRO SPIKE DOUBLE SIDED HD 60 MIL	~~37,920~~ 38,160			

Item Key	Roll Number	Quantity
L-HD-MSDS-060-BL	246702-08	9,419
L-HD-MSDS-060-BL	246794-08	9,419
L-HD-MSDS-060-BL	247102-08	9,419
L-HD-MSDS-060-BL	247220-08	9,419
L-HD-MSDS-060-BL	247221-08	9,419
L-HD-MSDS-060-BL	247224-08	9,419
L-HD-MSDS-060-BL	247225-08	9,419
L-HD-MSDS-060-BL	247233-08	9,419
L-HD-MSDS-060-BL	247234-08	9,419
L-HD-MSDS-060-BL	247236-08	9,419
L-HD-MSDS-060-BL	247465-08	9,419
L-HD-MSDS-060-BL	247577-08	9,419

Total Weight: ~~37,920~~ 38,160 LB
Total Units: 12 Rolls
Order No.: 11436 Order Date: 11/17/08 Request Date: 12/17/08
Location: GTOWN P.O. No.: P12077

C.O.D. TO:
AGRU/AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN, SOUTH CAROLINA 29440
(843) 546-0600

C.O.D. Amt $

C.O.D. FEE
☒ Prepaid
☐ Collect $

pment moves between two ports by a carrier by law requires that the bill of lading shall state is "carrier's or shipper's weight".

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

TOTAL CHARGES $

Freight charges are PREPAID unless marked collect. ☐ Check box if charges are Colle

imprint in lieu of stamp; not a part of bill of lading by the Interstate Commerce Commission.

certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportatic

Shipper, Per PD Vernace

Agent must detach and retain this Shipping Order and must sign the Original Bill of Lading

nt post office address of shipper

+ MARK WITH "X" TO DESIGNATE HAZARDOUS MATERIAL AS DEFINED IN TITLE 49 OF FEDERAL REGULATIONS.
nsporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Response ication Standard (HM-126C). Provide emergency response phone number in case of incident or accident.

2

12/22/08 11436 Destination : BNC

	ROLL #	EXTERNAL VISUAL OK?		STRAPS OK?		CORE OK?		WELD ROD OK?		COMMENTS (TO ALL NO REMARK)
1	246794-08	Y	N	Y	N	Y	N	Y	N	
2	246702-08	Y	N	Y	N	Y	N	Y	N	
3	247102-08	Y	N	Y	N	Y	N	Y	N	
4	247220-08	Y	N	Y	N	Y	N	Y	N	
5	247221-08	Y	N	Y	N	Y	N	Y	N	
6	247224-08	Y	N	Y	N	Y	N	Y	N	
7	247225-08	Y	N	Y	N	Y	N	Y	N	
8	247233-08	Y	N	Y	N	Y	N	Y	N	
9	247234-08	Y	N	Y	N	Y	N	Y	N	
10	247236-08	Y	N	Y	N	Y	N	Y	N	
11	247465-08	Y	N	Y	N	Y	N	Y	N	
12	247577-08	Y	N	Y	N	Y	N	Y	N	
13		Y	N	Y	N	Y	N	Y	N	
14		Y	N	Y	N	Y	N	Y	N	
15		Y	N	Y	N	Y	N	Y	N	
16		Y	N	Y	N	Y	N	Y	N	
17		Y	N	Y	N	Y	N	Y	N	
18		Y	N	Y	N	Y	N	Y	N	
19		Y	N	Y	N	Y	N	Y	N	
20		Y	N	Y	N	Y	N	Y	N	

External Visual Check : Clean Roll; Damage (Holes, Tears); Telescoping; Liner Defects (Voids, Bug Marks, etc.); Legible markings on roll

Strap Check : 6 foot spacing; Check for wear, cuts

Core Check : Check for cracks, defects

Weld Rod Check (*if neccessary*) : *Secure Load; Lot # on BOL; Check type*

Comments : Note comments for ANY & ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment ?
yes no

SHIPREL.FRM
REV 01

Inspector : KF

Loader : Kf

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

(1)

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12582

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/13/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720004	2240	17	304720102	2450
2	304720009	1960	18	304720105	2450
3	304720016	2240	19	304720106A	1400
4	304720021	2660	20	304720106B	1400
5	304720041	2240	21	304720111	2450
6	304720042	2450	22	304720114	2450
7	304720069	2450	23	304720136	1820
8	304720071	2450	24	304720138	2450
9	304720072	2450	25	304720140	2450
10	304720075	2450	26	304720144	2450
11	304720084	2450	27	304720203	2450
12	304720087	2450			
13	304720088	2450			
14	304720089	2450			
15	304720098	2450			
16	304720100	2450			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 62,510
Total Weight: 34,373

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker Trinity
DATE: 1/13/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

75'x14'=2450

258 rolls

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12583

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/13/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720063	2240	17	304720160	2450
2	304720073	2450	18	304720162	2450
3	304720076	2100	19	304720183	2450
4	304720079	1400	20	304720184	2450
5	304720096A	1400	21	304720185	2450
6	304720096B	1400	22	304720187	2450
7	304720104	2450	23	304720188	2450
8	304720107	2450	24	304720190	1820
9	304720108	2450	25	304720191	2450
10	304720109	2450	26	304720192	2100
11	304720124	2450	27	304720195	2100
12	304720125	2450			
13	304720150	2100			
14	304720151	2450			
15	304720158	2450			
16	304720159	2450			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 60,760
Total Weight: 33,969

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:

Truck Container #:
Seal #:

Trucking Co.'s Phone #:
Broker Loadpro
DATE: 1/13/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

ARL- 802- 8330-M

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12585

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/13/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720031	1820	17	304720167	2450
2	304720043	1540	18	304720168	2450
3	304720049	2100	19	304720178	2450
4	304720058	2240	20	304720179	2450
5	304720068	1540	21	304720180	2450
6	304720103	2380	22	304720182	2450
7	304720110	2450	23	304720194	2100
8	304720113	2450	24	304720196	2450
9	304720142	2450	25	304720198	2450
10	304720145	1400	26	304720202	2450
11	304720146	1820	27	304720204	2450
12	304720155	2450			
13	304720156	2450			
14	304720163	2450			
15	304720164	2450			
16	304720165	2450			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 61,040
Total Weight: 34,110

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker Trinity
DATE: 1/13/2009

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

ARL-802-8330-M

Shipper's # 12586

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/13/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720001	2450	17	304720094	2450
2	304720002	2450	18	304720095	2450
3	304720003	2450	19	304720097	2450
4	304720005	2450	20	304720099	1820
5	304720024	2240	21	304720101	1540
6	304720026	2450	22	304720119	2450
7	304720033	2450	23	304720123	2450
8	304720034	2450	24	304720126	2450
9	304720037	2380	25	304720129	2450
10	304720038	2380	26	304720134	1960
11	304720040	2240	27	304720135	1960
12	304720044	2450			
13	304720045	2450			
14	304720090	2450			
15	304720091	2100			
16	304720093	2450			

Please Collect
2 - Bags of Ties
From the Driver

Driver Sign Here If you received 2 bags
X Sharon Moore

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#: 14445

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 62,720
Total Weight: 34,886

Deliver by: **7:30 am to 4:00 pm**
Driver's Name: Sharon Moore
Driver's Sign: Sharon Moore
Driver's Cell Phone #: 843-224-8425
Trucking Co.: Senn Freight
Trucking Co.'s Phone #: 1-800-349-9611
Broker Loadpro
DATE: 1/13/2009

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occuring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

ARL-802-8330-M

Shipper's # 12588

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/13/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY
Product Code: TN 350-2-8

No	Roll#	Sq. Ft.
1	304720212	1680
2	304720214	2450
3	304720215	1400
4	304720216	2450
5	304720217	2240
6	304720218	2240
7	304720220	1960
8	304720221	2450
9	304720222	2450
10	304720223	2450
11	304720225	2450
12	304720226	1820
13	304720238	2450
14	304720240	2240
15	304720241	2450

Please Collect
1 - Bag of Ties
From the Driver
Driver Sign Here if you received 1 bag
If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:
Sign:
BOL#:

Driver Requirements
1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

otal Rolls: 15
otal Sq. feet 33,180
otal Weight: 19,568

uck Container #:
al #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker
DATE:

N HERE FOR SHIPPER
PPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Mason Dixon
1/13/2009

ved at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, slined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the ty) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as d by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official n, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor hipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage iners, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries, o the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this , and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12589

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/14/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720006	2450	17	304720081	2450
2	304720007	2450	18	304720082	2450
3	304720008	2450	19	304720083	2450
4	304720010	2450	20	304720085	1540
5	304720011	2450	21	304720121	2450
6	304720030	2450	22	304720161	1960
7	304720032	2450	23	304720171	2030
8	304720035	2450	24	304720186	2310
9	304720036	2450	25	304720219	2380
10	304720046	2450	26	304720224A	1260
11	304720047	2450	27	304720224B	1260
12	304720048	2100			
13	304720065	2450			
14	304720066	2450			
15	304720067	2450			
16	304720070	2450			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here if you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#: 1 / 11 5 /

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 61,390
Total Weight: 33,099

Truck Container #: Michael Barnett
Seal #:

Deliver by: **~~7:30~~ am to ~~4:00~~ pm**
Driver's Name: Tom
Driver's Sign: Tom
Driver's Cell Phone #: 803-887-6747
Trucking Co.: Tom
Trucking Co.'s Phone #: 414-778-7010
Broker: Lonestar
DATE: 1/14/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage, to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12590

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/14/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720039	1820	17	304720153	2450
2	304720053	1820	18	304720154	2450
3	304720112	2100	19	304720169	2450
4	304720115	2450	20	304720170	2450
5	304720116	2450	21	304720172	2450
6	304720117	2240	22	304720173	2380
7	304720118	2450	23	304720174	2450
8	304720120	2450	24	304720175	2450
9	304720127	2450	25	304720177	2450
10	304720130	2450	26	304720199	2450
11	304720131	1540	27	304720200	2450
12	304720132	2450			
13	304720137	2450			
14	304720139	1820			
15	304720147	2450			
16	304720149	2450			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 62,720
Total Weight: 34,093

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker: Landstar
DATE: 1/14/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

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SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12591

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/14/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720166	2170	17	304720233	2450
2	304720176	2450	18	304720234	2660
3	304720181	2450	19	304720235	2450
4	304720197	1820	20	304720236	1540
5	304720205	2450	21	304720237	2450
6	304720206	1400	22	304720244	2450
7	304720207	2450	23	304720245	2450
8	304720208	2450	24	304720246	2450
9	304720209	2450	25	304720247	2450
10	304720210	2450	26	304720248	2450
11	304720211	2450	27	304720249	2450
12	304720227	2450			
13	304720228	2450			
14	304720230	2450			
15	304720231	1540			
16	304720232	2450			

Please Collect
2 - Bags of Ties
From the Driver

Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 62,580
Total Weight: 34,782

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker RMA
DATE: 1/14/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper. Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12592

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/14/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720029	2450	17	304720250	2450
2	304720050	2450	18	304720251	2450
3	304720051	2450	19	304720252	2450
4	304720061	2450	20	304720253	2450
5	304720062	2450	21	304720254	2450
6	304720064	2450	22	304720255	2450
7	304720074	2450	23	304720257	2100
8	304720078	2450	24	304720258	1960
9	304720080	2450	25	304720259	1960
10	304720092	2450	26	304720262A	1260
11	304720201	2100	27	304720262B	1120
12	304720213	1890			
13	304720229	2380			
14	304720239	1960			
15	304720242	2240			
16	304720243	2450			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 60,620
Total Weight: 32,748

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker: Landstar
DATE: 1/14/2009

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

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SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12593

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/14/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY
Product Code: TN 350-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304720012	2450	17	304720059	2450
2	304720013	2450	18	304720060	2450
3	304720014	2450	19	304720077	2450
4	304720017	2450	20	304720086	2450
5	304720018	2450	21	304720122	2520
6	304720019	2450	22	304720128	2450
7	304720020	2450	23	304720133	1680
8	304720022	2450	24	304720141	1820
9	304720023	2450	25	304720143	2450
10	304720025	2450	26	304720148	2100
11	304720027	2450	27	304720152	2100
12	304720028	2100			
13	304720052	2450			
14	304720054	2450			
15	304720055	2450			
16	304720057	2240			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:
Sign:
BOL#:

Driver Requirements
1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 63,560
Total Weight: 35,241

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Broker: Lonestar
DATE: 1/14/2009

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

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SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12594

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710082	2800	17	304710098	2800
2	304710083	2800	18	304710101	2660
3	304710084	2800	19	304710102	2730
4	304710085	2800			
5	304710086	2800			
6	304710087	2800			
7	304710088	2800			
8	304710089	2520			
9	304710090	2660			
10	304710091	2730			
11	304710092	2800			
12	304710093	2800			
13	304710094	2800			
14	304710095	2800			
15	304710096	2800			
16	304710097	2800			

Product Code: TN 350-2-8

No	Roll#	Sq. Ft.
1	304720015	2450
2	304720157	2100
3	304720193	1400
4	304720256A	1400
5	304720256B	1400
6	304720260	2450
7	304720261	1820
8	304720263	1260

Product Code: TN 350-2-8
Total Rolls: 8
Total Sq. feet 14,280
Total Weight: 7,178

Product Code: TN 300-2-8
Total Rolls: 19
Total Sq. feet 52,500
Total Weight: 21,598

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements
1) For Monday delivery driver must call on Friday
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Truck Container #:
Seal #:

Deliver by: 7:30 am to 4:00 pm
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker Packard
DATE 1/15/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries

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SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12595

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710001	2800	17	304710017	2800
2	304710002	2800	18	304710018	2800
3	304710003	2100	19	304710019	2800
4	304710004	2660	20	304710020	2800
5	304710005	2730	21	304710021	2800
6	304710006	2800	22	304710022	2800
7	304710007	2800	23	304710023	2800
8	304710008	2800	24	304710024	2730
9	304710009	2800	25	304710025	2030
10	304710010	2800	26	304710026	1680
11	304710011	2800	27	304710027	1960
12	304710012	2800			
13	304710013	2800			
14	304710014	2800			
15	304710015	2800			
16	304710016	2800			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 71,890
Total Weight: 28,384

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker CRST
DATE: 1/15/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

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SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12597

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY
Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710028	2800	17	304710044	2800
2	304710029	2800	18	304710045	2800
3	304710030	2800	19	304710046	2800
4	304710031	2800	20	304710047	2730
5	304710032	2800	21	304710048	2730
6	304710033	2800	22	304710049	2730
7	304710034	2800	23	304710050	2800
8	304710035	2800	24	304710051	2800
9	304710036	2730	25	304710052	2660
10	304710037	2730	26	304710053	2800
11	304710038	2660	27	304710054	2800
12	304710039	2520			
13	304710040	2800			
14	304710041	2800			
15	304710042	2800			
16	304710043	2800			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#: 11465

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

otal Rolls: 27
otal Sq. feet 74,690
otal Weight: 29,940

ock Container #:
al #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker CRST
DATE: 1/15/2009

N HERE FOR SHIPPER
PPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

ved at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, stined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the ty) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as ed by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official m, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage tiners, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this d, and the said terms and conditions are hereby agreed and accepted for himself and his assigns

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12598

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710055	2800	17	304710071	2800
2	304710056	2800	18	304710072	2800
3	304710057	2800	19	304710073	2800
4	304710058	2800	20	304710074	2800
5	304710059	2800	21	304710075	2800
6	304710060	2800	22	304710076	2800
7	304710061	2800	23	304710077	2660
8	304710062	2800	24	304710078	2800
9	304710063	2800	25	304710079	2800
10	304710064	2800	26	304710080	2800
11	304710065	2520	27	304710081	2800
12	304710066	2660			
13	304710067	2800			
14	304710068	2800			
15	304710069	2800			
16	304710070	2800			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 75,040
Total Weight: 29,884

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker RT
DATE: 1/15/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12599

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710123	1820	17	304710196B	1400
2	304710124	2380	18	304710197	2800
3	304710133	2660	19	304710198	2800
4	304710145	2800	20	304710199	2800
5	304710154	2800	21	304710200	2800
6	304710155	2800	22	304710201	2100
7	304710160	2800	23	304710203	2800
8	304710163	1680	24	304710205	2800
9	304710164	1960	25	304710212	2800
10	304710168	2800	26	304710214	2800
11	304710169	2800	27	304710221	2800
12	304710173	2800			
13	304710176	1750			
14	304710179	2800			
15	304710191A	1680			
16	304710196A	1400			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here if you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 66,430
Total Weight: 30,567

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Broker: Mason Dixon
DATE: 1/15/2009

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12600

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710112	2100	17	304710146	2380
2	304710114	2380	18	304710147	2660
3	304710118	1960	19	304710149	1960
4	304710125	1960	20	304710150	1960
5	304710126	2240	21	304710152	2800
6	304710129	2520	22	304710175	2800
7	304710130	2450	23	304710178	1680
8	304710132	2380	24	304710183	2800
9	304710134	2800	25	304710188	2800
10	304710136	2800	26	304710190	2800
11	304710137	2800	27	304710218	2800
12	304710138	2800			
13	304710139	3220			
14	304710140	2800			
15	304710142	2800			
16	304710143	2800			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 68,250
Total Weight: 31,658

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker RT
DATE 1/15/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, nd destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the roperty) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination nd as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted hGrein is Skaps Industries as dicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation isting between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the ervice to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official outhern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor arrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

bject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this pment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

200'x14'=2800

216 rolls

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12601

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009

Cust. P.O. # P12079

Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710110	2380	17	304710192B	1400
2	304710128	2800	18	304710193	2800
3	304710135	2800	19	304710195	2800
4	304710153	1960	20	304710204	2800
5	304710156	2100	21	304710209	2800
6	304710157	2100	22	304710211	2800
7	304710167	1960	23	304710213	2800
8	304710170	2800	24	304710215	2800
9	304710171	2800	25	304710216	2450
10	304710177	2800	26	304710217	2800
11	304710180	2800	27	304710219	2800
12	304710181	2800			
13	304710184	2800			
14	304710185	2800			
15	304710186	2380			
16	304710192A	1540			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 68,670
Total Weight: 31,724

Truck Container #:
Seal #:

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:
Broker Packard
DATE: 1/15/2009

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12602

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/15/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710105	2520	17	304710172	2660
2	304710107	2800	18	304710182	2450
3	304710108	2660	19	304710187	2310
4	304710109	2660	20	304710191B	1540
5	304710113	2800	21	304710194A	1820
6	304710116	2590	22	304710202	1680
7	304710120	2660	23	304710206	2100
8	304710121	2660	24	304710207	1680
9	304710127	2380	25	304710208	2800
10	304710131	2660	26	304710210	1400
11	304710141	1680	27	304710220	2800
12	304710144	2800			
13	304710148	1960			
14	304710151	1960			
15	304710158	1680			
16	304710165	1820			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 61,530
Total Weight: 29,569

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Broker: Mason Dixon
DATE: 1/16/2009

Received at Commerce GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either, (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper. Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns

SHIPPING ORDER-PACKING LIST-ORIGINAL-NOT NEGOTIABLE

SKAPS Industries

571 Industrial Parkway
Commerce, GA 30529
Ph: 706-336-7000 Fax: 706-336-7007
www.skaps.com e-mail: info@skaps.com

Shipper's # 12608

Job Name: Plastic Fusion Fabricators - Duke Energy Allen Steam Station
Address: Earnhardt Grading, Inc @ Allen Steam Station
253 Plant Allen Road
City, State, Zip : Belmont, NC 28012
Contact: Dennis Foltz
Phone: 704-361-7883

Date Shipped: 1/19/2009
Cust. P.O. # P12079
Job # 3047

DRIVER MUST CALL 24 HOURS PRIOR TO DELIVERY

Product Code: TN 300-2-8

No	Roll#	Sq. Ft.	No	Roll#	Sq. Ft.
1	304710099	2800	17	304710194B	1400
2	304710100	2800	18	304710222	2800
3	304710103	1960	19	304710223	2800
4	304710104	2660	20	304710224	2800
5	304710106	3080	21	304710225	2800
6	304710111	2660	22	304710226	2800
7	304710115	2520	23	304710227	2800
8	304710117	2240	24	304710228	2800
9	304710119	2660	25	304710229	2800
10	304710122	2520	26	304710230	2800
11	304710159	2240	27	304710231	1750
12	304710161	2380			
13	304710162	2800			
14	304710166	2450			
15	304710174	2380			
16	304710189	2100			

Please Collect
2 - Bags of Ties
From the Driver
Driver Sign Here If you received 2 bags

If ties are not collected from driver, SKAPS will not assume responsibility.

Received by:

Sign:

BOL#:

Driver Requirements

1) For Monday delivery driver must call on Friday.
2) Driver must call 706-336-7000 when unloaded.
3) Driver must call and advise on any delay in transit.
4) A copy of this packing slip must accompany Freight invoice. Failure to do this will result in delayed payments.

Total Rolls: 27
Total Sq. feet 68,600
Total Weight: 31,134

Deliver by: **7:30 am to 4:00 pm**
Driver's Name:
Driver's Sign:
Driver's Cell Phone #:
Trucking Co.:
Trucking Co.'s Phone #:

Truck Container #:
Seal #:

SIGN HERE FOR SHIPPER
SHIPPER ADDRESS: 571 INDUSTRIAL PKWY.
COMMERCE, GA 30529

Broker Landstar
DATE: 1/19/2009

Received at Commerce, GA from Skaps Industries the property described above, in apparent good order except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated above, which said Carrier (the word "Carrier" being understood throughout this Shipping Order as meaning the person or corporation in possession of the property) agrees to carry to the place of delivery at said destination. It is mutually agreed as to each Carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service performed hereunder shall be subject to either: (a) if the shipper noted herein is Skaps Industries as indicated by the designation of the "Shipper" to be Skaps Industries, then the Shipper and Carrier are subject to the terms and conditions contained in the Contract for Truck Transportation existing between the parties or (b) if the Shipper noted herein is not Skaps Industries then Skaps Industries is acting solely as the agent for the denoted Shipper, and thus every aspect of the service to be performed hereunder between the Shipper and the Carrier shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern, Western, and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. When acting in the capacity of an agent for a Shipper in placing the material in transit on behalf of a Shipper, Skaps Industries accepts no liability for loss of cargo, damage to containers, or any other consequences occurring during transportation. Carrier having agreed that the transportation arrangement was initiated by the Shipper and not by Skaps Industries.

Subject to the above terms and conditions as to which party is the Shipper, Shipper hereby certifies that he is familiar with the terms and conditions that govern the transportation of this shipment, and the said terms and conditions are hereby agreed and accepted for himself and his assigns.

APPENDIX II – GEOSYNTHETICS
Section 2 – Geosynthetic Clay Liner (GCL)

Subgrade Certification

Geosynthetic Clay Liner (GCL) Subgrade Certification

S&ME

SUBGRADE CERTIFICATION

Material: CETCO Bentomat ST ~~60 mil Textured HDPE Geomembrane~~
Manufacurer: ~~Agru America~~ CETCO
Installer: Plastic Fusion

Date: 4.8.09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina

P- 1 **through P-** 22

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

NE inside corner of cell too rough

CORRECTIVE ACTION:

smoothed out inside corner w/ rubber-tired forklift and shovels.

Date Corrective Action was Implemented: 4.8.09

Date Subgrade was Accepted by Installer: 4.8.09

Al Cordell
Installer's Personnel

CQA Personnel

SUBGRADE CERTIFICATION

Material: CETCO Bentomat ST ~~60 mil textured HDPE Geomembrane~~
Manufacurer: ~~Agru America~~ CETCO
Installer: Plastic Fusion

Date: 4.9.09
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina

P- 23 **through P-** 42

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

CORRECTIVE ACTION:

Date Corrective Action was Implemented:

Date Subgrade was Accepted by Installer: 4.9.09

Installer's Personnel

CQA Personnel

S&ME

SUBGRADE CERTIFICATION

Date: 4-10-09

Material: Bentomat ST

Manufacurer: CETCO

Installer: Plastic Fusion

S&ME Project No.: 1356-06-825

Project Name: Allen RAB Ash Landfill

Project Location: Belmont, North Carolina

P- 43 through P- 61

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

CORRECTIVE ACTION:

Date Corrective Action was Implemented:

Date Subgrade was Accepted by Installer: 4-10-09

Installer's Personnel

CQA Personnel

S&ME

SUBGRADE CERTIFICATION

Date: 4-16-09

Material: Bentomat ST
Manufacurer: CETCO
Installer: Plastic Fusion

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina

P- 62 through P- 88

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

Some wet areas in LDS laterals, ~4 areas total, widths each of 10-15 feet.

CORRECTIVE ACTION:

removed wet material, replaced with dryer material, rolled with smooth-drum roller, and verified elevation with GPS survey.

Date Corrective Action was Implemented: 4-16-09

Date Subgrade was Accepted by Installer: 4-16-09

Installer's Personnel

CQA Personnel

S&ME

SUBGRADE CERTIFICATION

Date: 4.18.09

Material: Bentomat ST
Manufacurer: CETCO
Installer: Plastic Fusion

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina

P- 89 through P- 96

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

wet area in LDS lateral ~10' in width

CORRECTIVE ACTION:

removed wet material, replaced with drier material, rolled with smooth-drum roller, and verified elevation with GPS survey.

Date Corrective Action was Implemented: 4.18.09

Date Subgrade was Accepted by Installer: 4.18.09

Installer's Personnel

CQA Personnel

S&ME

SUBGRADE CERTIFICATION

Date: 4.22.09

Material: Bentomat ST
Manufacurer: CETCO
Installer: Plastic Fusion

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill
Project Location: Belmont, North Carolina

P- 97 **through P-** 131

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

too dry

CORRECTIVE ACTION:

applied water with water truck and rolled with vibratory roller

Date Corrective Action was Implemented: 4.22.09

Date Subgrade was Accepted by Installer: 4.22.09

Albert Condit
Installer's Personnel

Edwin Rudd
CQA Personnel

S&ME

SUBGRADE CERTIFICATION

Date: 4.23.09

Material: Bentomat ST

Manufacurer: CETCO

Installer: Plastic Fusion

S&ME Project No.: 1356-06-825

Project Name: Allen RAB Ash Landfill

Project Location: Belmont, North Carolina

P- 132 **through P-** 151

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

portions of subgrade too dry

CORRECTIVE ACTION:

wetted with water truck and rolled with smooth-drum roller

Date Corrective Action was Implemented: 4.23.09

Date Subgrade was Accepted by Installer: 4.23.09

Albert Cornett

Installer's Personnel

CQA Personnel

S&ME

SUBGRADE CERTIFICATION

Date: 4.24.09

Material: Bentomat ST

Manufacurer: CETCO

Installer: Plastic Fusion

S&ME Project No.: 1356-06-825

Project Name: Allen RAB Ash Landfill

Project Location: Belmont, North Carolina

P- 152 through P- 186

THE SUBGRADE THAT THE ABOVE LISTED PANELS ARE TO BE DEPLOYED UPON WAS INSPECTED AND DETERMINED TO BE SUITABLE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

IF THE SUBGRADE IS NOT SUITABLE, STATE REASONS:

CORRECTIVE ACTION:

Date Corrective Action was Implemented: _____

Date Subgrade was Accepted by Installer: _____

Al Contreras Jr.

Installer's Personnel

CQA Personnel

APPENDIX II – GEOSYNTHETICS
Section 3 – HDPE Geomembrane

Secondary HDPE Geomembrane

- Geomembrane Deployment Report
- Geomembrane Trial Seam Log
- Geomembrane Seam Log
- Destructive Laboratory Test Results
- Geomembrane Defect Log
- Geomembrane Repair Testing Log

Primary HDPE Geomembrane

- Geomembrane Deployment Report
- Geomembrane Trial Seam Log
- Geomembrane Seam Log
- Destructive Laboratory Test Results
- Geomembrane Defect Log
- Geomembrane Repair Testing Log

Contractor's Roll Reference List

Tensiometer Load Cell Calibrations

Secondary HDPE Geomembrane Geomembrane Deployment Report

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 1 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	0	0		
S1	246799	75	23	1,725		CR	
S2	246799	76	22.5	1,710		CR	
S3	246799	76	22.5	1,710		CR	
S4	246799	77	22.5	1,733		CR	
S5	246799	84	22.5	1,890		CR	
S6	247105	76	22.5	1,710		CR	
S7	247105	76	22.5	1,710		CR	
S8	247105	79	22.5	1,778		CR	
S9	247105	77	22.5	1,733		CR	
S10	247105	79	22.5	1,778		CR	
S11	246701	77	22.5	1,733		CR	
S12	246701	78	22.5	1,755		CR	
S13	246701	79	22.5	1,778		CR	
S14	246701	79	22.5	1,778		CR	Nw corner cut for tiein
S15	246701	44	22.5	990		CR	Avg length. Cut for tiein
S16	246701	12	8	96		CR	Avg dims cut for tiein
S17	246701	9	8	72		CR	Avg dims cut for tiein
S18	246701	28	22.5	630		CR	Avg length cut for tiein
S19	246700	51	22.5	1,148		CR	Avg length cut for tiein
S20	246700	346	22.5	7,785		CR	
S21	247117	20	22.5	450		CR	
S22	247117	352	22.5	7,920		CR	
			Daily Total	43,608	0		
			Total to Date	43,608	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 2 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	43,608	0		
S23	247719	373	22.5	8,393		CR	
S24	247719	35	22.5	788		CR	
S25	247112	329	22.5	7,403		CR	
S26	247112	72	22.5	1,620		CR	
S27	247221	301	22.5	6,773		CR	
S28	247221	107	22.5	2,408		CR	
S29	247342	264	22.5	5,940		CR	
S30	247342	148	22.5	3,330		CR	
S31	246798	225	22.5	5,063		CR	
S32	246798	184	22.5	4,140		CR	
S33	247569	190	22.5	4,275		CR	
S34	247569	223	22.5	5,018		CR	
S35	247343	149	22.5	3,353		CR	
S36	247343	264	22.5	5,940		CR	
S37	247340	108	22.5	2,430		CR	
S38	247340	296	22.5	6,660		CR	
S39	247225/247233*	74	22.5	1,665		CR	
S40	247225/247233*	339	22.5	7,628		CR	
S41	246794	35	22.5	788		CR	
S42	246794	370	22.5	8,325		CR	
			Daily Total	91,935	0		
			Total to Date	135,543	0		

*Duplicate manufacturer roll numbers on cross-reference list, so panel is one of the two roll numbers

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 3 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	135,543	0		
S43	247225/247233*	378	22.5	8,505		CR	
S44	247220	375	22.5	8,438		CR	
S45	247577	378	22.5	8,505		CR	
S46	247467	75	22.5	1,688		CR	
S47	247467	76	22.5	1,710		CR	
S48	247467	77	22.5	1,733		CR	
S49	247467	77	22.5	1,733		CR	
S50	247467	77	22.5	1,733		CR	
S51	247236	77	22.5	1,733		CR	
S52	247236	79	22.5	1,778		CR	
S53	247236	80	22.5	1,800		CR	
S54	247236	80	22.5	1,800		CR	
S55	247236	82	22.5	1,845		CR	
S56	246702	81	22.5	1,823		CR	
S57	246702	82	22.5	1,845		CR	
S58	246702	84	22.5	1,890		CR	
S59	246702	84	22.5	1,890		CR	
S60	247236	75	22.5	1,688		CR	
S61	247236	11	22.5	248		CR	
			Daily Total	52,380	0		
			Total to Date	187,923	0		

*Duplicate manufacturer roll numbers on cross-reference list, so panel is one of the two roll numbers

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 4 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	187,923	0		
S62	247465	85	22.5	1,913		CR	
S63	247465	85	18	1,530		KB	Sw corner cut
S64	247465	49	18	882		KB	Sw corner cut
S65	247465	192	22.5	4,320		KB	
S66	247461	193	22.5	4,343		KB	
S67	247461	216	22.5	4,860		KB	
S68	247350	174	22.5	3,915		KB	
S69	247350	228	22.5	5,130		KB	
S70	247234	166	22.5	3,735		KB	
S71	247234	243	22.5	5,468		KB	
S72	247102	152	22.5	3,420		KB	
S73	247102	257	22.5	5,783		KB	
S74	246703	140	22.5	3,150		KB	
S75	246703	266	22.5	5,985		KB	
S76	247339	134	22.5	3,015		KB	
S77	247339	272	22.5	6,120		KB	
S78	247568	131	22.5	2,948		KB	
S79	247568	275	22.5	6,188		KB	
S80	247224	132	22.5	2,970		KB	
S81	247224	276	22.5	6,210		KB	
S82	247464	137	22.5	3,083		KB	
S83	247464	274	22.5	6,165		KB	
S84	247341	144	22.5	3,240		KB	
S85	247341	264	22.5	5,940		KB	
S86	247231	160	22.5	3,600		KB	
S87	247231	246	22.5	5,535		KB	
S88	247462	282	22.5	6,345		KB	
			Daily Total	115,790	0		
			Total to Date	303,713	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/18/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 5 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	303,713	0		
S89	247462	226	22.5	5,085		CR	
S90	246709	208	22.5	4,680		CR	
S91	246709	199	22.5	4,478		CR	
S92	247463	238	22.5	5,355		CR	
S93	247463	165	22.5	3,713		CR	
S94	246711	144	22.5	3,240		CR	
S95	246711	268	22.5	6,030		CR	
S96	247111	41	22.5	923		CR	
			Daily Total	33,503	0		
			Total to Date	337,215	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/22/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 6 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	337,215	0		
S97	247111	57	22.5	1,283		CR	
S98	247111	58	22.5	1,305		CR	
S99	247111	58	7.5	435		CR	
S100	246711	58	14	812		CR	
S101	247111	54	22.5	1,215		CR	
S102	247111	54	22.5	1,215		CR	
S103	247111	53	22.5	1,193		CR	
S104	247111	31	22.5	698		CR	
S105	247466	23	22.5	518		CR	
S106	247466	53	22.5	1,193		CR	
S107	247466	53	22.5	1,193		CR	
S108	247466	52	22.5	1,170		CR	
S109	247466	53	22.5	1,193		CR	
S110	247466	54	22.5	1,215		CR	
S111	247466	53	22.5	1,193		CR	
S112	247466	54	22.5	1,215		CR	
S113	246708	55	22.5	1,238		CR	
S114	246708	53	22.5	1,193		CR	
S115	246708	53	22.5	1,193		CR	
S116	246708	53	22.5	1,193		CR	
S117	246708	53	22.5	1,193		CR	
S118	246708	53	22.5	1,193		CR	
S119	246708	53	22.5	1,193		CR	
S120	246708	40	22.5	900		CR	
S121	247109	14	22.5	315		CR	
S122	247109	54	22.5	1,215		CR	
S123	247109	54	22.5	1,215		CR	
S124	247109	54	22.5	1,215		CR	
S125	247109	55	22.5	1,238		CR	
			Daily Total	31,532	0		
			Total to Date	368,747	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/22/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 7 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	368,747	0		
S126	247109	55	22.5	1,238		CR	
S127	247109	54	22.5	1,215		CR	
S128	247109	53	22.5	1,193		CR	
S129	247101	54	22.5	1,215		CR	
S130	247101	54	22.5	1,215		CR	
S131	247101	53	22.5	1,193		CR	
				0			
			Daily Total	7,268	0		
			Total to Date	376,015	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 8 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	376,015	0		
S132	247101	248	22	5,456		CR	
S133	246712	410	22	9,020		CR	
S134	246705	86	22	1,892		CR	
S135	246705	323	22.5	7,268		CR	
S136	246710	411	22.5	9,248		CR	
S137	247219	15	22.5	338		CR	
S138	247458	414	22.5	9,315		CR	
S139	247219	333	22.5	7,493		CR	
S140	247108/248108*	411	22.5	9,248		CR	
S141	247116	343	22.5	7,718		CR	
S142	247116	74	22.5	1,665		CR	
S143	247113	410	22.5	9,225		CR	
S144	246707	205	22.5	4,613		CR	
S145	247219	62	22.5	1,395		CR	
S146	246707	199	22.5	4,478		CR	
S147	247118	414	22.5	9,315		CR	
S148	247115	137	22.5	3,083		CR	
S149	247115	270	22.5	6,075		CR	
S150	247578	412	22.5	9,270		CR	
S151	246706	71	22.5	1,598		CR	

*Duplicate manufacturer roll numbers on cross-reference list, so panel is one of the two roll numbers

Daily Total	117,708	0
Total to Date	493,723	0

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/24/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 9 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	493,723	0		
S152	246706	335	22.5	7,538		CR	
S153	247114	344	22.5	7,740		CR	
S154	247114	67	22.5	1,508		CR	
S155	247107	409	22.5	9,203		CR	
S156	247349	200	22.5	4,500		CR	
S157	247349	214	22.5	4,815		CR	
S158	246797	395	22.5	8,888		CR	
S159	247226	62	22.5	1,395		CR	
S160	247226	349	17	5,933		CR	Average width (trapezoid)
S161	247226	144	5	720		CR	Average width (triangle)
S162	246793	104	22.5	2,340		CR	
S163	247226	57	10	570		CR	
S164	246793	68	10	680		CR	
S165	246793	70	10	700		CR	
S166	246793	133	19	2,527		CR	
S167	246793	97	22.5	2,183		CR	
S168	247575	36	22.5	810		CR	
S169	247575	134	22.5	3,015		CR	
S170	247575	137	22.5	3,083		CR	
S171	247575	101	22.5	2,273		CR	
S172	247110	35	22.5	788		CR	
S173	247110	135	22.5	3,038		CR	
S174	247110	130	18	2,340		CR	average width (l shape)
S175	247110	61	22.5	1,373		CR	
S176	247110	52	22.5	1,170		CR	
S177	246795	14	22.5	315		CR	
S178	246795	59	22.5	1,328		CR	
S179	246795	62	22.5	1,395		CR	
S180	246795	64	22.5	1,440		CR	
			Daily Total	83,603	0		
			Total to Date	577,325	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 04/24/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 10 **of** 10

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	577,325	0		
S181	246795	65	22.5	1,463		CR	
S182	246795	78	22.5	1,755		CR	
S183	246795	41	22.5	923		CR	
S184	247355	42	22.5	945		CR	
S185	247355	38	12.5	475		CR	average width (trapezoid)
S186	247355	12	9	108		CR	Average length (trapezoid)
			Daily Total	5,668	0		
			Total to Date	582,993	0		

CQA Personnel: Cedric Ruhl

Secondary HDPE Geomembrane Geomembrane Trial Seam Log

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondar
Project Location: Belmont, North Carolina
Page: 1 **of** 6

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
S1	955	HC	522	45	5	410	152	135	149	148	131	132	207	206	209	P	F	SS	CR	04/08/2009
S2	955	EE	52	45	3	410	154	137	159	144	145	143	210	209	212	P	F	SS	CR	04/08/2009
S3	1000	HC	522	49	5	410	166	142	138	145	133	150	190	197	201	P	F	ST	CR	04/08/2009
S4	1440	EE	52	55	3	410	123	128	136	119	121	127	165	162	163	P	F	ST	CR	04/08/2009
S5	1441	HC	522	55	5	410	146	143	129	128	116	133	180	178	179	P	F	SS	CR	04/08/2009
S6	740	HC	522	50	5	410	119	137	114	110	131	119	161	174	170	P	F	TT	CR	04/09/2009
S7	735	EE	52	50	3	410	134	145	138	131	134	141	201	207	206	P	F	SS	CR	04/09/2009
S8	745	HC	522	50	5	410	152	135	149	136	138	144	202	207	204	P	F	SS	CR	04/09/2009
S9	1035	GM	760	55	5	410	119	121	129	130	113	124	171	171	172	P	F	SS	CR	04/09/2009
S10	1240	GM	760	65	6	410	110	113	123	120	126	124	168	170	169	P	F	SS	CR	04/09/2009
S11	1250	HC	52	65	6	410	129	125	129	119	125	131	171	165	163	P	F	SS	CR	04/09/2009
S12	1250	EE	52	65	4	410	121	132	135	135	138	122	161	165	158	P	F	SS	CR	04/09/2009
S13	1300	EE	52	65	4	410	108	127	118	109	120	110	141	135	148	P	F	TT	CR	04/09/2009
S14	1300	HC	522	65	6	410	114	126	111	110	109	113	147	152	149	P	F	TT	CR	04/09/2009
S15	1300	GM	760	65	6	410	139	143	115	128	138	141	141	144	148	P	F	TT	CR	04/09/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondar
Project Location: Belmont, North Carolina
Page: 2 **of** 6

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
S16	712	GM	760	57	5	410	115	126	129	117	112	128	191	195	184	P	F	SS	CR	04/10/2009
S17	720	HC	522	57	5	410	123	128	130	137	133	125	161	168	170	P	F	TT	CR	04/10/2009
S18	715	HC	522	57	5	410	140	126	127	123	124	127	193	201	190	P	F	SS	CR	04/10/2009
S19	725	GM	760	57	5	410	128	138	123	143	127	136	168	198	189	P	F	TT	CR	04/10/2009
S20	715	EE	52	57	5	410	128	126	133	127	124	124	192	205	188	P	F	SS	CR	04/10/2009
S21	720	EE	52	57	5	410	134	133	126	122	124	122	168	173	165	P	F	TT	CR	04/10/2009
S22	915	MN	51	60	250	260	146		145		139		140	141	146	P	Ex	TT	CR	04/17/2009
S23	750	HC	522	50	5	410	145	154	146	131	163	169	204	207	206	P	F	SS	CR	04/17/2009
S24	755	HC	522	50	5	410	145	144	142	140	126	140	169	165	172	P	F	TT	CR	04/17/2009
S25	750	GM	760	50	5	410	154	156	157	163	172	161	185	180	179	P	F	TT	CR	04/17/2009
S26	755	GM	760	50	5	410	150	150	133	157	144	139	194	190	201	P	F	SS	CR	04/17/2009
S27	750	EE	52	50	3	410	137	147	148	141	150	139	198	201	200	P	F	SS	CR	04/17/2009
S28	740	EE	52	50	3	410	152	147	151	147	152	162	179	181	184	P	F	ST	CR	04/17/2009
S29	755	EE	52	50	3	410	128	129	126	130	122	127	170	171	176	P	F	TT	CR	04/17/2009
S30	1300	HC	522	60	6	410	123	117	113	116	128	118	157	161	153	P	F	SS	CR	04/17/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondar
Project Location: Belmont, North Carolina
Page: 3 **of** 6

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
S31	1305	GM	760	60	6	410	118	106	100	123	126	114	135	138	133	P	F	TT	CR	04/17/2009
S32	1307	GM	760	60	6	410	132	134	139	124	123	119	158	145	150	P	F	SS	CR	04/17/2009
S33	1310	EE	52	63	4	410	115	107	115	116	126	120	162	165	170	P	F	SS	CR	04/17/2009
S34	1315	EE	52	63	4	410	109	104	111	110	116	110	135	148	150	P	F	TT	CR	04/17/2009
S35	1320	HC	522	63	6	410	108	102	101	104	118	109	137	143	150	P	F	TT	CR	04/17/2009
S36	724	HC	522	48	5	410	135	143	152	144	151	147	198	192	196	P	F	TT	CR	04/17/2009
S37	953	IB	51	55	250	260	133		127		127		143	134	152	P	Ex	TT	CR	04/17/2009
S38	720	EE	52	51	3	410	147	143	162	139	135	146	211	218	225	P	F	SS	CR	04/18/2009
S39	715	EE	52	51	3	410	133	136	130	123	137	134	185	197	201	P	F	TT	CR	04/18/2009
S40	724	HC	522	51	5	410	116	118	121	135	145	126	195	189	193	P	F	TT	CR	04/18/2009
S41	720	HC	522	51	5	410	140	126	143	148	143	128	217	225	218	P	F	SS	CR	04/18/2009
S42	715	GM	760	51	5	410	123	130	127	125	131	141	204	210	212	P	F	SS	CR	04/18/2009
S43	720	GM	760	51	5	410	123	129	114	123	113	124	184	193	186	P	F	TT	CR	04/18/2009
S44	755	IB	51	51	240	260	143		129		133		147	147	155	P	Ex	TT	CR	04/22/2009
S45	740	EE	52	48	3	410	134	131	135	163	161	146	218	225	216	P	F	SS	CR	04/22/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondar
Project Location: Belmont, North Carolina
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					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
S46	745	EE	52	48	3	410	151	141	158	150	145	150	199	218	185	P	F	TT	CR	04/22/2009
S47	750	GM	760	48	5	410	160	144	135	151	135	138	216	203	210	P	F	SS	CR	04/22/2009
S48	755	GM	760	48	5	410	138	133	138	133	158	133	196	194	188	P	F	TT	CR	04/22/2009
S49	747	HC	522	48	5	410	132	140	130	151	171	141	211	208	218	P	F	SS	CR	04/22/2009
S50	750	HC	522	48	5	410	134	138	142	145	145	149	182	176	179	P	F	TT	CR	04/22/2009
S51	900	EE	52	50	3	410	146	156	156	154	125	131	195	191	198	P	F	ST	CR	04/23/2009
S52	930	GM	760	50	5	410	156	140	140	138	145	135	186	195	187	P	F	ST	CR	04/23/2009
S53	733	HC	522	50	5	410	149	136	145	142	133	142	197	201	203	P	F	SS	CR	04/23/2009
S54	735	HC	522	50	5	410	130	122	134	130	132	137	170	175	191	P	F	TT	CR	04/23/2009
S55	740	HC	522	50	5	410	135	142	130	146	137	146	171	185	170	P	F	ST	CR	04/23/2009
S56	740	EE	52	50	3	410	141	121	127	138	141	136	181	193	180	P	F	ST	CR	04/23/2009
S57	735	EE	52	50	3	410	143	142	131	140	140	136	208	213	210	P	F	SS	CR	04/23/2009
S58	745	EE	52	50	3	410	149	112	149	129	142	130	210	187	195	P	F	TT	CR	04/23/2009
S59	758	GM	760	51	5	410	142	132	129	130	133	131	171	185	192	P	F	TT	CR	04/23/2009
S60	750	GM	760	52	5	410	121	135	129	131	129	119	179	198	185	P	F	SS	CR	04/23/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondar
Project Location: Belmont, North Carolina
Page: 5 **of** 6

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
S61	755	GM	760	52	5	410	130	127	127	144	123	127	168	175	169	P	F	ST	CR	04/23/2009
S62	1258	HC	522	80	6	410	111	111	103	118	102	105	132	137	133	P	F	SS	CR	04/23/2009
S63	1305	GM	760	80	6	410	98	103	105	108	106	115	142	160	155	P	F	SS	CR	04/23/2009
S64	1310	GM	760	80	6	410	108	106	107	106	103	113	132	128	121	P	F	TT	CR	04/23/2009
S65	1310	EE	52	80	4	410	116	104	116	107	106	104	143	150	148	P	F	SS	CR	04/23/2009
S66	1315	EE	52	80	4	410	120	112	126	120	117	123	124	131	125	P	F	TT	CR	04/23/2009
S67	1500	HC	522	80	6	410	117	119	119	122	118	124	138	135	137	P	F	TT	CR	04/23/2009
S68	730	EE	52	57	3	410	135	141	144	131	134	135	190	195	186	P	F	SS	KB	04/24/2009
S69	735	EE	52	57	3	410	132	134	125	140	143	130	166	170	167	P	F	TT	KB	04/24/2009
S70	735	HC	522	410	5	410	117	123	127	135	148	131	192	198	201	P	F	SS	KB	04/24/2009
S71	730	HC	522	57	5	410	143	136	151	147	161	145	179	185	177	P	F	ST	KB	04/24/2009
S72	740	HC	522	57	5	410	128	130	148	138	115	127	168	170	181	P	F	TT	KB	04/24/2009
S73	731	GM	760	57	5	410	133	139	129	125	143	133	165	182	173	P	F	TT	KB	04/24/2009
S74	723	GM	760	59	5	410	143	126	127	129	130	128	166	170	175	P	F	SS	KB	04/24/2009
S75	1245	HC	522	83	6	410	110	109	110	109	111	109	130	129	135	P	F	SS	KB	04/24/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 6 **of** 6

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
S76	1252	HC	522	83	6	410	129	110	104	110	105	106	126	131	130	P	F	TT	KB	04/24/2009
S77	1300	EE	52	83	4	410	114	100	113	99	110	102	137	140	138	P	F	SS	KB	04/24/2009
S78	1305	EE	52	83	4	410	101	100	104	101	110	103	133	130	132	P	F	TT	KB	04/24/2009
S79	1315	GM	760	83	6	410	106	111	111	104	110	105	136	133	130	P	F	SS	KB	04/24/2009
S80	1330	GM	760	83	6	410	110	112	109	109	111	112	125	127	130	P	F	TT	KB	04/24/2009
S81	1650	EE	500	83	6	410	106	109	106	108	114	116	140	141	145	P	F	SS	CR	04/25/2009
S82	723	HC	522	62	6	410	129	139	134	133	131	130	162	170	165	P	F	ST	CR	04/25/2009
S83	736	GM	760	62	5	410	143	126	143	141	140	139	154	160	165	P	F	TT	CR	04/25/2009
S84	1000	MN	52	75	240	260	121		135		120		140	142	138	P	Ex	TT	CR	05/01/2009
S85	1040	IB	51	80	240	260	100		109		103		141	143	148	P	Ex	TT	CR	05/01/2009
S86	810	IB	51	70	240	260	119		111		118		144	149	150	P	Ex	TT	CR	05/01/2009
S87	920	IB	51	75	240	260	123		120		133		142	147	151	P	Ex	TT	CR	05/01/2009
S88	825	IB	51	70	240	260	116		129		126		151	144	156	P	Ex	TT	CR	05/01/2009
S89	800	IB	40	72	260	250	134		133		127		138	134	138	P	Ex	TT	JA	07/07/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Kyle Baucom

Secondary HDPE Geomembrane Geomembrane Seam Log

GEOMEMBRANE SEAM LOG

Date: 04/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 1 of 41

Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S3 / S4	E / W	1052	EE	52	75	75		A	1319 / 1324	32 / 32	AC	CR	P	04-08-2009	
S5 / S6	E / W	1111	EE	52	76	151		A	1350 / 1355	30 / 30	AC	CR	P	04-08-2009	
S7 / S8	E / W	1126	EE	52	77	228		A	1400 / 1405	30 / 30	AC	CR	P	04-08-2009	
S9 / S10	E / W	1142	EE	52	77	305		A	1420 / 1425	30 / 30	AC	CR	P	04-08-2009	
S11 / S12	E / W	1246	EE	52	75	380		A	1435 / 1440	30 / 30	AC	CR	P	04-08-2009	
S13 / S14	E / W	1300	EE	52	78	458		A	1445 / 1450	30 / 30	AC	CR	P	04-08-2009	
S14 / S15	E / W	1316	EE	52	56	14	2	A	1335 / 1340	30 / 30	MN	CR	P	04-08-2009	
S16 / S17	NE / SW	1326	EE	52	12	26		A	1450 / 1455	35 / 35	AC	CR	P	04-08-2009	
S15 / S18	NE / SW	1336	EE	52	30	56		A	1500 / 1505	30 / 30	AC	CR	P	04-08-2009	
S14 / S19	NE / SW	1336	EE	52	23	85		A	1500 / 1505	30 / 30	AC	CR	P	04-08-2009	
S15 / S19	NE / SW	1338	EE	52	6	62		A	1500 / 1505	30 / 30	AC	CR	P	04-08-2009	
S20 / S21	E / W	1429	EE	52	23	108		A	1455 / 1500	30 / 30	AC	CR	P	04-08-2009	
S1 / S21	S / N	1500	EE	52	16	124		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S1 / S20	S / N	1502	EE	52	6.5	130.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S2 / S20	S / N	1510	EE	52	22.5	153		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
				Sheet Total	653	153	**Destructive Carry Over**								
				Total to Date	653										

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 2 of 41

Project Total Carry Over 653
Welder Tech. Carry Over 153 153

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S3 / S20	S / N	1517	EE	52	22.5	175.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S4 / S20	S / N	1525	EE	52	22.5	198		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S5 / S20	S / N	1532	EE	52	22.5	220.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S6 / S20	S / N	1540	EE	52	22.5	243		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S7 / S20	S / N	1547	EE	52	22.5	265.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S8 / S20	S / N	1555	EE	52	22.5	288		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S9 / S20	S / N	1602	EE	52	22.5	310.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S10 / S20	S / N	1610	EE	52	22.5	333		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S11 / S20	S / N	1617	EE	52	22.5	355.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S12 / S20	S / N	1625	EE	52	22.5	378		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S13 / S20	S / N	1632	EE	52	22.5	400.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S14 / S20	S / N	1634	EE	52	7	407.5		A	915 / 920	32 / 32	JR	CR	P	04-09-2009	
S19 / S20	S / N	1654	EE	52	60	467.5		A	930 / 935	34 / 34	JR	CR	P	04-09-2009	Z2 0938/0943 37/37

Sheet Total 314.5 467.5 **Destructive Carry Over**
Total to Date 967.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 3 of 41

Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S1 / S2	E / W	1024	HC	522	75	75		A	1305 / 1310	35 / 34	AC	CR	P	04-08-2009	
S2 / S3	E / W	1039	HC	522	74	149		A	1312 / 1317	32 / 32	AC	CR	P	04-08-2009	
S4 / S5	E / W	1057	HC	522	77	226		A	1345 / 1350	30 / 30	AC	CR	P	04-08-2009	
S6 / S7	E / W	1117	HC	522	73	299		A	1355 / 1400	30 / 30	AC	CR	P	04-08-2009	
S8 / S9	E / W	1134	HC	522	76	375		A	1405 / 1410	30 / 30	AC	CR	P	04-08-2009	
S10 / S11	E / W	1244	HC	522	75	450		A	1425 / 1430	30 / 30	AC	CR	P	04-08-2009	
S12 / S13	E / W	1300	HC	522	77	27	1	A	1440 / 1445	30 / 30	AC	CR	P	04-08-2009	
S15 / S16	E / W	1320	HC	522	17	44		A	1325 / 1330	30 / 29	MN	CR	P	04-08-2009	
S17 / S18	N / S	1325	HC	522	12	56		A	1330 / 1335	30 / 30	MN	CR	P	04-08-2009	
S18 / S19	N / S	1329	HC	522	36	92		A	1341 / 1346	30 / 29	MN	CR	P	04-08-2009	
S21 / S22	S / N	1542	HC	522	18	110		A	920 / 925	35 / 35	JR	CR	P	04-09-2009	
S20 / S22	S / N	1612	HC	522	348	458		A	920 / 925	32 / 32	JR	CR	P	04-09-2009	

Sheet Total 958 | 458 **Destructive Carry Over**
Total to Date 958

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Project Total Carry Over 967.5
Welder Tech. Carry Over 467.5 467.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S22 / S23	S / N	955	EE	52	371	838.5		A	1418 / 1423	35 / 35	JR	CR	P	04-09-2009	
S26 / S27	E / W	1047	EE	52	22.5	861		A	1053 / 1058	30 / 30	AC	CR	P	04-09-2009	
S28 / S29	E / W	1100	EE	52	22.5	12.5	3	A	1105 / 1110	30 / 30	AC	CR	P	04-09-2009	
S27 / S29	S / N	1107	EE	52	264	276.5		A	1448 / 1453	30 / 30	DR	CR	P	04-09-2009	
S27 / S28	S / N	1140	EE	52	36	312.5		A	1448 / 1453	30 / 30	DR	CR	P	04-09-2009	
S26 / S28	S / N	1145	EE	52	72	384.5		A	1448 / 1453	30 / 30	DR	CR	P	04-09-2009	
S33 / S35	S / N	1309	EE	52	148	32.5	4	A	1502 / 1507	32 / 31	DR	CR	P	04-09-2009	Z2 1505/1510 30/30
S33 / S34	S / N	1326	EE	52	39	71.5		A	1505 / 1510	30 / 30	DR	CR	P	04-09-2009	
S32 / S34	S / N	1333	EE	52	184	255.5		A	1505 / 1510	30 / 30	DR	CR	P	04-09-2009	
S37 / S38	S / N	1432	EE	52	35	290.5		A	1513 / 1518	30 / 30	DR	CR	P	04-09-2009	
S36 / S38	S / N	1437	EE	52	261	51.5	5	A	1513 / 1518	30 / 30	DR	CR	P	04-09-2009	
S37 / S39	S / N	1445	EE	52	73	124.5		A	1513 / 1518	30 / 30	DR	CR	P	04-09-2009	

Sheet Total 1528 124.5 **Destructive Carry Over**
Total to Date 2495.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 958
Welder Tech. Carry Over 458 458

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S24 / S25	E / W	1013	HC	522	23	481		A	1020 / 1025	30 / 30	AC	CR	P	04-09-2009	
S23 / S25	S / N	1018	HC	522	336	294	6	A	1441 / 1446	32 / 32	DR	CR	P	04-09-2009	
S23 / S24	S / N	1028	HC	522	35	329		A	1441 / 1446	32 / 32	DR	CR	P	04-09-2009	
S29 / S31	S / N	1131	HC	522	221	50	7	A	1452 / 1457	33 / 33	DR	CR	P	04-09-2009	
S29 / S30	S / N	1215	HC	522	42	92		A	1452 / 1457	33 / 33	DR	CR	P	04-09-2009	
S28 / S30	S / N	1223	HC	522	106	198		A	1452 / 1457	32 / 32	DR	CR	P	04-09-2009	
S31 / S33	S / N	1304	HC	522	186	384		A	1456 / 1501	30 / 30	DR	CR	P	04-09-2009	
S31 / S32	S / N	1334	HC	522	36	420		A	1456 / 1501	30 / 30	DR	CR	P	04-09-2009	
S30 / S32	S / N	1340	HC	522	148	68	8	A	1456 / 1501	30 / 30	DR	CR	P	04-09-2009	
S38 / S39	E / W	1416	HC	522	22.5	90.5		A	1420 / 1425	32 / 32	AC	CR	P	04-09-2009	
S40 / S41	E / W	1431	HC	522	22.5	113		A	1430 / 1435	31 / 31	GM	CR	P	04-09-2009	
S39 / S41	S / N	1440	HC	522	34	147		A	1539 / 1544	32 / 32	DR	CR	P	04-09-2009	
S39 / S40	S / N	1446	HC	522	40	187		A	1539 / 1544	32 / 32	DR	CR	P	04-09-2009	
S38 / S40	S / N	1453	HC	522	295	482		A	1539 / 1544	32 / 32	DR	CR	P	04-09-2009	

Sheet Total 1547 482 **Destructive Carry Over**
Total to Date 2505

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S24 / S27	S / N	1043	GM	760	33	33		A	1445 / 1450	33 / 32	DR	CR	P	04-09-2009	
S25 / S27	S / N	1050	GM	760	264	297		A	1445 / 1450	33 / 32	DR	CR	P	04-09-2009	
S25 / S26	S / N	1103	GM	760	72	369		A	1445 / 1450	33 / 32	DR	CR	P	04-09-2009	
S30 / S31	E / W	1145	GM	760	22.5	391.5	10	A	1150 / 1155	30 / 30	DR	CR	P	04-09-2009	DS-10 for lack of a.m. T/T trial weld
S32 / S33	E / W	1250	GM	760	22.5	414		A	1318 / 1323	30 / 30	AC	CR	P	04-09-2009	
S34 / S35	E / W	1306	GM	760	23	437		A	1312 / 1317	30 / 30	AC	CR	P	04-09-2009	
S36 / S37	E / W	1316	GM	760	22.5	459.5		A	1325 / 1330	30 / 30	AC	CR	P	04-09-2009	
S35 / S37	S / N	1325	GM	760	106	65.5	9	A	1508 / 1513	30 / 30	DR	CR	P	04-09-2009	
S35 / S36	S / N	1344	GM	760	40	105.5		A	1508 / 1513	30 / 30	DR	CR	P	04-09-2009	
S34 / S36	S / N	1351	GM	760	222	327.5		A	1508 / 1513	30 / 30	DR	CR	P	04-09-2009	
S41 / S42	S / N	1445	GM	760	32	359.5		A	1540 / 1545	32 / 32	DR	CR	P	04-09-2009	
S40 / S42	S / N	1451	GM	760	338	197.5	11	A	1540 / 1545	32 / 32	DR	CR	P	04-09-2009	

Sheet Total 1197.5 | 197.5 **Destructive Carry Over**
Total to Date 1197.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 2495.5
Welder Tech. Carry Over 124.5 124.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S44 / S45	S / N	916	EE	52	373	497.5		A	746 / 751	30 / 30	JV	CR	P	04-11-2009	
S47 / S48	E / W	1100	EE	52	75	72.5	12	A	802 / 807	30 / 30	JV	CR	P	04-11-2009	
S49 / S50	E / W	1112	EE	52	76	148.5		A	813 / 818	30 / 30	JV	CR	P	04-11-2009	
S51 / S52	E / W	1123	EE	52	78	226.5		A	823 / 828	30 / 30	JV	CR	P	04-11-2009	
S54 / S55	E / W	1136	EE	52	81	307.5		A	837 / 842	30 / 30	JV	CR	P	04-11-2009	
S57 / S58	E / W	1153	EE	52	83	390.5		A	851 / 856	30 / 30	JV	CR	P	04-11-2009	

Sheet Total 766 390.5 **Destructive Carry Over**
Total to Date 3261.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 2505
Welder Tech. Carry Over 482 482

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S42 / S43	S / N	821	HC	522	368	350	13	A	728 / 733	30 / 30	JV	CR	P	04-11-2009	Z2 0733/0738 30/30
S1 / S46	E / W	1055	HC	522	73	423		A	756 / 801	30 / 30	JV	CR	P	04-11-2009	
S48 / S49	E / W	1110	HC	522	76	499		A	808 / 813	30 / 30	JV	CR	P	04-11-2009	
S52 / S53	E / W	1126	HC	522	79	78	14	A	828 / 833	30 / 30	JV	CR	P	04-11-2009	
S55 / S56	E / W	1142	HC	522	80	158		A	843 / 848	30 / 30	JV	CR	P	04-11-2009	
S58 / S59	E / W	1158	HC	522	85	243		A	905 / 910	30 / 29	JV	CR	P	04-11-2009	Z2 0855/0900 30/30

Sheet Total 761 243 **Destructive Carry Over**
Total to Date 3266

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 1197.5
Welder Tech. Carry Over 197.5 197.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S43 / S44	S / N	836	GM	760	373	70.5	15	A	738 / 743	30 / 30	JV	CR	P	04-11-2009	
S46 / S47	E / W	1054	GM	760	74	144.5		A	759 / 804	30 / 30	JV	CR	P	04-11-2009	
S50 / S51	E / W	1111	GM	760	76	220.5		A	818 / 823	30 / 30	JV	CR	P	04-11-2009	
S53 / S54	E / W	1126	GM	760	78	298.5		A	832 / 837	30 / 30	JV	CR	P	04-11-2009	
S56 / S57	E / W	1144	GM	760	80	378.5		A	847 / 852	30 / 30	JV	CR	P	04-11-2009	
S60 / S61	N / S	1205	GM	760	22.5	401		A	1205 / 1210	30 / 30	AC	CR	P	04-10-2009	
S59 / S61	E / W	1210	GM	760	10	411		A	901 / 906	30 / 30	JV	CR	P	04-11-2009	
S59 / S60	E / W	1212	GM	760	75	486		A	901 / 906	30 / 30	JV	CR	P	04-11-2009	

Sheet Total 788.5 486 **Destructive Carry Over**
Total to Date 1986

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 3261.5
Welder Tech. Carry Over 390.5 390.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S62 / S63	E / W	1052	EE	52	83	473.5		A	1133 / 1138	31 / 31	IB	KB	P	04-16-2009	
S63 / S66	S / N	1147	EE	52	13	486.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S62 / S66	S / N	1149	EE	52	23	9.5	16	A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S60 / S66	S / N	1152	EE	52	22.5	32		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S59 / S66	S / N	1155	EE	52	22.5	54.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S58 / S66	S / N	1158	EE	52	22.5	77		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S57 / S66	S / N	1201	EE	52	22.5	99.5		A	1457 / 1503	0 / 0	JR	KB	P	04-16-2009	
S56 / S66	S / N	1204	EE	52	22.5	122		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S55 / S66	S / N	1207	EE	52	22.5	144.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S54 / S66	S / N	1207	EE	52	15	159.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S54 / S65	S / N	1212	EE	52	8	167.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S53 / S65	S / N	1213	EE	52	22.5	190		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S52 / S65	S / N	1216	EE	52	22.5	212.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S51 / S65	S / N	1219	EE	52	22.5	235		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S50 / S65	S / N	1222	EE	52	22.5	257.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	

Sheet Total 367 257.5 **Destructive Carry Over**
Total to Date 3628.5

CQA Personnel: Kyle Baucom

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 3628.5
Welder Tech. Carry Over 257.5 | 257.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S49 / S65	S / N	1225	EE	52	22.5	280		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S48 / S65	S / N	1228	EE	52	22.5	302.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S47 / S65	S / N	1231	EE	52	22.5	325		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S46 / S65	S / N	1234	EE	52	22.5	347.5		A	1457 / 1503	34 / 34	JR	KB	P	04-16-2009	
S70 / S72	S / N	1334	EE	52	150	497.5		A	1505 / 1510	38 / 38	JR	KB	P	04-16-2009	
S70 / S71	S / N	1352	EE	52	16	13.5	17	A	1505 / 1510	38 / 38	JR	KB	P	04-16-2009	
S69 / S71	S / N	1354	EE	52	226	239.5		A	1505 / 1510	38 / 38	JR	KB	P	04-16-2009	
S74 / S76	S / N	1425	EE	52	132	371.5		A	1513 / 1518	32 / 32	JR	KB	P	04-16-2009	
S74 / S75	S / N	1449	EE	52	11	382.5		A	1513 / 1518	32 / 32	JR	KB	P	04-16-2009	
S73 / S75	S / N	1451	EE	52	256	138.5	18	A	1513 / 1518	32 / 32	JR	KB	P	04-16-2009	
S78 / S80	S / N	1517	EE	52	129	267.5		A	1610 / 1615	39 / 39	JR	KB	P	04-16-2009	
S78 / S79	S / N	1518	EE	52	3.5	271		A	1610 / 1615	39 / 39	JR	KB	P	04-16-2009	
S77 / S79	S / N	1530	EE	52	272	43	19	A	1610 / 1615	39 / 39	JR	KB	P	04-16-2009	
S82 / S84	S / N	1609	EE	52	138	181		A	1641 / 1646	32 / 32	JR	KB	P	04-16-2009	
S81 / S84	S / N	1624	EE	52	2	183		A	1641 / 1646	32 / 32	JR	KB	P	04-16-2009	
				Sheet Total	1425.5	183	**Destructive Carry Over**								
				Total to Date	5054										

CQA Personnel: Kyle Baucom

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5054
Welder Tech. Carry Over 183 183

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S81 / S83	S / N	1625	EE	52	274	457		A	1641 / 1646	32 / 32	JR	KB	P	04-16-2009	

Sheet Total 274 457 **Destructive Carry Over**
Total to Date 5328

CQA Personnel: Kyle Baucom

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 3266
Welder Tech. Carry Over 243 243

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S61 / S62	E / W	1045	HC	522	9	252		A	1130 / 1140	35 / 35	IB	CR	P	04-16-2009	
S60 / S62	E / W	1047	HC	522	75	327		A	1130 / 1140	35 / 35	IB	CR	P	04-16-2009	
S66 / S68	S / N	1155	HC	522	169	496		A	1500 / 1505	35 / 35	JR	KB	P	04-16-2009	
S66 / S67	S / N	1218	HC	522	23	19	20	A	1500 / 1505	35 / 35	JR	KB	P	04-16-2009	
S65 / S67	S / N	1244	HC	522	193	212		A	1500 / 1505	35 / 35	JR	KB	P	04-16-2009	
S68 / S70	S / N	1315	HC	522	163	375		A	1504 / 1509	35 / 35	JR	KB	P	04-16-2009	
S68 / S69	S / N	1343	HC	522	11	386		A	1504 / 1509	35 / 35	JR	KB	P	04-16-2009	
S67 / S69	S / N	1345	HC	522	215	101	21	A	1504 / 1509	35 / 35	JR	KB	P	04-16-2009	
S75 / S76	E / W	1420	HC	522	22.5	123.5		A	1425 / 1430	31 / 30	MN	KB	P	04-16-2009	
S77 / S78	E / W	1437	HC	522	22.5	146		A	1440 / 1445	33 / 33	MN	KB	P	04-16-2009	
S76 / S77	S / N	1503	HC	522	7	153		A	1545 / 1550	32 / 32	JR	KB	P	04-16-2009	
S75 / S77	S / N	1504	HC	522	265	418		A	1545 / 1550	32 / 32	JR	KB	P	04-16-2009	
S76 / S78	S / N	1544	HC	522	128	46	22	A	1545 / 1550	32 / 32	JR	KB	P	04-16-2009	
S83 / S84	E / W	1549	HC	522	22.5	68.5		A	1554 / 1559	32 / 32	DR	KB	P	04-16-2009	
S85 / S86	E / W	1605	HC	522	22.5	91		A	1615 / 1620	32 / 32	DR	KB	P	04-16-2009	
				Sheet Total	1348	91	**Destructive Carry Over**								
				Total to Date	4614										

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 4614
Welder Tech. Carry Over 91 91

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S84 / S86	S / N	1612	HC	522	139	230		A	1716 / 1721	32 / 32	JR	KB	P	04-16-2009	
S83 / S86	S / N	1634	HC	522	11	241		A	1716 / 1721	32 / 32	JR	KB	P	04-16-2009	
S83 / S85	S / N	1636	HC	522	264	5	23	A	1716 / 1721	32 / 32	JR	KB	P	04-16-2009	

Sheet Total 414 5 **Destructive Carry Over**
Total to Date 5028

CQA Personnel: Kyle Baucom

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 1986
Welder Tech. Carry Over 486 | 486

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S63 / S64	E / W	1055	GM	760	46	32	24	A	1140 / 1145	35 / 35	JR	KB	P	04-16-2009	
S65 / S66	E / W	1120	GM	760	22.5	54.5		A	1030 / 1035	35 / 35	AC	KB	P	04-16-2009	
S65 / S66	E / W	1120	GM	760	22.5	54.5		A	1030 / 1035	35 / 35	JR	KB	P	04-16-2009	
S67 / S68	E / W	1154	GM	760	22.5	77		A	1159 / 1204	38 / 38	JR	KB	P	04-16-2009	
S69 / S70	E / W	1315	GM	760	22.5	99.5		A	1315 / 1320	30 / 30	IB	KB	P	04-16-2009	
S71 / S72	E / W	1329	GM	760	22.5	122		A	1330 / 1335	30 / 30	IB	KB	P	04-16-2009	
S73 / S74	E / W	1355	GM	760	22.5	144.5		A	1400 / 1405	30 / 30	MN	KB	P	04-16-2009	
S72 / S74	S / N	1410	GM	760	139	283.5		A	1511 / 1516	33 / 33	JR	KB	P	04-16-2009	
S72 / S73	S / N	1412	GM	760	13.5	297		A	1511 / 1516	33 / 33	JR	KB	P	04-16-2009	
S71 / S73	S / N	1444	GM	760	242	61.5	25	A	1511 / 1516	33 / 33	JR	KB	P	04-16-2009	
S79 / S80	E / W	1510	GM	760	22.5	84		A	1515 / 1520	34 / 34	MN	KB	P	04-16-2009	
S81 / S82	E / W	1525	GM	760	22.5	106.5		A	1534 / 1539	30 / 30	DR	KB	P	04-16-2009	
S80 / S82	S / N	1536	GM	760	133	239.5		A	1626 / 1631	32 / 32	JR	KB	P	04-16-2009	
S80 / S81	S / N	1537	GM	760	1.5	241		A	1626 / 1631	32 / 32	JR	KB	P	04-16-2009	
S79 / S81	S / N	1614	GM	760	274	15	26	A	1626 / 1631	32 / 32	JR	KB	P	04-16-2009	

Sheet Total 1029 | 15 **Destructive Carry Over**
Total to Date 3015

CQA Personnel: Kyle Baucom

GEOMEMBRANE SEAM LOG

Date: 04/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 3015
Welder Tech. Carry Over 15 | 15

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S87 / S88	E / W	1630	GM	760	22.5	37.5		A	1636 / 1641	32 / 32	JR	KB	P	04-16-2009	
S86 / S88	S / N	1636	GM	760	158	195.5		A	1732 / 1737	32 / 32	JR	KB	P	04-16-2009	
S85 / S88	S / N	1638	GM	760	18	213.5		A	1732 / 1737	32 / 32	JR	KB	P	04-16-2009	
S85 / S87	S / N	1711	GM	760	244	457.5		A	1732 / 1737	32 / 32	JR	KB	P	04-16-2009	

Sheet Total 442.5 | 457.5 **Destructive Carry Over**
Total to Date 3457.5

CQA Personnel: Kyle Baucom

GEOMEMBRANE SEAM LOG

Date: 04/17/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5028
Welder Tech. Carry Over 5 5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S21 / S65	E / W	811	HC	522	22.5	27.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S22 / S67	E / W	814	HC	522	22	49.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S22 / S69	E / W	817	HC	522	0.5	50		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S23 / S69	E / W	817	HC	522	22	72		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S23 / S71	E / W	820	HC	522	0.5	72.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S24 / S71	E / W	820	HC	522	22	94.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S24 / S73	E / W	823	HC	522	0.5	95		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S27 / S73	E / W	823	HC	522	22	117		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S27 / S75	E / W	826	HC	522	0.5	117.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S29 / S75	E / W	826	HC	522	22	139.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S29 / S77	E / W	829	HC	522	0.5	140		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S31 / S77	E / W	829	HC	522	22	162		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S31 / S79	E / W	832	HC	522	0.5	162.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S33 / S79	E / W	832	HC	522	22	184.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S33 / S81	E / W	835	HC	522	0.5	185		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	

Sheet Total 180 185 **Destructive Carry Over**
Total to Date 5208

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/17/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5208
Welder Tech. Carry Over 185 185

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S35 / S81	E / W	835	HC	522	22	207		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S35 / S83	E / W	838	HC	522	0.5	207.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S37 / S83	E / W	838	HC	522	22	229.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S37 / S85	E / W	841	HC	522	0.5	230		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S39 / S85	E / W	841	HC	522	22	252		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S39 / S87	E / W	844	HC	522	0.5	252.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	
S41 / S87	E / W	844	HC	522	22	274.5		A	930 / 935	30 / 30	IB	CR	P	04-17-2009	

Sheet Total 89.5 274.5 **Destructive Carry Over**
Total to Date 5297.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/18/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5328
Welder Tech. Carry Over 457 457

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S88 / S90	S / N	910	EE	52	180	137	27	A	721 / 726	33 / 33	JR	CR	P	04-21-2009	
S87 / S89	S / N	931	EE	52	223	360		A	730 / 735	32 / 32	JR	CR	P	04-21-2009	
S87 / S90	S / N	932	EE	52	23	383		A	721 / 726	33 / 33	JR	CR	P	04-21-2009	
S95 / S96	E / W	1034	EE	52	22.5	405.5		A	1035 / 1040	37 / 37	JR	CR	P	04-17-2009	
S94 / S96	S / N	1044	EE	52	38	443.5		A	1120 / 1125	35 / 35	JR	CR	P	04-17-2009	
S94 / S95	S / N	1047	EE	52	104	47.5	28	A	1120 / 1125	35 / 35	JR	CR	P	04-17-2009	
S93 / S95	S / N	1101	EE	52	159	206.5		A	1120 / 1125	35 / 35	JR	CR	P	04-17-2009	

Sheet Total 749.5 206.5 **Destructive Carry Over**
Total to Date 6077.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/18/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5297.5
Welder Tech. Carry Over 274.5 | 274.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S90 / S92	S / N	937	HC	522	208	72.5	29	A	1055 / 1100	36 / 36	JR	CR	P	04-17-2009	
S89 / S92	S / N	1005	HC	522	26	98.5		A	1055 / 1100	36 / 36	JR	CR	P	04-17-2009	
S89 / S91	S / N	1009	HC	522	199	297.5		A	1055 / 1100	36 / 36	JR	CR	P	04-17-2009	
S41 / S87	E / W	1129	HC	522	5	302.5		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S41 / S89	E / W	1130	HC	522	0.5	303		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S42 / S89	E / W	1130	HC	522	22	325		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S42 / S91	E / W	1133	HC	522	0.5	325.5		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S43 / S91	E / W	1133	HC	522	22	347.5		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S43 / S93	E / W	1136	HC	522	0.5	348		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S44 / S93	E / W	1136	HC	522	22	370		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S44 / S95	E / W	1139	HC	522	0.5	370.5		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	
S45 / S95	E / W	1139	HC	522	22	392.5		A	1143 / 1152	32 / 32	JR	CR	P	04-18-2009	

Sheet Total 528 | 392.5 **Destructive Carry Over**
Total to Date 5825.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/18/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 3457.5
Welder Tech. Carry Over 457.5 457.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S89 / S90	E / W	906	GM	760	22.5	480		A	910 / 915	38 / 38	JR	CR	P	04-18-2009	
S91 / S92	E / W	928	GM	760	22.5	2.5	30	A	935 / 940	35 / 35	JR	CR	P	04-17-2009	
S93 / S94	E / W	952	GM	760	22.5	25		A	957 / 1003	30 / 30	JR	CR	P	04-17-2009	
S92 / S94	S / N	1000	GM	760	108	133		A	1100 / 1105	39 / 39	JR	CR	P	04-17-2009	
S91 / S94	S / N	1014	GM	760	33	166		A	1100 / 1105	39 / 39	JR	CR	P	04-17-2009	
S91 / S93	S / N	1019	GM	760	164	330		A	1100 / 1105	39 / 39	JR	CR	P	04-17-2009	

Sheet Total 372.5 330 **Destructive Carry Over**
Total to Date 3830

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/22/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Project Total Carry Over 6077.5
Welder Tech. Carry Over 206.5 206.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S98 / S99	N / S	829	EE	52	57	263.5		A	904 / 909	30 / 30	AC	CR	P	04-22-2009	
S102 / S103	E / W	843	EE	52	54	317.5		A	950 / 955	32 / 32	AC	CR	P	04-22-2009	
S99 / S100	E / W	923	EE	52	8	325.5		A	935 / 940	32 / 31	AC	CR	P	04-22-2009	
S98 / S100	E / W	924	EE	52	22.5	348		A	935 / 940	32 / 31	AC	CR	P	04-22-2009	
S97 / S100	E / W	927	EE	52	22.5	370.5		A	935 / 940	32 / 31	AC	CR	P	04-22-2009	
S110 / S111	E / W	937	EE	52	53	423.5		A	1056 / 1101	30 / 30	VM	CR	P	04-22-2009	
S113 / S114	E / W	951	EE	52	54	477.5		A	1112 / 1117	30 / 30	VM	CR	P	04-22-2009	
S116 / S117	E / W	1001	EE	52	53	30.5	31	A	1119 / 1124	30 / 30	IB	CR	P	04-22-2009	
S120 / S121	N / S	1013	EE	52	22.5	53		A	1015 / 1020	32 / 32	AC	CR	P	04-22-2009	
S119 / S121	E / W	1023	EE	52	14	67		A	1126 / 1131	30 / 30	IB	CR	P	04-22-2009	
S119 / S120	E / W	1025	EE	52	39	106		A	1126 / 1131	30 / 30	IB	CR	P	04-22-2009	
S124 / S125	E / W	1051	EE	52	54	160		A	1131 / 1136	30 / 30	IB	CR	P	04-22-2009	
S126 / S127	E / W	1101	EE	52	53	213		A	710 / 715	32 / 32	AC	CR	P	04-23-2009	
S129 / S130	E / W	1112	EE	52	53	266		A	723 / 728	32 / 32	AC	CR	P	04-23-2009	

Sheet Total 559.5 266 **Destructive Carry Over**
Total to Date 6637

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

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S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5825.5
Welder Tech. Carry Over 392.5 392.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S97 / S98	N / S	826	HC	522	55	447.5		A	910 / 915	30 / 30	AC	CR	P	04-22-2009	
S101 / S102	E / W	840	HC	522	52	499.5		A	945 / 950	32 / 32	AC	CR	P	04-22-2009	
S103 / S104	E / W	847	HC	522	31	30.5	32	A	954 / 959	32 / 32	AC	CR	P	04-22-2009	
S103 / S105	E / W	905	HC	522	21	51.5		A	954 / 959	32 / 32	AC	CR	P	04-22-2009	
S105 / S106	E / W	915	HC	522	22	73.5		A	1000 / 1005	32 / 32	AC	CR	P	04-22-2009	
S104 / S106	E / W	924	HC	522	31	104.5		A	1000 / 1005	32 / 32	AC	CR	P	04-22-2009	
S108 / S109	E / W	931	HC	522	52	156.5		A	1038 / 1043	32 / 32	VM	CR	P	04-22-2009	
S111 / S112	E / W	942	HC	522	52	208.5		A	1055 / 1100	30 / 30	VM	CR	P	04-22-2009	
S114 / S115	E / W	949	HC	522	52	260.5		A	1113 / 1118	31 / 31	VM	CR	P	04-22-2009	
S117 / S118	E / W	1006	HC	522	52	312.5		A	1120 / 1125	30 / 30	IB	CR	P	04-22-2009	
S121 / S122	E / W	1022	HC	522	14	326.5		A	1126 / 1131	30 / 30	IB	CR	P	04-22-2009	
S120 / S122	E / W	1024	HC	522	39	365.5		A	1126 / 1131	30 / 30	IB	CR	P	04-22-2009	
S123 / S124	E / W	1048	HC	522	54	419.5		A	1130 / 1135	30 / 29	IB	CR	P	04-22-2009	
S127 / S128	E / W	1101	HC	522	52	471.5		A	715 / 720	32 / 32	AC	CR	P	04-23-2009	
S130 / S131	E / W	1113	HC	522	53	24.5	33	A	730 / 735	32 / 32	AC	CR	P	04-23-2009	

Sheet Total 632 24.5 **Destructive Carry Over**
Total to Date 6457.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/22/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 3830
Welder Tech. Carry Over 330 330

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S100 / S101	E / W	840	GM	760	54	384		A	937 / 942	32 / 31	AC	CR	P	04-22-2009	
S104 / S105	N / S	850	GM	760	22.5	406.5		A	855 / 900	30 / 30	AC	CR	P	04-22-2009	
S106 / S107	E / W	902	GM	760	53	459.5		A	1025 / 1030	30 / 30	VM	CR	P	04-22-2009	
S107 / S108	E / W	920	GM	760	51	10.5	34	A	1030 / 1035	32 / 32	VM	CR	P	04-22-2009	
S109 / S110	E / W	935	GM	760	53	63.5		A	1040 / 1045	30 / 30	VM	CR	P	04-22-2009	
S112 / S113	E / W	946	GM	760	53	116.5		A	1105 / 1110	30 / 30	VM	CR	P	04-22-2009	
S115 / S116	E / W	957	GM	760	53	169.5		A	1117 / 1122	30 / 30	IB	CR	P	04-22-2009	
S118 / S119	E / W	1008	GM	760	52	221.5		A	1125 / 1130	30 / 30	IB	CR	P	04-22-2009	
S122 / S123	E / W	1043	GM	760	52	273.5		A	1129 / 1134	30 / 30	IB	CR	P	04-22-2009	
S125 / S126	E / W	1053	GM	760	54	327.5		A	1137 / 1142	30 / 30	IB	CR	P	04-22-2009	
S128 / S129	E / W	1108	GM	760	53	380.5		A	720 / 725	32 / 32	AC	CR	P	04-23-2009	

Sheet Total 550.5 380.5 **Destructive Carry Over**
Total to Date 4380.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 6637
Welder Tech. Carry Over 266 266

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S132 / S135	N / S	937	EE	52	248	14	35	A	750 / 755	30 / 30	IB	CR	P	04-24-2009	
S133 / S135	N / S	1010	EE	52	71	85		A	745 / 750	30 / 30	AC	CR	P	04-24-2009	z2 750/755 30/30
S133 / S136	N / S	1019	EE	52	340	425		A	1545 / 1550	34 / 33	IB	CR	P	04-23-2009	Z2 1615/1620 30/30 Z3 745/750 30/30
S134 / S136	N / S	1102	EE	52	70	495		A	1545 / 1550	34 / 33	IB	CR	P	04-23-2009	
S136 / S137	E / W	1113	EE	52	22.5	17.5	36	A	1118 / 1123	32 / 32	AC	CR	P	04-23-2009	
S134 / S137	N / S	1116	EE	52	10	27.5		A	745 / 750	30 / 30	IB	CR	P	04-24-2009	
S138 / S140	N / S	1133	EE	52	407	434.5		A	758 / 803	30 / 30	IB	CR	P	04-24-2009	
S138 / S141	N / S	1226	EE	52	7	441.5		A	758 / 803	30 / 30	IB	CR	P	04-24-2009	
S139 / S141	N / S	1226	EE	52	333	264.5	37	A	758 / 803	30 / 30	IB	CR	P	04-24-2009	
S147 / S148	E / W	1347	EE	52	22.5	287		A	1355 / 1400	32 / 32	AC	CR	P	04-23-2009	
S149 / S150	E / W	1440	EE	52	22.5	309.5		A	1445 / 1450	32 / 32	AC	CR	P	04-23-2009	
S146 / S149	N / S	1449	EE	52	199	8.5	38	A	805 / 810	30 / 30	IB	CR	P	04-24-2009	
S147 / S149	N / S	1511	EE	52	70	78.5		A	805 / 810	30 / 30	IB	CR	P	04-24-2009	
S147 / S150	N / S	1519	EE	52	345	423.5		A	805 / 810	30 / 30	IB	CR	P	04-24-2009	
S148 / S150	N / S	1556	EE	52	66	489.5		A	805 / 810	30 / 30	IB	CR	P	04-24-2009	

Sheet Total 2233.5 489.5 **Destructive Carry Over**
Total to Date 8870.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 8870.5
Welder Tech. Carry Over 489.5 489.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S148 / S151	N / S	1603	EE	52	70	59.5	39	A	805 / 810	30 / 30	IB	CR	P	04-24-2009	

Sheet Total 70 59.5 **Destructive Carry Over**
Total to Date 8940.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Project Total Carry Over 6457.5
Welder Tech. Carry Over 24.5 24.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S99 / S132	N / S	920	HC	522	57	81.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S100 / S132	N / S	929	HC	522	14	95.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S101 / S132	N / S	932	HC	522	22.5	118		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S102 / S132	N / S	935	HC	522	22.5	140.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S103 / S132	N / S	939	HC	522	22.5	163		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S105 / S132	N / S	943	HC	522	22.5	185.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S106 / S132	N / S	946	HC	522	22.5	208		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S107 / S132	N / S	950	HC	522	22.5	230.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S108 / S132	N / S	953	HC	522	22.5	253		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S109 / S132	N / S	957	HC	522	17	270		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S109 / S133	N / S	1000	HC	522	5.5	275.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S110 / S133	N / S	1001	HC	522	22.5	298		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S111 / S133	N / S	1004	HC	522	22.5	320.5		A	1534 / 1539	36 / 35	IB	CR	P	04-23-2009	
S112 / S133	N / S	1008	HC	522	22.5	343		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	z2 1534/1539 36/35
S113 / S133	N / S	1016	HC	522	22.5	365.5		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	

Sheet Total 341 365.5 **Destructive Carry Over**
Total to Date 6798.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Project Total Carry Over 6798.5
Welder Tech. Carry Over 365.5 365.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S114 / S133	N / S	1019	HC	522	22.5	388		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S115 / S133	N / S	1023	HC	522	22.5	410.5		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S116 / S133	N / S	1027	HC	522	22.5	433		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S117 / S133	N / S	1030	HC	522	22.5	455.5		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S118 / S133	N / S	1032	HC	522	22.5	478		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S119 / S133	N / S	1037	HC	522	22.5	0.5	40	A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S121 / S133	N / S	1043	HC	522	22.5	23		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S122 / S133	N / S	1045	HC	522	22.5	45.5		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S123 / S133	N / S	1048	HC	522	22.5	68		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	z2 1525/1530 30/30
S124 / S133	N / S	1052	HC	522	22.5	90.5		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	
S125 / S133	N / S	1056	HC	522	22.5	113		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S126 / S133	N / S	1059	HC	522	22.5	135.5		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	
S127 / S133	N / S	1103	HC	522	22.5	158		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	
S128 / S133	N / S	1107	HC	522	18.5	176.5		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	
S128 / S134	N / S	1110	HC	522	4	180.5		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	

Sheet Total 315 180.5 **Destructive Carry Over**
Total to Date 7113.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 7113.5
Welder Tech. Carry Over 180.5 | 180.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S129 / S134	N / S	1110	HC	522	22.5	203		A	1525 / 1530	30 / 30	IB	CR	P	04-23-2009	
S130 / S134	N / S	1114	HC	522	22.5	225.5		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	
S131 / S134	N / S	1118	HC	522	22.5	248		A	1520 / 1525	30 / 30	IB	CR	P	04-23-2009	
S140 / S141	E / W	1124	HC	522	22.5	270.5		A	1135 / 1140	32 / 32	AC	CR	P	04-23-2009	
S142 / S143	E / W	1245	HC	522	22.5	293		A	1250 / 1255	32 / 32	AC	CR	P	04-23-2009	
S140 / S142	N / S	1310	HC	522	70	363		A	800 / 805	30 / 30	IB	CR	P	04-24-2009	
S140 / S143	N / S	1320	HC	522	336	199	41	A	800 / 805	30 / 30	IB	CR	P	04-24-2009	
S141 / S143	N / S	1409	HC	522	73	272		A	800 / 805	30 / 30	IB	CR	P	04-24-2009	
S141 / S144	N / S	1419	HC	522	205	477		A	800 / 805	30 / 30	IB	CR	P	04-24-2009	
S141 / S145	N / S	1449	HC	522	62	39	42	A	800 / 805	30 / 30	IB	CR	P	04-24-2009	
S150 / S151	E / W	1510	HC	522	22.5	61.5		A	1518 / 1523	32 / 32	AC	CR	P	04-23-2009	

Sheet Total 881 | 61.5 **Destructive Carry Over**
Total to Date 7994.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
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Project Total Carry Over 4380.5
Welder Tech. Carry Over 380.5 380.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S132 / S133	E / W	918	GM	760	22.5	403		A	922 / 927	32 / 32	AC	CR	P	04-23-2009	
S133 / S134	E / W	925	GM	760	22.5	425.5		A	938 / 943	32 / 32	AC	CR	P	04-23-2009	
S135 / S136	E / W	948	GM	760	22.5	0		A	953 / 958	32 / 32	AC	CR	P	04-23-2009	
S135 / S136	E / W	948	GM	760	22.5	470.5		A	953 / 958	32 / 32	AC	CR	P	04-23-2009	
S138 / S139	E / W	1000	GM	760	22.5	493		A	1010 / 1015	32 / 32	AC	CR	P	04-23-2009	
S135 / S138	N / S	1016	GM	760	321	314	43	A	1600 / 1605	30 / 30	IB	CR	P	04-23-2009	
S136 / S138	N / S	1104	GM	760	93	407		A	1600 / 1605	30 / 30	IB	CR	P	04-23-2009	
S136 / S139	N / S	1120	GM	760	317	224	44	A	1600 / 1605	30 / 30	IB	CR	P	04-23-2009	
S137 / S139	N / S	1200	GM	760	15	239		A	1600 / 1605	30 / 30	IB	CR	P	04-23-2009	
S144 / S145	E / W	1307	GM	760	22.5	261.5		A	1315 / 1320	32 / 32	AC	CR	P	04-23-2009	
S143 / S144	E / W	1320	GM	760	22.5	284		A	1330 / 1335	32 / 32	AC	CR	P	04-23-2009	
S146 / S147	E / W	1334	GM	760	22.5	306.5		A	1342 / 1347	32 / 32	AC	CR	P	04-23-2009	
S142 / S146	N / S	1345	GM	760	72	378.5		A	810 / 815	30 / 30	IB	CR	P	04-24-2009	
S143 / S146	N / S	1355	GM	760	125	3.5	45	A	810 / 815	30 / 30	IB	CR	P	04-24-2009	
S143 / S147	N / S	1411	GM	760	285	288.5		A	810 / 815	30 / 30	IB	CR	P	04-24-2009	

Sheet Total 1408 288.5 **Destructive Carry Over**
Total to Date 5788.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/23/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 5788.5
Welder Tech. Carry Over 288.5 288.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S144 / S147	N / S	1450	GM	760	130	418.5		A	810 / 815	30 / 30	IB	CR	P	04-24-2009	
S144 / S148	N / S	1506	GM	760	75	493.5		A	810 / 815	30 / 30	IB	CR	P	04-24-2009	
S145 / S148	N / S	1516	GM	760	62	55.5	46	A	810 / 815	30 / 30	IB	CR	P	04-24-2009	

Sheet Total 267 55.5 **Destructive Carry Over**
Total to Date 6055.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/24/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Project Total Carry Over 8940.5
Welder Tech. Carry Over 59.5 59.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S153 / S156	N / S	1022	EE	52	199	258.5		A	755 / 800	33 / 33	JR	CR	P	04-25-2009	
S153 / S155	N / S	1047	EE	52	137	395.5		A	755 / 800	33 / 33	JR	CR	P	04-25-2009	
S152 / S155	N / S	1105	EE	52	269	164.5	47	A	755 / 800	33 / 33	JR	CR	P	04-25-2009	
S152 / S154	N / S	1139	EE	52	67	231.5		A	755 / 800	35 / 35	JR	CR	P	04-25-2009	
S160 / S162	E / W	1154	EE	52	22.5	254		A	1159 / 1204	32 / 32	AC	CR	P	04-24-2009	
S163 / S164	E / W	1317	EE	52	10	264		A	1333 / 1338	32 / 32	AC	CR	P	04-24-2009	
S164 / S165	E / W	1324	EE	52	10	274		A	1328 / 1333	30 / 30	AC	CR	P	04-24-2009	
S160 / S165	N / S	1335	EE	52	69	343		A	740 / 745	33 / 33	AC	CR	P	04-25-2009	
S160 / S164	N / S	1343	EE	52	20	363		A	740 / 745	33 / 33	AC	CR	P	04-25-2009	
S162 / S164	N / S	1345	EE	52	48	411		A	745 / 750	33 / 33	AC	CR	P	04-25-2009	
S162 / S163	N / S	1350	EE	52	56	467		A	745 / 750	33 / 33	AC	CR	P	04-25-2009	
S167 / S169	S / N	1524	EE	52	95	62	48	A	1619 / 1624	32 / 32	AC	CR	P	04-24-2009	z2 1624/1629 32/32
S168 / S169	S / N	1537	EE	52	37	199		A	1619 / 1624	32 / 32	AC	CR	P	04-24-2009	
S172 / S173	N / S	1545	EE	52	33	232		A	1659 / 1704	30 / 30	AC	CR	P	04-24-2009	
S171 / S173	N / S	1549	EE	52	100	162		A	1659 / 1704	30 / 30	AC	CR	P	04-24-2009	

Sheet Total 1172.5 162 **Destructive Carry Over**
Total to Date 10113

macine no. 52 removed from production after seaming 171/173 due to burnouts

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/24/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S180 / S181	N / S	1658	EE	500	64	64		A	838 / 843	35 / 35	JR	CR	P	04-25-2009	

Sheet Total 64 | 64 **Destructive Carry Over**
Total to Date 64

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/24/2009
S&ME Project No.: 1356-06-825
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Project Total Carry Over 7994.5
Welder Tech. Carry Over 61.5 61.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S96 / S152	S / N	955	HC	522	41	102.5		A	810 / 815	35 / 35	JR	CR	P	04-25-2009	
S95 / S152	S / N	1005	HC	522	260	362.5		A	810 / 815	35 / 35	JR	CR	P	04-25-2009	
S45 / S153	S / N	1034	HC	522	341	203.5	49	A	810 / 815	35 / 35	JR	CR	P	04-25-2009	
S45 / S152	S / N	1049	HC	522	35	238.5		A	810 / 815	35 / 35	JR	CR	P	04-25-2009	
S160 / S161	E / W	1150	HC	522	10	248.5		A	1207 / 1212	32 / 32	AC	CR	P	04-24-2009	
S158 / S161	N / S	1305	HC	522	144	392.5		A	720 / 725	30 / 30	IB	CR	P	04-25-2009	
S158 / S160	N / S	1324	HC	522	234	126.5	50	A	720 / 725	30 / 30	IB	CR	P	04-25-2009	
S92 / S166	S / N	1348	HC	522	128	254.5		A	1512 / 1517	32 / 32	AC	CR	P	04-24-2009	
S157 / S160	N / S	1355	HC	522	115	369.5		A	720 / 725	30 / 30	IB	CR	P	04-25-2009	
S157 / S162	N / S	1410	HC	522	99	468.5		A	720 / 725	30 / 30	IB	CR	P	04-25-2009	
S166 / S167	S / N	1515	HC	522	95	63.5	51	A	1605 / 1610	32 / 32	AC	CR	P	04-24-2009	
S166 / S168	S / N	1528	HC	522	35	98.5		A	1605 / 1610	32 / 32	AC	CR	P	04-24-2009	
S170 / S172	N / S	1541	HC	522	34	231.5		A	1647 / 1652	32 / 32	AC	CR	P	04-24-2009	
S170 / S171	N / S	1546	HC	522	99	197.5		A	1647 / 1652	32 / 32	AC	CR	P	04-24-2009	
S174 / S175	N / S	1615	HC	522	57	288.5		A	1716 / 1721	32 / 32	AC	CR	P	04-24-2009	

Sheet Total 1727 288.5 **Destructive Carry Over**
Total to Date 9721.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/24/2009
S&ME Project No.: 1356-06-825
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Project Location: Belmont, North Carolina
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Project Total Carry Over 9721.5
Welder Tech. Carry Over 288.5 288.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S177 / S178	N / S	1645	HC	522	8	296.5		A	830 / 835	37 / 37	JR	CR	P	04-25-2009	
S176 / S178	N / S	1646	HC	522	50	346.5		A	830 / 835	37 / 37	JR	CR	P	04-25-2009	
S179 / S180	N / S	1655	HC	522	62	408.5		A	835 / 840	32 / 32	AC	CR	P	04-25-2009	
S183 / S184	E / W	1720	HC	522	43	451.5		A	720 / 725	30 / 30	AC	CR	P	04-25-2009	
S185 / S186	E / W	1730	HC	522	19	470.5		A	805 / 810	31 / 30	AC	CR	P	04-25-2009	

Sheet Total 182 470.5 **Destructive Carry Over**
Total to Date 9903.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/24/2009
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Project Total Carry Over 6055.5
Welder Tech. Carry Over 55.5 55.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S152 / S153	E / W	1001	GM	760	22.5	78		A	1008 / 1013	30 / 30	AC	CR	P	04-24-2009	
S155 / S156	E / W	1022	GM	760	22.5	100.5		A	1035 / 1040	31 / 31	AC	CR	P	04-24-2009	
S157 / S158	E / W	1036	GM	760	22.5	123		A	1050 / 1055	32 / 32	AC	CR	P	04-24-2009	
S154 / S155	E / W	1057	GM	760	22.5	145.5		A	1105 / 1110	32 / 32	AC	CR	P	04-24-2009	
S158 / S159	E / W	1115	GM	760	22.5	168		A	1128 / 1133	30 / 30	AC	CR	P	04-24-2009	
S156 / S159	N / S	1127	GM	760	63	231		A	745 / 750	33 / 33	JR	CR	P	04-25-2009	
S156 / S158	N / S	1139	GM	760	135	366		A	745 / 750	33 / 33	JR	CR	P	04-25-2009	
S155 / S158	N / S	1158	GM	760	259	125	52	A	745 / 750	33 / 33	JR	CR	P	04-25-2009	
S155 / S157	N / S	1243	GM	760	147	272		A	745 / 750	33 / 33	JR	CR	P	04-25-2009	
S154 / S157	N / S	1313	GM	760	66	338		A	745 / 750	33 / 33	JR	CR	P	04-25-2009	
S167 / S168	E / W	1500	GM	760	22.5	360.5		A	1506 / 1511	32 / 32	AC	CR	P	04-24-2009	
S169 / S170	N / S	1511	GM	760	134	494.5		A	1630 / 1635	31 / 31	AC	CR	P	04-24-2009	
S171 / S172	E / W	1531	GM	760	22.5	17	53	A	1535 / 1540	30 / 30	IB	CR	P	04-24-2009	
S173 / S174	N / S	1539	GM	760	129	146		A	1707 / 1712	32 / 32	AC	CR	P	04-24-2009	
S176 / S177	E / W	1627	GM	760	22.5	168.5		A	1638 / 1644	32 / 32	AC	CR	P	04-24-2009	

Sheet Total 1113 168.5 **Destructive Carry Over**
Total to Date 7168.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/24/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 37 of 41

Project Total Carry Over 7168.5
Welder Tech. Carry Over 168.5 168.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S175 / S177	N / S	1641	GM	760	8	176.5		A	828 / 833	30 / 30	AC	CR	P	04-25-2009	
S175 / S176	N / S	1644	GM	760	52	228.5		A	828 / 833	30 / 30	AC	CR	P	04-25-2009	
S178 / S179	N / S	1653	GM	760	59	287.5		A	832 / 837	30 / 30	JR	CR	P	04-25-2009	
S181 / S182	N / S	1702	GM	760	65	352.5		A	840 / 845	32 / 32	AC	CR	P	04-25-2009	
S184 / S185	E / W	1725	GM	760	38	390.5		A	727 / 732	32 / 31	AC	CR	P	04-25-2009	

Sheet Total 222 390.5 **Destructive Carry Over**
Total to Date 7390.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/25/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 38 of 41

Project Total Carry Over 9903.5
Welder Tech. Carry Over 470.5 470.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S149 / S159	N / S	749	HC	522	59	29.5	54	A	937 / 942	32 / 32	JR	CR	P	04-25-2009	
S149 / S158	N / S	758	HC	522	29	58.5		A	937 / 942	32 / 32	JR	CR	P	04-25-2009	
S149 / S161	N / S	805	HC	522	132	190.5		A	937 / 942	32 / 32	JR	CR	P	04-25-2009	
S149 / S160	N / S	829	HC	522	50	240.5		A	937 / 942	32 / 32	JR	CR	P	04-25-2009	
S150 / S160	N / S	840	HC	522	231	471.5		A	937 / 942	32 / 32	JR	CR	P	04-25-2009	z2 945/950 32/32
S150 / S165	N / S	919	HC	522	50	21.5	55	A	945 / 950	32 / 32	JR	CR	P	04-25-2009	
S150 / S164	N / S	925	HC	522	68	89.5		A	945 / 950	32 / 32	JR	CR	P	04-25-2009	
S150 / S163	N / S	933	HC	522	56	145.5		A	945 / 950	32 / 32	JR	CR	P	04-25-2009	

Sheet Total 675 145.5 **Destructive Carry Over**
Total to Date 10578.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/25/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 39 of 41

Project Total Carry Over 7390.5
Welder Tech. Carry Over 390.5 | 390.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S182 / S183	N / S	825	GM	760	22.5	413		A	843 / 848	33 / 33	JR	CR	P	04-25-2009	
S182 / S184	N / S	829	GM	760	22.5	435.5		A	843 / 848	33 / 33	JR	CR	P	04-25-2009	
S182 / S185	N / S	834	GM	760	22.5	458		A	843 / 848	33 / 33	JR	CR	P	04-25-2009	
S182 / S186	N / S	839	GM	760	4	462		A	843 / 848	33 / 33	JR	CR	P	04-25-2009	
S94 / S166	E / W	844	GM	760	22.5	484.5		A	922 / 927	33 / 33	JR	CR	P	04-25-2009	
S94 / S168	E / W	846	GM	760	5	489.5		A	922 / 927	33 / 33	JR	CR	P	04-25-2009	
S96 / S168	E / W	846	GM	760	19	8.5	56	A	919 / 924	33 / 33	JR	CR	P	04-25-2009	z2 922/927 33/33
S154 / S169	E / W	858	GM	760	1	9.5		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S154 / S170	E / W	858	GM	760	22.5	32		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S157 / S170	E / W	900	GM	760	1	33		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S157 / S172	E / W	900	GM	760	22.5	55.5		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S162 / S172	E / W	903	GM	760	1	56.5		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S162 / S173	E / W	903	GM	760	22.5	79		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S163 / S173	E / W	908	GM	760	1	80		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S163 / S174	E / W	908	GM	760	9	89		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	

Sheet Total 198.5 | 89 **Destructive Carry Over**
Total to Date 7589

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/25/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 40 of 41

Project Total Carry Over 7589
Welder Tech. Carry Over 89 89

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
S150 / S174	N / S	910	GM	760	5.5	94.5		A	953 / 958	32 / 32	JR	CR	P	04-25-2009	
S151 / S174	N / S	912	GM	760	77	171.5		A	953 / 958	32 / 32	JR	CR	P	04-25-2009	
S151 / S175	E / W	922	GM	760	13.5	185		A	953 / 958	32 / 32	JR	CR	P	04-25-2009	
S152 / S159	E / W	924	GM	760	22.5	207.5		A	919 / 924	33 / 33	JR	CR	P	04-25-2009	
S148 / S175	E / W	924	GM	760	10	217.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S148 / S177	E / W	929	GM	760	11	228.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S145 / S177	E / W	931	GM	760	11	239.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S145 / S178	E / W	932	GM	760	13	252.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S141 / S178	E / W	934	GM	760	11	263.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S141 / S179	E / W	936	GM	760	12	275.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S139 / S179	E / W	938	GM	760	10	285.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S139 / S180	E / W	939	GM	760	12	297.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S137 / S180	E / W	940	GM	760	12	309.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S137 / S181	E / W	941	GM	760	12	321.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S134 / S181	E / W	943	GM	760	12	333.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	

Sheet Total 244.5 333.5 **Destructive Carry Over**
Total to Date 7833.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 04/25/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 41 of 41

Project Total Carry Over 7833.5
Welder Tech. Carry Over 333.5 333.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
S134 / S182	SE / NW	944	GM	760	18	351.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S131 / S182	E / W	949	GM	760	13	364.5		A	955 / 1000	32 / 32	JR	CR	P	04-25-2009	
S131 / S183	E / W	951	GM	760	41	405.5		A	1003 / 1008	34 / 34	JR	CR	P	04-25-2009	

Sheet Total 72 405.5 **Destructive Carry Over**
Total to Date 7905.5

CQA Personnel: Cedric Ruhl

Secondary HDPE Geomembrane Destructive Laboratory Test Results

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S1
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	157.0	Elongation
S2	174.0	Elongation
S3	158.0	Elongation
S4	170.0	Elongation
S5	174.0	Elongation
Average	166.6	*FTB - Film Tear Bond
Standard Deviation	7.6	
Maximum	174.0	
Minimum	157.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	133.0	FTB
P1B	106.0	FTB
P2A	138.0	FTB
P2B	118.0	FTB
P3A	125.0	FTB
P3B	108.0	FTB
P4A	140.0	FTB
P4B	108.0	FTB
P5A	123.0	FTB
P5B	101.0	FTB
Average	120.0	*FTB - Film Tear Bond
Standard Deviation	13.3	
Maximum	140.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S2
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	162.0	Elongation
S2	176.0	Elongation
S3	164.0	Elongation
S4	171.0	Elongation
S5	164.0	Elongation
Average	167.4	*FTB - Film Tear Bond
Standard Deviation	5.3	
Maximum	176.0	
Minimum	162.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	120.0	FTB
P1B	104.0	FTB
P2A	122.0	FTB
P2B	112.0	FTB
P3A	131.0	FTB
P3B	105.0	FTB
P4A	110.0	FTB
P4B	104.0	FTB
P5A	115.0	FTB
P5B	111.0	FTB
Average	113.4	*FTB - Film Tear Bond
Standard Deviation	8.3	
Maximum	131.0	
Minimum	104.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S3
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	140.0	Elongation
S2	156.0	Elongation
S3	138.0	Elongation
S4	152.0	Elongation
S5	137.0	Elongation
Average	144.6	*FTB - Film Tear Bond
Standard Deviation	7.8	
Maximum	156.0	
Minimum	137.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	137.0	FTB
P1B	134.0	FTB
P2A	139.0	FTB
P2B	142.0	Elongation
P3A	134.0	FTB
P3B	143.0	FTB
P4A	146.0	FTB
P4B	144.0	FTB
P5A	132.0	FTB
P5B	124.0	FTB
Average	137.5	*FTB - Film Tear Bond
Standard Deviation	6.4	
Maximum	146.0	
Minimum	124.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S4
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	158.0	Elongation
S2	175.0	Elongation
S3	161.0	Elongation
S4	173.0	Elongation
S5	159.0	Elongation
Average	165.2	*FTB - Film Tear Bond
Standard Deviation	7.3	
Maximum	175.0	
Minimum	158.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	109.0	FTB
P1B	114.0	FTB
P2A	111.0	FTB
P2B	117.0	FTB
P3A	109.0	FTB
P3B	124.0	FTB
P4A	123.0	FTB
P4B	120.0	FTB
P5A	105.0	FTB
P5B	104.0	FTB
Average	113.6	*FTB - Film Tear Bond
Standard Deviation	6.8	
Maximum	124.0	
Minimum	104.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S5
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	154.0	Elongation
S2	170.0	Elongation
S3	157.0	Elongation
S4	169.0	Elongation
S5	159.0	Elongation
Average	161.8	*FTB - Film Tear Bond
Standard Deviation	6.5	
Maximum	170.0	
Minimum	154.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	111.0	FTB
P1B	118.0	FTB
P2A	121.0	FTB
P2B	121.0	FTB
P3A	109.0	FTB
P3B	106.0	FTB
P4A	117.0	FTB
P4B	103.0	FTB
P5A	115.0	FTB
P5B	109.0	FTB
Average	113.0	*FTB - Film Tear Bond
Standard Deviation	6.0	
Maximum	121.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S6
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	153.0	Elongation
S2	167.0	Elongation
S3	157.0	Elongation
S4	169.0	Elongation
S5	154.0	Elongation
Average	160.0	*FTB - Film Tear Bond
Standard Deviation	6.7	
Maximum	169.0	
Minimum	153.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	118.0	FTB
P1B	99.0	FTB
P2A	122.0	FTB
P2B	108.0	FTB
P3A	104.0	FTB
P3B	114.0	FTB
P4A	117.0	FTB
P4B	132.0	FTB
P5A	117.0	FTB
P5B	100.0	FTB
Average	113.1	*FTB - Film Tear Bond
Standard Deviation	9.9	
Maximum	132.0	
Minimum	99.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S7
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	143.0	Elongation
S2	172.0	Elongation
S3	144.0	Elongation
S4	162.0	Elongation
S5	148.0	Elongation
Average	153.8	*FTB - Film Tear Bond
Standard Deviation	11.4	
Maximum	172.0	
Minimum	143.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	122.0	FTB
P1B	118.0	FTB
P2A	135.0	FTB
P2B	106.0	FTB
P3A	126.0	FTB
P3B	103.0	FTB
P4A	119.0	FTB
P4B	106.0	FTB
P5A	122.0	FTB
P5B	109.0	FTB
Average	116.6	*FTB - Film Tear Bond
Standard Deviation	9.8	
Maximum	135.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S8
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	130.0	Elongation
S2	167.0	Elongation
S3	162.0	Elongation
S4	162.0	Elongation
S5	155.0	Elongation
Average	155.2	*FTB - Film Tear Bond
Standard Deviation	13.2	
Maximum	167.0	
Minimum	130.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	127.0	FTB
P1B	122.0	FTB
P2A	136.0	FTB
P2B	130.0	FTB
P3A	128.0	FTB
P3B	107.0	FTB
P4A	123.0	FTB
P4B	109.0	FTB
P5A	125.0	FTB
P5B	121.0	FTB
Average	122.8	*FTB - Film Tear Bond
Standard Deviation	8.5	
Maximum	136.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S9
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	156.0	Elongation
S2	168.0	Elongation
S3	154.0	Elongation
S4	167.0	Elongation
S5	164.0	Elongation
Average	161.8	*FTB - Film Tear Bond
Standard Deviation	5.7	
Maximum	168.0	
Minimum	154.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	108.0	FTB
P1B	95.0	FTB
P2A	114.0	FTB
P2B	111.0	FTB
P3A	108.0	FTB
P3B	108.0	FTB
P4A	122.0	FTB
P4B	119.0	FTB
P5A	101.0	FTB
P5B	102.0	FTB
Average	108.8	*FTB - Film Tear Bond
Standard Deviation	7.8	
Maximum	122.0	
Minimum	95.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S10
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	135.0	Elongation
S2	155.0	Elongation
S3	141.0	Elongation
S4	153.0	Elongation
S5	141.0	Elongation
Average	145.0	*FTB - Film Tear Bond
Standard Deviation	7.7	
Maximum	155.0	
Minimum	135.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	126.0	FTB
P1B	138.0	FTB
P2A	147.0	FTB
P2B	147.0	FTB
P3A	127.0	FTB
P3B	142.0	FTB
P4A	149.0	FTB
P4B	140.0	FTB
P5A	114.0	FTB
P5B	132.0	FTB
Average	136.2	*FTB - Film Tear Bond
Standard Deviation	10.7	
Maximum	149.0	
Minimum	114.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S11
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	152.0	Elongation
S2	160.0	Elongation
S3	142.0	Elongation
S4	161.0	Elongation
S5	143.0	Elongation
Average	151.6	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	161.0	
Minimum	142.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	109.0	FTB
P1B	117.0	FTB
P2A	115.0	FTB
P2B	124.0	FTB
P3A	116.0	FTB
P3B	110.0	FTB
P4A	119.0	FTB
P4B	111.0	FTB
P5A	108.0	FTB
P5B	101.0	FTB
Average	113.0	*FTB - Film Tear Bond
Standard Deviation	6.2	
Maximum	124.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S12
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	152.0	Elongation
S2	160.0	Elongation
S3	148.0	Elongation
S4	163.0	Elongation
S5	151.0	Elongation
Average	154.8	*FTB - Film Tear Bond
Standard Deviation	5.7	
Maximum	163.0	
Minimum	148.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	104.0	FTB
P1B	95.0	FTB
P2A	130.0	FTB
P2B	125.0	FTB
P3A	106.0	FTB
P3B	105.0	FTB
P4A	118.0	FTB
P4B	117.0	FTB
P5A	111.0	FTB
P5B	111.0	FTB
Average	112.2	*FTB - Film Tear Bond
Standard Deviation	10.0	
Maximum	130.0	
Minimum	95.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S13
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	151.0	Elongation
S2	165.0	Elongation
S3	146.0	Elongation
S4	169.0	Elongation
S5	150.0	Elongation
Average	156.2	*FTB - Film Tear Bond
Standard Deviation	9.1	
Maximum	169.0	
Minimum	146.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	125.0	FTB
P1B	110.0	FTB
P2A	140.0	FTB
P2B	124.0	FTB
P3A	122.0	FTB
P3B	114.0	FTB
P4A	124.0	FTB
P4B	140.0	FTB
P5A	123.0	FTB
P5B	118.0	FTB
Average	124.0	*FTB - Film Tear Bond
Standard Deviation	9.2	
Maximum	140.0	
Minimum	110.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S14
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	152.0	Elongation
S2	166.0	Elongation
S3	152.0	Elongation
S4	162.0	Elongation
S5	153.0	Elongation
Average	157.0	*FTB - Film Tear Bond
Standard Deviation	5.9	
Maximum	166.0	
Minimum	152.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	124.0	FTB
P1B	106.0	FTB
P2A	136.0	FTB
P2B	115.0	FTB
P3A	124.0	FTB
P3B	108.0	FTB
P4A	141.0	FTB
P4B	124.0	FTB
P5A	122.0	FTB
P5B	107.0	FTB
Average	120.7	*FTB - Film Tear Bond
Standard Deviation	11.3	
Maximum	141.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S15
Tested by: Cedric Ruhl
Date Tested: 04/11/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	149.0	Elongation
S2	148.0	Elongation
S3	150.0	Elongation
S4	163.0	Elongation
S5	151.0	Elongation
Average	152.2	*FTB - Film Tear Bond
Standard Deviation	5.5	
Maximum	163.0	
Minimum	148.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	120.0	FTB
P1B	113.0	FTB
P2A	134.0	FTB
P2B	137.0	FTB
P3A	118.0	FTB
P3B	116.0	FTB
P4A	129.0	FTB
P4B	125.0	FTB
P5A	121.0	FTB
P5B	114.0	FTB
Average	122.7	*FTB - Film Tear Bond
Standard Deviation	7.9	
Maximum	137.0	
Minimum	113.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S16
Tested by: Kyle Baucom
Date Tested: 04/17/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	148.0	Elongation
S2	169.0	Elongation
S3	146.0	Elongation
S4	177.0	Elongation
S5	158.0	Elongation
Average	159.6	*FTB - Film Tear Bond
Standard Deviation	11.9	
Maximum	177.0	
Minimum	146.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	132.0	FTB
P1B	144.0	FTB
P2A	137.0	FTB
P2B	143.0	FTB
P3A	118.0	FTB
P3B	136.0	FTB
P4A	133.0	FTB
P4B	152.0	FTB
P5A	139.0	FTB
P5B	138.0	FTB
Average	137.2	*FTB - Film Tear Bond
Standard Deviation	8.5	
Maximum	152.0	
Minimum	118.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S17
Tested by: Kyle Baucom
Date Tested: 04/17/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	138.0	Elongation
S2	142.0	Elongation
S3	178.0	Elongation
S4	158.0	Elongation
S5	198.0	Elongation
Average	162.8	*FTB - Film Tear Bond
Standard Deviation	22.5	
Maximum	198.0	
Minimum	138.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	108.0	FTB
P1B	98.0	FTB
P2A	122.0	FTB
P2B	101.0	FTB
P3A	109.0	FTB
P3B	104.0	FTB
P4A	120.0	FTB
P4B	115.0	FTB
P5A	114.0	FTB
P5B	121.0	FTB
Average	111.2	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	122.0	
Minimum	98.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S18
Tested by: Kyle Baucom
Date Tested: 04/17/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	181.0	Elongation
S2	179.0	Elongation
S3	167.0	Elongation
S4	185.0	Elongation
S5	186.0	Elongation
Average	179.6	*FTB - Film Tear Bond
Standard Deviation	6.8	
Maximum	186.0	
Minimum	167.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	106.0	FTB
P1B	83.0	FTB
P2A	119.0	FTB
P2B	90.0	FTB
P3A	94.0	FTB
P3B	94.0	FTB
P4A	109.0	FTB
P4B	64.0	FTB
P5A	104.0	FTB
P5B	99.0	FTB
Average	96.2	*FTB - Film Tear Bond
Standard Deviation	14.5	
Maximum	119.0	
Minimum	64.0	
Pass/Fail [1,2,3]	FAIL	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S18A
Tested by: Cedric Ruhl
Date Tested: 04/21/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	175.0	Elongation
S3	163.0	Elongation
S4	172.0	Elongation
S5	165.0	Elongation
Average	167.6	*FTB - Film Tear Bond
Standard Deviation	5.0	
Maximum	175.0	
Minimum	163.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	111.0	FTB
P1B	107.0	FTB
P2A	125.0	FTB
P2B	109.0	FTB
P3A	110.0	FTB
P3B	106.0	FTB
P4A	119.0	FTB
P4B	121.0	FTB
P5A	99.0	FTB
P5B	90.0	FTB
Average	109.7	*FTB - Film Tear Bond
Standard Deviation	9.9	
Maximum	125.0	
Minimum	90.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S18B
Tested by: Cedric Ruhl
Date Tested: 04/21/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	158.0	Elongation
S2	173.0	Elongation
S3	161.0	Elongation
S4	177.0	Elongation
S5	164.0	Elongation
Average	166.6	*FTB - Film Tear Bond
Standard Deviation	7.2	
Maximum	177.0	
Minimum	158.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	126.0	FTB
P1B	106.0	FTB
P2A	123.0	FTB
P2B	119.0	FTB
P3A	119.0	FTB
P3B	104.0	FTB
P4A	131.0	FTB
P4B	114.0	FTB
P5A	130.0	FTB
P5B	129.0	FTB
Average	120.1	*FTB - Film Tear Bond
Standard Deviation	9.1	
Maximum	131.0	
Minimum	104.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S19
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	176.0	Elongation
S3	166.0	Elongation
S4	182.0	Elongation
S5	167.0	Elongation
Average	170.8	*FTB - Film Tear Bond
Standard Deviation	7.1	
Maximum	182.0	
Minimum	163.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	112.0	FTB
P1B	101.0	FTB
P2A	122.0	FTB
P2B	118.0	FTB
P3A	115.0	FTB
P3B	105.0	FTB
P4A	105.0	FTB
P4B	117.0	FTB
P5A	103.0	FTB
P5B	114.0	FTB
Average	111.2	*FTB - Film Tear Bond
Standard Deviation	6.8	
Maximum	122.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S20
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	159.0	Elongation
S2	183.0	Elongation
S3	165.0	Elongation
S4	179.0	Elongation
S5	164.0	Elongation
Average	170.0	*FTB - Film Tear Bond
Standard Deviation	9.3	
Maximum	183.0	
Minimum	159.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	110.0	FTB
P1B	107.0	FTB
P2A	129.0	FTB
P2B	104.0	FTB
P3A	127.0	FTB
P3B	108.0	FTB
P4A	120.0	FTB
P4B	132.0	FTB
P5A	105.0	FTB
P5B	122.0	FTB
Average	116.4	*FTB - Film Tear Bond
Standard Deviation	10.2	
Maximum	132.0	
Minimum	104.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S21
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	155.0	Elongation
S2	176.0	Elongation
S3	164.0	Elongation
S4	168.0	Elongation
S5	177.0	Elongation
Average	168.0	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	177.0	
Minimum	155.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	110.0	FTB
P1B	95.0	FTB
P2A	124.0	FTB
P2B	133.0	FTB
P3A	113.0	FTB
P3B	119.0	FTB
P4A	122.0	FTB
P4B	136.0	FTB
P5A	125.0	FTB
P5B	144.0	FTB
Average	122.1	*FTB - Film Tear Bond
Standard Deviation	13.3	
Maximum	144.0	
Minimum	95.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S22
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	162.0	Elongation
S2	173.0	Elongation
S3	164.0	Elongation
S4	175.0	Elongation
S5	158.0	Elongation
Average	166.4	*FTB - Film Tear Bond
Standard Deviation	6.5	
Maximum	175.0	
Minimum	158.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	124.0	FTB
P1B	103.0	FTB
P2A	136.0	FTB
P2B	120.0	FTB
P3A	109.0	FTB
P3B	120.0	FTB
P4A	138.0	FTB
P4B	115.0	FTB
P5A	108.0	FTB
P5B	113.0	FTB
Average	118.6	*FTB - Film Tear Bond
Standard Deviation	11.0	
Maximum	138.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S23
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	159.0	Elongation
S2	172.0	Elongation
S3	161.0	Elongation
S4	161.0	Elongation
S5	173.0	Elongation
Average	165.2	*FTB - Film Tear Bond
Standard Deviation	6.0	
Maximum	173.0	
Minimum	159.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	113.0	FTB
P1B	107.0	FTB
P2A	126.0	FTB
P2B	113.0	FTB
P3A	112.0	FTB
P3B	109.0	FTB
P4A	120.0	FTB
P4B	125.0	FTB
P5A	107.0	FTB
P5B	114.0	FTB
Average	114.6	*FTB - Film Tear Bond
Standard Deviation	6.5	
Maximum	126.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S24
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	162.0	Elongation
S2	173.0	Elongation
S3	129.0	Elongation
S4	176.0	Elongation
S5	177.0	Elongation
Average	163.4	*FTB - Film Tear Bond
Standard Deviation	18.0	
Maximum	177.0	
Minimum	129.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	127.0	Elongation
P1B	119.0	Elongation
P2A	136.0	Elongation
P2B	144.0	Elongation
P3A	125.0	Elongation
P3B	122.0	Elongation
P4A	138.0	Elongation
P4B	139.0	Elongation
P5A	139.0	Elongation
P5B	129.0	Elongation
Average	131.8	*FTB - Film Tear Bond
Standard Deviation	8.0	
Maximum	144.0	
Minimum	119.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S25
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	150.0	Elongation
S2	168.0	Elongation
S3	154.0	Elongation
S4	170.0	Elongation
S5	162.0	Elongation
Average	160.8	*FTB - Film Tear Bond
Standard Deviation	7.8	
Maximum	170.0	
Minimum	150.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	124.0	FTB
P1B	129.0	FTB
P2A	142.0	FTB
P2B	145.0	FTB
P3A	100.0	FTB
P3B	126.0	FTB
P4A	129.0	FTB
P4B	146.0	FTB
P5A	137.0	FTB
P5B	140.0	FTB
Average	131.8	*FTB - Film Tear Bond
Standard Deviation	13.0	
Maximum	146.0	
Minimum	100.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S26
Tested by: Cedric Ruhl
Date Tested: 04/18/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	157.0	Elongation
S2	167.0	Elongation
S3	155.0	Elongation
S4	167.0	Elongation
S5	169.0	Elongation
Average	163.0	*FTB - Film Tear Bond
Standard Deviation	5.8	
Maximum	169.0	
Minimum	155.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	119.0	FTB
P1B	125.0	FTB
P2A	131.0	FTB
P2B	118.0	FTB
P3A	116.0	FTB
P3B	115.0	FTB
P4A	129.0	FTB
P4B	129.0	FTB
P5A	129.0	FTB
P5B	130.0	FTB
Average	124.1	*FTB - Film Tear Bond
Standard Deviation	6.1	
Maximum	131.0	
Minimum	115.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S27
Tested by: Cedric Ruhl
Date Tested: 04/21/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	153.0	Elongation
S2	170.0	Elongation
S3	159.0	Elongation
S4	171.0	Elongation
S5	156.0	Elongation
Average	161.8	*FTB - Film Tear Bond
Standard Deviation	7.4	
Maximum	171.0	
Minimum	153.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	110.0	FTB
P1B	125.0	FTB
P2A	133.0	FTB
P2B	119.0	FTB
P3A	114.0	FTB
P3B	122.0	FTB
P4A	123.0	FTB
P4B	126.0	FTB
P5A	140.0	FTB
P5B	125.0	FTB
Average	123.7	*FTB - Film Tear Bond
Standard Deviation	8.2	
Maximum	140.0	
Minimum	110.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S28
Tested by: Cedric Ruhl
Date Tested: 04/21/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	152.0	Elongation
S2	167.0	Elongation
S3	153.0	Elongation
S4	165.0	Elongation
S5	166.0	Elongation
Average	160.6	*FTB - Film Tear Bond
Standard Deviation	6.7	
Maximum	167.0	
Minimum	152.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	110.0	FTB
P1B	101.0	FTB
P2A	120.0	FTB
P2B	118.0	FTB
P3A	100.0	FTB
P3B	104.0	FTB
P4A	122.0	FTB
P4B	116.0	FTB
P5A	114.0	FTB
P5B	103.0	FTB
Average	110.8	*FTB - Film Tear Bond
Standard Deviation	7.9	
Maximum	122.0	
Minimum	100.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S29
Tested by: Cedric Ruhl
Date Tested: 04/21/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	157.0	Elongation
S2	162.0	Elongation
S3	157.0	Elongation
S4	169.0	Elongation
S5	167.0	Elongation
Average	162.4	*FTB - Film Tear Bond
Standard Deviation	5.0	
Maximum	169.0	
Minimum	157.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	114.0	FTB
P1B	109.0	FTB
P2A	119.0	FTB
P2B	130.0	FTB
P3A	118.0	FTB
P3B	109.0	FTB
P4A	121.0	FTB
P4B	117.0	FTB
P5A	120.0	FTB
P5B	106.0	FTB
Average	116.3	*FTB - Film Tear Bond
Standard Deviation	6.7	
Maximum	130.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S30
Tested by: Cedric Ruhl
Date Tested: 04/21/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	138.0	Elongation
S2	153.0	Elongation
S3	138.0	Elongation
S4	140.0	Elongation
S5	151.0	Elongation
Average	144.0	*FTB - Film Tear Bond
Standard Deviation	6.6	
Maximum	153.0	
Minimum	138.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	119.0	FTB
P1B	114.0	FTB
P2A	128.0	FTB
P2B	129.0	FTB
P3A	109.0	FTB
P3B	119.0	FTB
P4A	131.0	FTB
P4B	132.0	FTB
P5A	135.0	FTB
P5B	132.0	FTB
Average	124.8	*FTB - Film Tear Bond
Standard Deviation	8.4	
Maximum	135.0	
Minimum	109.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S31
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	166.0	Elongation
S2	178.0	Elongation
S3	168.0	Elongation
S4	180.0	Elongation
S5	184.0	Elongation
Average	175.2	*FTB - Film Tear Bond
Standard Deviation	7.0	
Maximum	184.0	
Minimum	166.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	125.0	FTB
P1B	114.0	FTB
P2A	136.0	FTB
P2B	126.0	FTB
P3A	123.0	FTB
P3B	124.0	FTB
P4A	143.0	FTB
P4B	121.0	FTB
P5A	122.0	FTB
P5B	116.0	FTB
Average	125.0	*FTB - Film Tear Bond
Standard Deviation	8.2	
Maximum	143.0	
Minimum	114.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S32
Tested by: Cedric Ruhl
Date Tested: 04/26/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	160.0	Elongation
S2	173.0	Elongation
S3	164.0	Elongation
S4	176.0	Elongation
S5	181.0	Elongation
Average	170.8	*FTB - Film Tear Bond
Standard Deviation	7.7	
Maximum	181.0	
Minimum	160.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	116.0	FTB
P1B	105.0	FTB
P2A	125.0	FTB
P2B	118.0	FTB
P3A	128.0	FTB
P3B	112.0	FTB
P4A	129.0	FTB
P4B	126.0	FTB
P5A	125.0	FTB
P5B	115.0	FTB
Average	119.9	*FTB - Film Tear Bond
Standard Deviation	7.5	
Maximum	129.0	
Minimum	105.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S33
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	160.0	Elongation
S2	181.0	Elongation
S3	165.0	Elongation
S4	179.0	Elongation
S5	167.0	Elongation
Average	170.4	*FTB - Film Tear Bond
Standard Deviation	8.2	
Maximum	181.0	
Minimum	160.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	104.0	FTB
P1B	108.0	FTB
P2A	127.0	FTB
P2B	127.0	FTB
P3A	132.0	FTB
P3B	107.0	FTB
P4A	137.0	FTB
P4B	117.0	FTB
P5A	119.0	FTB
P5B	103.0	FTB
Average	118.1	*FTB - Film Tear Bond
Standard Deviation	11.7	
Maximum	137.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S34
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	164.0	Elongation
S2	183.0	Elongation
S3	166.0	Elongation
S4	179.0	Elongation
S5	164.0	Elongation
Average	171.2	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	183.0	
Minimum	164.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	141.0	FTB
P1B	112.0	FTB
P2A	134.0	FTB
P2B	124.0	FTB
P3A	132.0	FTB
P3B	101.0	FTB
P4A	143.0	FTB
P4B	122.0	FTB
P5A	129.0	FTB
P5B	115.0	FTB
Average	125.3	*FTB - Film Tear Bond
Standard Deviation	12.6	
Maximum	143.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S35
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	173.0	Elongation
S3	159.0	Elongation
S4	175.0	Elongation
S5	168.0	Elongation
Average	167.6	*FTB - Film Tear Bond
Standard Deviation	6.0	
Maximum	175.0	
Minimum	159.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	94.0	FTB
P1B	95.0	FTB
P2A	121.0	FTB
P2B	126.0	FTB
P3A	103.0	FTB
P3B	105.0	FTB
P4A	119.0	FTB
P4B	118.0	FTB
P5A	106.0	FTB
P5B	104.0	FTB
Average	109.1	*FTB - Film Tear Bond
Standard Deviation	10.6	
Maximum	126.0	
Minimum	94.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S36
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	138.0	Elongation
S2	141.0	Elongation
S3	135.0	Elongation
S4	150.0	Elongation
S5	142.0	Elongation
Average	141.2	*FTB - Film Tear Bond
Standard Deviation	5.0	
Maximum	150.0	
Minimum	135.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	148.0	FTB
P1B	127.0	FTB
P2A	150.0	FTB
P2B	155.0	FTB
P3A	129.0	FTB
P3B	145.0	FTB
P4A	152.0	FTB
P4B	148.0	FTB
P5A	153.0	FTB
P5B	149.0	FTB
Average	145.6	*FTB - Film Tear Bond
Standard Deviation	9.2	
Maximum	155.0	
Minimum	127.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S37
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	146.0	Elongation
S2	163.0	Elongation
S3	147.0	Elongation
S4	159.0	Elongation
S5	153.0	Elongation
Average	153.6	*FTB - Film Tear Bond
Standard Deviation	6.6	
Maximum	163.0	
Minimum	146.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	121.0	FTB
P1B	119.0	FTB
P2A	114.0	FTB
P2B	124.0	FTB
P3A	109.0	FTB
P3B	120.0	FTB
P4A	117.0	FTB
P4B	122.0	FTB
P5A	114.0	FTB
P5B	107.0	FTB
Average	116.7	*FTB - Film Tear Bond
Standard Deviation	5.3	
Maximum	124.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S38
Tested by: Cedric Ruhl
Date Tested: 04/26/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	172.0	Elongation
S2	180.0	Elongation
S3	164.0	Elongation
S4	177.0	Elongation
S5	173.0	Elongation
Average	173.2	*FTB - Film Tear Bond
Standard Deviation	5.4	
Maximum	180.0	
Minimum	164.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	134.0	FTB
P1B	105.0	FTB
P2A	120.0	FTB
P2B	140.0	FTB
P3A	115.0	FTB
P3B	97.0	FTB
P4A	120.0	FTB
P4B	126.0	FTB
P5A	112.0	FTB
P5B	137.0	FTB
Average	120.6	*FTB - Film Tear Bond
Standard Deviation	13.3	
Maximum	140.0	
Minimum	97.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S39
Tested by: Cedric Ruhl
Date Tested: 04/26/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	162.0	Elongation
S2	172.0	Elongation
S3	157.0	Elongation
S4	173.0	Elongation
S5	164.0	Elongation
Average	165.6	*FTB - Film Tear Bond
Standard Deviation	6.1	
Maximum	173.0	
Minimum	157.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	108.0	FTB
P1B	104.0	FTB
P2A	116.0	FTB
P2B	116.0	FTB
P3A	102.0	FTB
P3B	108.0	FTB
P4A	116.0	FTB
P4B	117.0	FTB
P5A	110.0	FTB
P5B	107.0	FTB
Average	110.4	*FTB - Film Tear Bond
Standard Deviation	5.2	
Maximum	117.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S40
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	135.0	Elongation
S2	147.0	Elongation
S3	135.0	Elongation
S4	149.0	Elongation
S5	134.0	Elongation
Average	140.0	*FTB - Film Tear Bond
Standard Deviation	6.6	
Maximum	149.0	
Minimum	134.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	116.0	FTB
P1B	123.0	FTB
P2A	134.0	FTB
P2B	119.0	FTB
P3A	106.0	FTB
P3B	110.0	FTB
P4A	107.0	FTB
P4B	127.0	FTB
P5A	100.0	FTB
P5B	122.0	FTB
Average	116.4	*FTB - Film Tear Bond
Standard Deviation	10.1	
Maximum	134.0	
Minimum	100.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S41
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	151.0	Elongation
S3	162.0	Elongation
S4	145.0	Elongation
S5	150.0	Elongation
Average	154.2	*FTB - Film Tear Bond
Standard Deviation	7.1	
Maximum	163.0	
Minimum	145.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	144.0	FTB
P1B	123.0	FTB
P2A	114.0	FTB
P2B	106.0	FTB
P3A	144.0	FTB
P3B	123.0	FTB
P4A	126.0	FTB
P4B	110.0	FTB
P5A	115.0	FTB
P5B	127.0	FTB
Average	123.2	*FTB - Film Tear Bond
Standard Deviation	12.3	
Maximum	144.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S42
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	142.0	Elongation
S3	166.0	Elongation
S4	149.0	Elongation
S5	160.0	Elongation
Average	156.0	*FTB - Film Tear Bond
Standard Deviation	9.1	
Maximum	166.0	
Minimum	142.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	116.0	FTB
P1B	124.0	FTB
P2A	115.0	FTB
P2B	105.0	FTB
P3A	115.0	FTB
P3B	128.0	FTB
P4A	108.0	FTB
P4B	107.0	FTB
P5A	102.0	FTB
P5B	115.0	FTB
Average	113.5	*FTB - Film Tear Bond
Standard Deviation	7.8	
Maximum	128.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S43
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	146.0	Elongation
S3	164.0	Elongation
S4	146.0	Elongation
S5	142.0	Elongation
Average	152.2	*FTB - Film Tear Bond
Standard Deviation	9.3	
Maximum	164.0	
Minimum	142.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	139.0	FTB
P1B	125.0	FTB
P2A	121.0	FTB
P2B	114.0	FTB
P3A	139.0	FTB
P3B	129.0	FTB
P4A	108.0	FTB
P4B	124.0	FTB
P5A	125.0	FTB
P5B	112.0	FTB
Average	123.6	*FTB - Film Tear Bond
Standard Deviation	9.9	
Maximum	139.0	
Minimum	108.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S44
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	155.0	Elongation
S2	155.0	Elongation
S3	170.0	Elongation
S4	154.0	Elongation
S5	172.0	Elongation
Average	161.2	*FTB - Film Tear Bond
Standard Deviation	8.0	
Maximum	172.0	
Minimum	154.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	118.0	FTB
P1B	127.0	FTB
P2A	106.0	FTB
P2B	109.0	FTB
P3A	118.0	FTB
P3B	139.0	FTB
P4A	103.0	FTB
P4B	110.0	FTB
P5A	128.0	FTB
P5B	132.0	FTB
Average	119.0	*FTB - Film Tear Bond
Standard Deviation	11.5	
Maximum	139.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S45
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	173.0	Elongation
S2	157.0	Elongation
S3	172.0	Elongation
S4	146.0	Elongation
S5	170.0	Elongation
Average	163.6	*FTB - Film Tear Bond
Standard Deviation	10.5	
Maximum	173.0	
Minimum	146.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	147.0	FTB
P1B	121.0	FTB
P2A	126.0	FTB
P2B	103.0	FTB
P3A	143.0	FTB
P3B	120.0	FTB
P4A	125.0	FTB
P4B	95.0	FTB
P5A	131.0	FTB
P5B	104.0	FTB
Average	121.5	*FTB - Film Tear Bond
Standard Deviation	16.1	
Maximum	147.0	
Minimum	95.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S46
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	173.0	Elongation
S2	155.0	Elongation
S3	167.0	Elongation
S4	158.0	Elongation
S5	173.0	Elongation
Average	165.2	*FTB - Film Tear Bond
Standard Deviation	7.5	
Maximum	173.0	
Minimum	155.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	149.0	FTB
P1B	120.0	FTB
P2A	122.0	FTB
P2B	102.0	FTB
P3A	147.0	FTB
P3B	120.0	FTB
P4A	128.0	FTB
P4B	107.0	FTB
P5A	134.0	FTB
P5B	103.0	FTB
Average	123.2	*FTB - Film Tear Bond
Standard Deviation	15.9	
Maximum	149.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S47
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	177.0	Elongation
S2	154.0	Elongation
S3	182.0	Elongation
S4	142.0	Elongation
S5	157.0	Elongation
Average	162.4	*FTB - Film Tear Bond
Standard Deviation	14.9	
Maximum	182.0	
Minimum	142.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	115.0	FTB
P1B	126.0	FTB
P2A	101.0	FTB
P2B	104.0	FTB
P3A	118.0	FTB
P3B	131.0	FTB
P4A	105.0	FTB
P4B	117.0	FTB
P5A	114.0	FTB
P5B	109.0	FTB
Average	114.0	*FTB - Film Tear Bond
Standard Deviation	9.1	
Maximum	131.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S48
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	182.0	Elongation
S2	166.0	Elongation
S3	178.0	Elongation
S4	160.0	Elongation
S5	161.0	Elongation
Average	169.4	*FTB - Film Tear Bond
Standard Deviation	9.0	
Maximum	182.0	
Minimum	160.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	125.0	FTB
P1B	136.0	FTB
P2A	109.0	FTB
P2B	119.0	FTB
P3A	125.0	FTB
P3B	142.0	FTB
P4A	103.0	FTB
P4B	101.0	FTB
P5A	108.0	FTB
P5B	139.0	FTB
Average	120.7	*FTB - Film Tear Bond
Standard Deviation	14.4	
Maximum	142.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S49
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	157.0	Elongation
S2	137.0	Elongation
S3	158.0	Elongation
S4	144.0	Elongation
S5	159.0	Elongation
Average	151.0	*FTB - Film Tear Bond
Standard Deviation	8.9	
Maximum	159.0	
Minimum	137.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	132.0	FTB
P1B	114.0	FTB
P2A	99.0	FTB
P2B	108.0	FTB
P3A	129.0	FTB
P3B	137.0	FTB
P4A	122.0	FTB
P4B	114.0	FTB
P5A	129.0	FTB
P5B	121.0	FTB
Average	120.5	*FTB - Film Tear Bond
Standard Deviation	11.2	
Maximum	137.0	
Minimum	99.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S50
Tested by: Cedric Ruhl
Date Tested: 04/28/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	186.0	Elongation
S2	170.0	Elongation
S3	183.0	Elongation
S4	168.0	Elongation
S5	171.0	Elongation
Average	175.6	*FTB - Film Tear Bond
Standard Deviation	7.4	
Maximum	186.0	
Minimum	168.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	131.0	FTB
P1B	127.0	FTB
P2A	116.0	FTB
P2B	107.0	FTB
P3A	138.0	FTB
P3B	124.0	FTB
P4A	128.0	FTB
P4B	117.0	FTB
P5A	133.0	FTB
P5B	127.0	FTB
Average	124.8	*FTB - Film Tear Bond
Standard Deviation	8.7	
Maximum	138.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S51
Tested by: Cedric Ruhl
Date Tested: 04/29/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	175.0	Elongation
S2	158.0	Elongation
S3	169.0	Elongation
S4	156.0	Elongation
S5	159.0	Elongation
Average	163.4	*FTB - Film Tear Bond
Standard Deviation	7.3	
Maximum	175.0	
Minimum	156.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	119.0	FTB
P1B	121.0	FTB
P2A	119.0	FTB
P2B	105.0	FTB
P3A	116.0	FTB
P3B	132.0	FTB
P4A	104.0	FTB
P4B	102.0	FTB
P5A	97.0	FTB
P5B	123.0	FTB
Average	113.8	*FTB - Film Tear Bond
Standard Deviation	10.6	
Maximum	132.0	
Minimum	97.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S52
Tested by: Cedric Ruhl
Date Tested: 04/29/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	180.0	Elongation
S2	165.0	Elongation
S3	181.0	Elongation
S4	167.0	Elongation
S5	163.0	Elongation
Average	171.2	*FTB - Film Tear Bond
Standard Deviation	7.7	
Maximum	181.0	
Minimum	163.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	116.0	FTB
P1B	124.0	FTB
P2A	98.0	FTB
P2B	108.0	FTB
P3A	119.0	FTB
P3B	139.0	FTB
P4A	115.0	FTB
P4B	128.0	FTB
P5A	105.0	FTB
P5B	120.0	FTB
Average	117.2	*FTB - Film Tear Bond
Standard Deviation	11.2	
Maximum	139.0	
Minimum	98.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S53
Tested by: Cedric Ruhl
Date Tested: 04/29/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	153.0	Elongation
S2	136.0	Elongation
S3	152.0	Elongation
S4	138.0	Elongation
S5	133.0	Elongation
Average	142.4	*FTB - Film Tear Bond
Standard Deviation	8.4	
Maximum	153.0	
Minimum	133.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	122.0	FTB
P1B	136.0	FTB
P2A	119.0	FTB
P2B	119.0	FTB
P3A	137.0	FTB
P3B	128.0	FTB
P4A	129.0	FTB
P4B	111.0	FTB
P5A	137.0	FTB
P5B	123.0	FTB
Average	126.1	*FTB - Film Tear Bond
Standard Deviation	8.4	
Maximum	137.0	
Minimum	111.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S54
Tested by: Cedric Ruhl
Date Tested: 04/29/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	171.0	Elongation
S2	155.0	Elongation
S3	176.0	Elongation
S4	163.0	Elongation
S5	143.0	Elongation
Average	161.6	*FTB - Film Tear Bond
Standard Deviation	11.7	
Maximum	176.0	
Minimum	143.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	142.0	FTB
P1B	134.0	FTB
P2A	119.0	FTB
P2B	115.0	FTB
P3A	139.0	FTB
P3B	133.0	FTB
P4A	125.0	FTB
P4B	106.0	FTB
P5A	129.0	FTB
P5B	132.0	FTB
Average	127.4	*FTB - Film Tear Bond
Standard Deviation	10.7	
Maximum	142.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S55
Tested by: Cedric Ruhl
Date Tested: 04/29/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	154.0	Elongation
S2	138.0	Elongation
S3	152.0	Elongation
S4	143.0	Elongation
S5	155.0	Elongation
Average	148.4	*FTB - Film Tear Bond
Standard Deviation	6.7	
Maximum	155.0	
Minimum	138.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	123.0	FTB
P1B	126.0	FTB
P2A	99.0	FTB
P2B	113.0	FTB
P3A	116.0	FTB
P3B	124.0	FTB
P4A	115.0	FTB
P4B	105.0	FTB
P5A	111.0	FTB
P5B	126.0	FTB
Average	115.8	*FTB - Film Tear Bond
Standard Deviation	8.7	
Maximum	126.0	
Minimum	99.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Secondary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: S56
Tested by: Cedric Ruhl
Date Tested: 04/29/2009 Date of Summary: 04/30/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	160.0	Elongation
S2	147.0	Elongation
S3	158.0	Elongation
S4	129.0	Elongation
S5	155.0	Elongation
Average	149.8	*FTB - Film Tear Bond
Standard Deviation	11.3	
Maximum	160.0	
Minimum	129.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	138.0	FTB
P1B	143.0	FTB
P2A	135.0	FTB
P2B	129.0	FTB
P3A	128.0	FTB
P3B	146.0	FTB
P4A	129.0	FTB
P4B	125.0	FTB
P5A	146.0	FTB
P5B	142.0	FTB
Average	136.1	*FTB - Film Tear Bond
Standard Deviation	7.6	
Maximum	146.0	
Minimum	125.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

Secondary HDPE Geomembrane
Geomembrane Defect Log

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 1 of 14

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S1	20/21	EEOS	T	04-11-2009		04-11-2009	CR
S2	1/2	WEOS	T	04-11-2009		04-11-2009	CR
S3	2/3	WEOS	T	04-11-2009		04-11-2009	CR
S4	3/4	WEOS	T	04-11-2009		04-11-2009	CR
S5	4/5	WEOS	T	04-11-2009		04-11-2009	CR
S6	5/6	WEOS	T	04-11-2009		04-11-2009	CR
S7	6/7	WEOS	T	04-11-2009		04-11-2009	CR
S8	7/8	WEOS	T	04-11-2009		04-11-2009	CR
S9	8/9	WEOS	T	04-11-2009		04-11-2009	CR
S10	9/10	WEOS	T	04-11-2009		04-11-2009	CR
S11	10/11	WEOS	T	04-11-2009		04-11-2009	CR
S12	11/12	WEOS	T	04-11-2009		04-11-2009	CR
S13	12/13	WEOS	T	04-11-2009		04-11-2009	CR
S14	12/13	4' E OF R13	O	04-11-2009		04-11-2009	CR
S15	13/14	WEOS	T	04-11-2009		04-11-2009	CR
S16	14/19	WEOS	O	04-11-2009		04-11-2009	CR
S17	18/19	6' N OF R16	O	04-11-2009		04-11-2009	CR
S18	12/13	26' E OF R13	LDT	04-11-2009	LDT-S1	04-11-2009	CR
S19	14/15	14' E OF R20	LDT	04-11-2009	LDT-S2	04-11-2009	CR
S20	14/15	WEOS	T	04-11-2009		04-11-2009	CR
S21	15/19	WEOS	T	04-11-2009		04-11-2009	CR
S22	16/17/18	INT SAME	O	04-11-2009		04-11-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 2 of 14

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S23	20/21	WEOS	T	04-11-2009		04-11-2009	CR
S24	24/25	EEOS	T	04-11-2009		04-11-2009	CR
S25	23/25	41' N OF R24	LDT	04-11-2009	LDT-S6	04-11-2009	CR
S26	26/27	EEOS	T	04-11-2009		04-11-2009	CR
S27	26/27	WEOS	T	04-11-2009		04-11-2009	CR
S28	28/29	EEOS	T	04-11-2009		04-11-2009	CR
S29	27/28	11' W OF R28	LDT	04-11-2009	LDT-S3	04-11-2009	CR
S30	28/29	WEOS	T	04-11-2009		04-11-2009	CR
S31	30/31	EEOS	T	04-11-2009		04-11-2009	CR
S32	30/31	11' W OF R31	LDT	04-11-2009	LDT-S10	04-11-2009	CR
S33	29/31	49' S OF R31	LDT	04-11-2009	LDT-S7	04-11-2009	CR
S34	32/33	EEOS	T	04-11-2009		04-11-2009	CR
S35	30/31	WEOS	T	04-11-2009		04-11-2009	CR
S36	30/32	76' N OF R35	LDT	04-11-2009	LDT-S8	04-11-2009	CR
S37	32/33	WEOS	T	04-11-2009		04-11-2009	CR
S38	34/35	EEOS	T	04-11-2009		04-11-2009	CR
S39	33/35	11' S OF R38	O	04-11-2009		04-11-2009	CR
S40	33/35	33' S OF R38	LDT	04-11-2009	LDT-S4	04-11-2009	CR
S41	35/37	68' S OF R42	LDT	04-11-2009	LDT-S9	04-11-2009	CR
S42	36/37	EEOS	T	04-11-2009		04-11-2009	CR
S43	34/35	WEOS	T	04-11-2009		04-11-2009	CR
S44	36/37	WEOS	T	04-11-2009		04-11-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 3 of 14

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S45	36/38	195' N OF R44	LDT	04-11-2009	LDT-S5	04-11-2009	CR
S46	38/39	EEOS	T	04-11-2009		04-11-2009	CR
S47	40/41	EEOS	T	04-11-2009		04-11-2009	CR
S48	38/39	WEOS	T	04-11-2009		04-11-2009	CR
S49	40/41	WEOS	T	04-11-2009		04-11-2009	CR
S50	40/42	142' N OF R49	LDT	04-11-2009	LDT-S11	04-11-2009	CR
S51	42/43	210' S OF NEOS	O	04-11-2009		04-11-2009	CR
S52	42/43	13' S OF NEOS	LDT	04-11-2009	LDT-S13	04-11-2009	CR
S53	43/44	77' S OF NEOS	LDT	04-11-2009	LDT-S15	04-11-2009	CR
S54	27/29	2' S OF R29	O	04-11-2009		04-11-2009	CR
S55	27/29	3' S OF R29	O	04-11-2009		04-11-2009	CR
S56	27/29	3' S OF R29	O	04-11-2009		04-11-2009	CR
S57	42	20' S OF EEOS	O	04-11-2009		04-11-2009	CR
S58	21	2' S OF 20/21	O	04-11-2009		04-11-2009	CR
S59	47/48	12' E OF WEOS	LDT	04-11-2009	LDT-S12	04-11-2009	CR
S60	48/49	20' E OF WEOS	O	04-11-2009		04-11-2009	CR
S61	52/53	78' E OF WEOS	LDT	04-11-2009	LDT-S14	04-11-2009	CR
S62	58/59	35' E OF WEOS	O	04-11-2009		04-11-2009	CR
S63	1/46	WEOS	O	04-17-2009		04-17-2009	CR
S64	46/47	WEOS	T	04-17-2009		04-17-2009	CR
S65	47/48	WEOS	T	04-17-2009		04-17-2009	CR
S66	48/49	WEOS	T	04-17-2009		04-17-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 4 of 14

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S67	49/50	WEOS	T	04-17-2009		04-17-2009	CR
S68	50/51	WEOS	T	04-17-2009		04-17-2009	CR
S69	51/52	WEOS	T	04-17-2009		04-17-2009	CR
S70	52/53	WEOS	T	04-17-2009		04-17-2009	CR
S71	53/54	WEOS	T	04-17-2009		04-17-2009	CR
S72	65/66	EEOS	T	04-17-2009		04-17-2009	CR
S73	54/55	WEOS	T	04-17-2009		04-17-2009	CR
S74	55/56	WEOS	T	04-17-2009		04-17-2009	CR
S75	56/57	WEOS	T	04-17-2009		04-17-2009	CR
S76	57/58	WEOS	T	04-17-2009		04-17-2009	CR
S77	58/59	WEOS	T	04-17-2009		04-17-2009	CR
S78	59/60	WEOS	T	04-17-2009		04-17-2009	CR
S79	60/61	NEOS	T	04-17-2009		04-17-2009	CR
S80	60/61	SEOS	T	04-17-2009		04-17-2009	CR
S81	60/62	17' E OF WEOS	O	04-17-2009		04-17-2009	CR
S82	60/62	WEOS	T	04-17-2009		04-17-2009	CR
S83	62/66	10' S OF R82	LDT	04-17-2009	LDT-S16	04-17-2009	CR
S84	62/63	WEOS	T	04-17-2009		04-17-2009	CR
S85	63/64	14' W OF EEOS	LDT	04-17-2009	LDT-S24	04-17-2009	CR
S86	66/67	3' N OF 67/68 EEOS	LDT	04-17-2009	LDT-S20	04-17-2009	CR
S87	65/66	WEOS	T	04-17-2009		04-17-2009	CR
S88	65/67	NEOS	T	04-17-2009		04-17-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
Page: 5 of 14

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S89	67/69	NEOS	T	04-17-2009		04-17-2009	CR
S90	69/71	NEOS	T	04-17-2009		04-17-2009	CR
S91	71/73	NEOS	T	04-17-2009		04-17-2009	CR
S92	73/75	NEOS	T	04-17-2009		04-17-2009	CR
S93	29/31/75/77	INT SAME	T	04-17-2009		04-17-2009	CR
S94	31/33/77/79	INT SAME	T	04-17-2009		04-17-2009	CR
S95	33/35/79/81	INT SAME	T	04-17-2009		04-17-2009	CR
S96	35/37/81/83	INT SAME	T	04-17-2009		04-17-2009	CR
S97	37/39/83/85	INT SAME	T	04-17-2009		04-17-2009	CR
S98	39/41/85/87	INT SAME	T	04-17-2009		04-17-2009	CR
S99	67/69	103' S OF NEOS	LDT	04-17-2009	LDT-S21	04-17-2009	CR
S100	67/68	WEOS	T	04-17-2009		04-17-2009	CR
S101	69/70	EEOS	T	04-17-2009		04-17-2009	CR
S102	71/72	EEOS	T	04-17-2009		04-17-2009	CR
S103	70/71	3'N OF 71/72 EEOS	LDT	04-17-2009	LDT-S17	04-17-2009	CR
S104	69/70	WEOS	T	04-17-2009		04-17-2009	CR
S105	71/73	63' S OF NEOS	LDT	04-17-2009	LDT-S25	04-17-2009	CR
S106	71/72	WEOS	T	04-17-2009		04-17-2009	CR
S107	73/74	EEOS	T	04-17-2009		04-17-2009	CR
S108	75/76	EEOS	T	04-17-2009		04-17-2009	CR
S109	73/74	WEOS	T	04-17-2009		04-17-2009	CR
S110	73/75	112' N OF 73/74 WEOS	LDT	04-21-2009	LDT-S18	04-21-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S111	73/75	122' N OF 73/74 WEOS	O	04-17-2009		04-17-2009	CR
S112	75/76	WEOS	T	04-17-2009		04-17-2009	CR
S113	77/78	EEOS	T	04-17-2009		04-17-2009	CR
S114	76/78	43' S OF 77/78 EEOS	LDT	04-17-2009	LDT-S22	04-17-2009	CR
S115	79/80	EEOS	T	04-17-2009		04-17-2009	CR
S116	77/78	WEOS	T	04-17-2009		04-17-2009	CR
S117	77/79	43' S OF NEOS	LDT	04-17-2009	LDT-S19	04-17-2009	CR
S118	79/81	16' S OF NEOS	LDT	04-17-2009	LDT-S26	04-17-2009	CR
S119	79/80	WEOS	T	04-17-2009		04-17-2009	CR
S120	81/82	EEOS	T	04-17-2009		04-17-2009	CR
S121	81/82/83/84	INT SAME	O	04-17-2009		04-17-2009	CR
S122	83/85	10' S OF NEOS	LDT	04-17-2009	LDT-S23	04-17-2009	CR
S123	85/86	EEOS	T	04-17-2009		04-17-2009	CR
S124	83/84	WEOS	T	04-17-2009		04-17-2009	CR
S125	85/86	WEOS	T	04-17-2009		04-17-2009	CR
S126	87/88	EEOS	T	04-17-2009		04-17-2009	CR
S127	62	5' E OF DS16	O	04-17-2009		04-17-2009	CR
S128	41/87	4' E OF WEOS	O	04-21-2009		04-21-2009	CR
S129	41/42/87/89	INT SAME	O	04-21-2009		04-21-2009	CR
S130	42/43/89/91	INT SAME	T	04-21-2009		04-21-2009	CR
S131	43/44/91/93	INT SAME	T	04-21-2009		04-21-2009	CR
S132	44/45/93/95	INT SAME	T	04-21-2009		04-21-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S133	87/89	221' S OF NEOS	O	04-21-2009		04-21-2009	CR
S134	87/88	WEOS	T	04-21-2009		04-21-2009	CR
S135	88/90	43' N OF SEOS	LDT	04-21-2009	LDT-S27	04-21-2009	CR
S136	90/92	120' N OF SEOS	LDT	04-21-2009	LDT-S29	04-21-2009	CR
S137	89/90	WEOS	T	04-21-2009		04-21-2009	CR
S138	91/92	EEOS	T	04-21-2009		04-21-2009	CR
S139	91/93	160' S OF NEOS	O	04-21-2009		04-21-2009	CR
S140	91/92	WEOS	T	04-21-2009		04-21-2009	CR
S141	91/92	4' E OF WEOS	LDT	04-21-2009	LDT-S30	04-21-2009	CR
S142	95/96	EEOS	T	04-21-2009		04-21-2009	CR
S143	94/95	59' N OF R142	LDT	04-21-2009	LDT-S28	04-21-2009	CR
S144	93/94	WEOS	T	04-21-2009		04-21-2009	CR
S145	94	7' S OF 93/94	O	04-21-2009		04-21-2009	CR
S146	97/98	SEOS	T	04-21-2009		04-21-2009	CR
S147	98/99	SEOS	T	04-21-2009		04-21-2009	CR
S148	99/100	EEOS	T	04-21-2009		04-21-2009	CR
S149	100/101	EEOS	T	04-25-2009		04-25-2009	CR
S150	101/102	EEOS	T	04-25-2009		04-25-2009	CR
S151	102/103	EEOS	T	04-25-2009		04-25-2009	CR
S152	103/105	EEOS	T	04-25-2009		04-25-2009	CR
S153	104/105	NEOS	T	04-25-2009		04-25-2009	CR
S154	103/104	3' W OF R153	LDT	04-25-2009	LDT-S32	04-25-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S155	105/106	EEOS	T	04-25-2009		04-25-2009	CR
S156	104/105	SEOS	T	04-25-2009		04-25-2009	CR
S157	106/107	EEOS	T	04-25-2009		04-25-2009	CR
S158	107/108	EEOS	T	04-25-2009		04-25-2009	CR
S159	107/108	15' W OF EEOS	LDT	04-25-2009	LDT-S34	04-25-2009	CR
S160	108/109	EEOS	T	04-25-2009		04-25-2009	CR
S161	132/133	WEOS	T	04-25-2009		04-25-2009	CR
S162	109/110	EEOS	T	04-25-2009		04-25-2009	CR
S163	110/111	EEOS	T	04-25-2009		04-25-2009	CR
S164	111/112	EEOS	T	04-25-2009		04-25-2009	CR
S165	112/133	7' S OF R164	O	04-25-2009		04-25-2009	CR
S166	112/113	EEOS	T	04-25-2009		04-25-2009	CR
S167	113/114	EEOS	T	04-25-2009		04-25-2009	CR
S168	114/115	EEOS	T	04-25-2009		04-25-2009	CR
S169	115/116	EEOS	T	04-25-2009		04-25-2009	CR
S170	116/117	EEOS	T	04-25-2009		04-25-2009	CR
S171	116/117	16' W OF EEOS	LDT	04-25-2009	LDT-S31	04-25-2009	CR
S172	117/118	EEOS	T	04-25-2009		04-25-2009	CR
S173	118/119	EEOS	T	04-25-2009		04-25-2009	CR
S174	119/133	19' S OF R173	LDT	04-25-2009	LDT-S40	04-25-2009	CR
S175	119/121	EEOS	T	04-25-2009		04-25-2009	CR
S176	120/121	NEOS	T	04-25-2009		04-25-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S177	121/122	EEOS	T	04-25-2009		04-25-2009	CR
S178	120/121	SEOS	T	04-25-2009		04-25-2009	CR
S179	122/123	EEOS	T	04-25-2009		04-25-2009	CR
S180	123/133	15' S OF R179	O	04-25-2009		04-25-2009	CR
S181	123/124	EEOS	T	04-25-2009		04-25-2009	CR
S182	124/125	EEOS	T	04-25-2009		04-25-2009	CR
S183	125/126	EEOS	T	04-25-2009		04-25-2009	CR
S184	126/127	EEOS	T	04-25-2009		04-25-2009	CR
S185	127/128	EEOS	T	04-25-2009		04-25-2009	CR
S186	133/134	WEOS	T	04-25-2009		04-25-2009	CR
S187	128/129	EEOS	T	04-25-2009		04-25-2009	CR
S188	129/130	EEOS	T	04-25-2009		04-25-2009	CR
S189	130/131	EEOS	T	04-25-2009		04-25-2009	CR
S190	130/131	24' W OF EEOS	LDT	04-25-2009	LDT-S33	04-25-2009	CR
S191	136/137	WEOS	O	04-25-2009		04-25-2009	CR
S192	136/137	12' E OF WEOS	LDT	04-25-2009	LDT-S36	04-25-2009	CR
S193	133/134	EEOS	T	04-25-2009		04-25-2009	CR
S194	133/136	122' N OF SEOS	O	04-25-2009		04-25-2009	CR
S195	133/136	89' N OF R194	O	04-25-2009		04-25-2009	CR
S196	133/136	121' N OF R195	O	04-25-2009		04-25-2009	CR
S197	133/135	15' N OF R196	O	04-25-2009		04-25-2009	CR
S198	132/133	EEOS	T	04-25-2009		04-25-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S199	132/135	15' N OF SEOS	LDT	04-25-2009	LDT-S35	04-25-2009	CR
S200	135/138	10' S OF NEOS	LDT	04-25-2009	LDT-S43	04-25-2009	CR
S201	135/136	EEOS	T	04-25-2009		04-25-2009	CR
S202	138/139	WEOS	T	04-25-2009		04-25-2009	CR
S203	136/139	91' S OF NEOS	LDT	04-25-2009	LDT-S44	04-25-2009	CR
S204	136/137	EEOS	T	04-25-2009		04-25-2009	CR
S205	139/141	66' S OF NEOS	LDT	04-25-2009	LDT-S37	04-25-2009	CR
S206	138/139	EEOS	T	04-25-2009		04-25-2009	CR
S207	140/141	WEOS	T	04-25-2009		04-25-2009	CR
S208	142/143	WEOS	T	04-25-2009		04-25-2009	CR
S209	140/143	137' S OF NEOS	LDT	04-25-2009	LDT-S41	04-25-2009	CR
S210	140/141	EEOS	T	04-25-2009		04-25-2009	CR
S211	143/144	WEOS	T	04-25-2009		04-25-2009	CR
S212	144/145	WEOS	T	04-25-2009		04-25-2009	CR
S213	141/145	23' S OF NEOS	LDT	04-25-2009	LDT-S42	04-25-2009	CR
S214	145/148	6' S OF NEOS	LDT	04-25-2009	LDT-S46	04-25-2009	CR
S215	144/145	EEOS	T	04-25-2009		04-25-2009	CR
S216	147/148	WEOS	T	04-25-2009		04-25-2009	CR
S217	143/144	EEOS	T	04-25-2009		04-25-2009	CR
S218	146/147	WEOS	T	04-25-2009		04-25-2009	CR
S219	143/146	4' N OF SEOS	LDT	04-25-2009	LDT-S45	04-25-2009	CR
S220	142/143	EEOS	T	04-25-2009		04-25-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S221	146/149	10' N OF SEOS	LDT	04-25-2009	LDT-S38	04-25-2009	CR
S222	146/147	EEOS	T	04-25-2009		04-25-2009	CR
S223	149/150	WEOS	T	04-25-2009		04-25-2009	CR
S224	147/148	EEOS	T	04-25-2009		04-25-2009	CR
S225	150/151	WEOS	T	04-25-2009		04-25-2009	CR
S226	148/151	10' S OF NEOS	LDT	04-25-2009	LDT-S39	04-25-2009	CR
S227	148	21' N OF R228	O	04-25-2009		04-25-2009	CR
S228	148	2.5' W OF R229	O	04-25-2009		04-25-2009	CR
S229	148/151	SEOS	T	04-25-2009		04-25-2009	CR
S230	175/177	NEOS	T	04-25-2009		04-25-2009	CR
S231	176/177	EEOS	T	04-25-2009		04-25-2009	CR
S232	176/177	9' W OF EEOS	O	04-25-2009		04-25-2009	CR
S233	176/177	WEOS	T	04-25-2009		04-25-2009	CR
S234	177/178	NEOS	T	04-25-2009		04-25-2009	CR
S235	141/145	SEOS	T	04-25-2009		04-25-2009	CR
S236	178/179	NEOS	T	04-25-2009		04-25-2009	CR
S237	139/141	SEOS	T	04-25-2009		04-25-2009	CR
S238	179/180	NEOS	T	04-25-2009		04-25-2009	CR
S239	137/139	SEOS	T	04-25-2009		04-25-2009	CR
S240	180/181	NEOS	T	04-25-2009		04-25-2009	CR
S241	134/137	SEOS	T	04-25-2009		04-25-2009	CR
S242	181/182	NEOS	T	04-25-2009		04-25-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

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S243	131/182	EEOS	T	04-25-2009		04-25-2009	CR
S244	182/183	NEOS	O	04-25-2009		04-25-2009	CR
S245	183/184	EEOS	T	04-25-2009		04-25-2009	CR
S246	184/185	EEOS	T	04-25-2009		04-25-2009	CR
S247	185/186	EEOS	T	04-25-2009		04-25-2009	CR
S248	174/175	NEOS	T	04-25-2009		04-25-2009	CR
S249	174/175	36' S OF NEOS	O	04-25-2009		04-25-2009	CR
S250	150/151	EEOS	T	04-25-2009		04-25-2009	CR
S251	150/174	6' N OF R250	O	04-25-2009		04-25-2009	CR
S252	163/164	WEOS	T	04-25-2009		04-25-2009	CR
S253	163/164	EEOS	T	04-25-2009		04-25-2009	CR
S254	160/162	WEOS	T	04-25-2009		04-25-2009	CR
S255	164/165	WEOS	T	04-25-2009		04-25-2009	CR
S256	164/165	EEOS	T	04-25-2009		04-25-2009	CR
S257	150/165	8' N OF SEOS	LDT	04-25-2009	LDT-S55	04-25-2009	CR
S258	149/150	EEOS	T	04-25-2009		04-25-2009	CR
S259	150/160	38' S OF NEOS	O	04-27-2009		04-27-2009	CR
S260	149/150	EEOS	T	04-27-2009		04-27-2009	CR
S261	149/160	33' N OF SEOS	LDT	04-28-2009	LDT-S54	04-28-2009	CR
S262	160/161	WEOS	T	04-27-2009		04-27-2009	CR
S263	160/161	EEOS	T	04-27-2009		04-27-2009	CR
S264	158/161	NEOS	T	04-27-2009		04-27-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S265	158/159	WEOS	T	04-27-2009		04-27-2009	CR
S266	158/159	EEOS	T	04-27-2009		04-27-2009	CR
S267	158/160	132' S OF NEOS	LDT	04-28-2009	LDT-S50	04-28-2009	CR
S268	157/158	WEOS	T	04-27-2009		04-27-2009	CR
S269	160/162	EEOS	T	04-27-2009		04-27-2009	CR
S270	157/162/172/173	INT SAME	O	04-27-2009		04-27-2009	CR
S271	162/163/173/174	INT SAME	T	04-27-2009		04-27-2009	CR
S272	173	11' SW OF R270	O	04-27-2009		04-27-2009	CR
S273	171/172	WEOS	T	04-27-2009		04-27-2009	CR
S274	171/173	4' S OF NEOS	LDT	04-28-2009	LDT-S53	04-28-2009	CR
S275	171/173	96' S OF NEOS	O	04-27-2009		04-27-2009	CR
S276	171/173	15' S OF R275	O	04-27-2009		04-27-2009	CR
S277	171/173	10' S OF R276	O	04-27-2009		04-27-2009	CR
S278	171/172	EEOS	T	04-27-2009		04-27-2009	CR
S279	154/157/170/172	INT SAME	T	04-27-2009		04-27-2009	CR
S280	154/155	WEOS	T	04-27-2009		04-27-2009	CR
S281	157/158	EEOS	T	04-27-2009		04-27-2009	CR
S282	155/158	160' N OF SEOS	LDT	04-28-2009	LDT-S52	04-28-2009	CR
S283	155/156	WEOS	T	04-27-2009		04-27-2009	CR
S284	155/158	96' N OF R285	O	04-27-2009		04-27-2009	CR
S285	155/156	EEOS	T	04-27-2009		04-27-2009	CR
S286	152/153	WEOS	T	04-27-2009		04-27-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
S287	152/155	189' S OF NEOS	LDT	04-28-2009	LDT-S47	04-28-2009	CR
S288	154/155	EEOS	T	04-28-2009		04-28-2009	CR
S289	152/154/169/170	INT SAME	T	04-28-2009		04-28-2009	CR
S290	167/169	5' S OF R291	O	04-28-2009		04-28-2009	CR
S291	167/169	4' S OF R 292	O	04-28-2009		04-28-2009	CR
S292	167/169	9' S OF R293	O	04-28-2009		04-28-2009	CR
S293	167/169	26' S OF R294	LDT	04-28-2009	LDT-S48	04-28-2009	CR
S294	167/168	WEOS	T	04-28-2009		04-28-2009	CR
S295	96/152/168/169	INT SAME	O	04-28-2009		04-28-2009	CR
S296	95/96	WEOS	T	04-28-2009		04-28-2009	CR
S297	95/152	66' N OF R296	O	04-28-2009		04-28-2009	CR
S298	95/152	45' N OF R297	T	04-28-2009		04-28-2009	CR
S299	45/95	WEOS	T	04-28-2009		04-28-2009	CR
S300	152/153	EEOS	T	04-28-2009		04-28-2009	CR
S301	45/153	36' N OF R300	O	04-28-2009		04-28-2009	CR
S302	45/153	174' N OF R301	LDT	04-28-2009	LDT-S49	04-28-2009	CR
S303	11	10' E OF 11/20	O	07-02-2009	AIR POCKET	07-07-2009	JA

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **INT SAME** - panel intersection, **R** - repair number

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

Secondary HDPE Geomembrane Geomembrane Repair Testing Log

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S1	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S2	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S3	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S4	G&W	6"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S5	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S6	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S7	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S8	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S9	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S10	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S11	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S12	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S13	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S14	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S15	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S16	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S17	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S18	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S1
S19	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S2
S20	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S21	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S22	P	3'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S23	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S24	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S25	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S6
S26	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S27	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S28	G&W	12"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S29	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S3
S30	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S31	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S32	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S10
S33	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S7
S34	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S35	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S36	P	3' x 5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S8
S37	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S38	G&W	8"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S39	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S40	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S4
S41	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S9
S42	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S43	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S44	G&W	12"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S45	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S5
S46	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S47	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S48	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S49	G&W	10"	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S50	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S11
S51	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S52	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S13
S53	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S15
S54	P	1'x2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S55	P	1'x2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S56	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S57	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S58	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S59	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S12
S60	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S61	P	3'x5'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	LDT-S14
S62	P	2'	MN	CR	04-11-2009	VB	JC	CR	P	04-11-2009	
S63	P	3'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S64	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S65	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S66	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S67	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S68	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S69	G&W	10"	JC	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S70	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S71	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S72	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S73	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S74	G&W	6"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S75	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S76	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S77	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S78	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S79	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S80	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S81	P	2'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S82	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S83	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S16
S84	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S85	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S24
S86	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S20
S87	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S88	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S89	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S90	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S91	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S92	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S93	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S94	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S95	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S96	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S97	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S98	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S99	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S21
S100	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S101	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S102	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S103	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S17
S104	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S105	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S25
S106	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S107	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S108	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S109	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S110	CAP	3.5'X41'	IB	CR	04-21-2009	VB	JC	CR	P	04-21-2009	LDT-S18

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S111	P	2'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S112	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S113	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S114	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S22
S115	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S116	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S117	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S19
S118	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S26
S119	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S120	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S121	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S122	P	3'X5'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	LDT-S23
S123	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S124	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S125	G&W	8"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S126	G&W	10"	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S127	P	2'	IB	CR	04-17-2009	VB	JC	CR	P	04-17-2009	
S128	P	1'X2'	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S129	P	1'	IB	CR	04-21-2009	VB	JC	CR	P	04-21-2009	
S130	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S131	G&W	12"	IB	CR	04-21-2009	VB	JC	CR	P	04-21-2009	
S132	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S133	P	13"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S134	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S135	P	2'X3'	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	LDT-S27
S136	P	2'X3'	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	LDT-S29
S137	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S138	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S139	P	14"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S140	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S141	P	2'X4'	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	LDT-S30
S142	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S143	P	2'X4'	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	LDT-S28
S144	G&W	8"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S145	P	13"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S146	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S147	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S148	G&W	12"	IB	CR	04-21-2009	VB	DR	CR	P	04-21-2009	
S149	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S150	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S151	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S152	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S153	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S154	P	2'X4'	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S32

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S155	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S156	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S157	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S158	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S159	P	2'X4'	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S34
S160	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S161	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S162	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S163	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S164	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S165	P	3'X5'	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S166	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S167	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S168	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S169	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S170	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S171	P	2'X4'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S31
S172	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S173	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S174	P	2'X4'	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S40
S175	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S176	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S177	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S178	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S179	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S180	P		IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S181	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S182	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S183	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S184	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S185	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S186	G&W	8"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S187	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S188	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S189	G&W	10"	IB	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S190	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S33
S191	P		MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S192	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S36
S193	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S194	P	2'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S195	P	2'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S196	P	2'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S197	P	2'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S198	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S199	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S35
S200	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S43
S201	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S202	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S203	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S44
S204	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S205	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S37
S206	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S207	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S208	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S209	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S41
S210	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S211	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S212	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S213	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S42
S214	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S46
S215	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S216	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S217	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S218	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S219	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S45
S220	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S221	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S38
S222	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S223	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S224	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S225	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S226	P	3'X5'	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	LDT-S39
S227	P	12"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S228	P	24"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S229	G&W	12"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S230	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S231	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S232	P		MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S233	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S234	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S235	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S236	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S237	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S238	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S239	G&W	10"	MN	CR	04-25-2009	VB	DR	CR	P	04-25-2009	
S240	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S241	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S242	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S243	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S244	P	2'X6'	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S245	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S246	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S247	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S248	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S249	P	2'X4'	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S250	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S251	P	2'X3'	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S252	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S253	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S254	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S255	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S256	G&W	10"	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S257	P	2'X6'	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	LDT-S55
S258	G&W	5'	MN	CR	04-25-2009	VB	JC	CR	P	04-25-2009	
S259	P	18"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S260	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S261	P	2'X6'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S54
S262	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S263	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S264	G&W	3'	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S265	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S266	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S267	P	2'X6'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S50
S268	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S269	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S270	P	1.5'X4.5'	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S271	G&W	24"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S272	P	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S273	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S274	P		IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S53
S275	P	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S276	P	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S277	P	18"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S278	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S279	G&W	18"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S280			IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S281	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S282	P	2'X6'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S52
S283	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S284	CAP	2'X13'	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S285	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	
S286	G&W	12"	IB	CR	04-27-2009	VB	JC	CR	P	04-27-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Secondary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
S287	P	2'X6'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S47
S288	G&W	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S289	G&W	18"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S290	P	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S291	G&W	24"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S292	P	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S293	P	2'X6'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S48
S294	G&W	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S295	CAP	3'X8'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S296	G&W	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S297	G&W	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S298	P	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S299	G&W	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S300	G&W	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S301	P	12"	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	
S302	P	3'X5'	IB	CR	04-28-2009	VB	JC	CR	P	04-28-2009	LDT-S49
S303	P	1.5'X1.5'	IB	JA	07-07-2009	VB	IB	JA	P	07-07-2009	AIR POCKET

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

Primary HDPE Geomembrane
Geomembrane Deployment Report

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/04/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 1 **of** 8

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	0	0		
P1	247355	53	22.5	1,193		JA	Trapezoid (cut for tiein)
P2	247355	30	22.5	675		JA	Trapezoid (cut for tiein)
P3	247355	8	6	48		JA	Triangle
P4	247355	77	18	1,386		JA	Cut for tie in
P5	247355	42	15	630		JA	Cut for tie in
P6	247355	9	5	45		JA	Triangle
P7	247355	76	22.5	1,710		JA	
P8	247580	77	22.5	1,733		JA	
P9	247580	75	22.5	1,688		JA	
P10	247580	76	22.5	1,710		JA	
P11	247580	75	22.5	1,688		JA	
P12	247580	74	22.5	1,665		JA	
P13	246796	76	22.5	1,710		JA	
P14	246796	78	22.5	1,755		JA	
P15	246796	75	22.5	1,688		JA	
P16	246796	76	22.5	1,710		JA	
P17	247353	77	22.5	1,733		JA	
P18	247346	77	22.5	1,733		JA	
P19	247346	76	22.5	1,710		JA	
P20	247346	76	22.5	1,710		JA	
P21	247346	75	22.5	1,688		JA	
P22	247346	74	22.5	1,665		JA	
P23	247232	75	22.5	1,688		JA	
P24	247232	75	22.5	1,688		JA	
P25	247232	73	22.5	1,643		JA	
P26	247232	75	22.5	1,688		JA	
P27	247232	75	22.5	1,688		JA	
P28	247576	77	22.5	1,733		JA	
P29	247576	78	22.5	1,755		JA	
			Daily Total	43,149	0		
			Total to Date	43,149	0		

CQA Personnel: James Addis

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/04/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 2 **of** 8

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	43,149	0		
P30	247576	79	22.5	1,778		JA	
P31	247576	78	22.5	1,755		JA	
			Daily Total	3,533	0		
			Total to Date	46,682	0		

CQA Personnel: James Addis

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	46,682	0		
P32	247345	408	22.5	9,180		CR	5/8/09
P33	247574	410	22.5	9,225		CR	
P34	247456	411	22.5	9,248		CR	
P35	247237	406	22.5	9,135		CR	
P36	247222	411	22.5	9,248		CR	
P37	247572	410	22.5	9,225		CR	
			Daily Total	55,260	0		
			Total to Date	101,942	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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				Carry Over	101,942	0		
Panel No.	**Roll Number**	**Length (ft)**	**Width (ft)**	**Approximate Area (ft^2)**		**CQA Initials**	**Remarks**
				Textured	**Smooth**		
P38	247353	411	22.5	9,248		CR	5/9/09
P39	247344	412	22.5	9,270		JA	
P40	247229	411	22.5	9,248		JA	
P41	247460	413	22.5	9,293		JA	
P42	247573	412	22.5	9,270		JA	
P43	246704	413	22.5	9,293		CR	
P44	247459	413	22.5	9,293		CR	
P45	247104	413	22.5	9,293		CR	
P46	247235	416	22.5	9,360		JA	
P47	247571	415	16	6,640		CR	
P48	247352	414	21	8,694		JA	
P49	247108/248108*	411	22.5	9,248		JA	
P50	247106	406	22.5	9,135		JA	

*Duplicate manufacturer roll numbers on cross-reference list, so panel is one of the two roll numbers

Daily Total	117,282	0
Total to Date	219,223	0

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	219,223	0		
P51	247713	411	22.5	9,248		JA	5/10/09
P52	247230	411	22.5	9,248		JA	
P53	247223	411	22.5	9,248		JA	
P54	248113	411	22.5	9,248		JA	
P55	247227	411	22.5	9,248		JA	
P56	247228	412	22.5	9,270		JA	
P57	247716	413	22.5	9,293		JA	
P58	247718	413	22.5	9,293		JA	
P59	247571	59	7	413		CR	
P60	248219	58	22.5	1,305		CR	
P61	248219	31	22.5	698		CR	
P62	248219	31	22.5	698		CR	
P63	248219	32	22.5	720		CR	
P64	248219	33	22.5	743		CR	
P65	248219	34	22.5	765		CR	
P66	248219	35	22.5	788		CR	
P67	248219	35	22.5	788		CR	
P68	248219	36	22.5	810		CR	
P69	248219	37	22.5	833		CR	
P70	248101	39	22.5	878		CR	
P71	248101	39	22.5	878		CR	
P72	248101	41	22.5	923		CR	
P73	248101	42	22.5	945		CR	
P74	248101	43	22.5	968		CR	
P75	248101	45	22.5	1,013		CR	
P76	248101	47	22.5	1,058		CR	
			Daily Total	89,311	0		
			Total to Date	308,534	0		

CQA Personnel: James Addis

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/12/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 6 **of** 8

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	308,534	0		
P77	248101	49	22.5	1,103		JA	5/12/09 w slope
P78	248101	52	22.5	1,170		JA	
P79	248112	52	22.5	1,170		JA	
P80	248112	53	22.5	1,193		JA	
P81	248112	55	18	990		JA	
P82	248112	56	22.5	1,260		JA	
P83	248112	57	22.5	1,283		CR	
P84	248112	59	22.5	1,328		CR	
P85	248112	60	22.5	1,350		CR	
P86	247714	61	22.5	1,373		CR	
P87	247714	62	22.5	1,395		CR	
P88	247714	64	22.5	1,440		CR	
P89	247714	66	22.5	1,485		CR	
P90	247714	67	22.5	1,508		CR	
P91	247576	84	22.5	1,890		JA	E slope
P92	247238	87	22.5	1,958		JA	
P93	247238	89	22.5	2,003		CR	
P94	247238	91	22.5	2,048		CR	
P95	247238	52	18	936		CR	Average dims (cut for at)
P96	247238	39	22.5	878		CR	average length (cut for at)
			Daily Total	27,756	0		
			Total to Date	336,290	0		

CQA Personnel: James Addis

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/13/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 7 **of** 8

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	336,290	0		
P97	247714	65	22.5	1,463		CR	
P98	247714	19	22.5	428		CR	Average length
P99	248220	397	22.5	8,933		CR	
P100	247722	398	22.5	8,955		CR	
P101	248221	400	22.5	9,000		CR	
P102	248104	44	22.5	990		CR	
P103	248104	41	22.5	923		CR	
P104	247714	8	6	48		CR	average dims
P105	248104	280	22.5	6,300		JA	
P106	247721	121	22.5	2,723		JA	
P107	247721	281	22.5	6,323		JA	
P108	248107	112	22.5	2,520		JA	
P109	248107	294	22.5	6,615		JA	
P110	247717	105	22.5	2,363		JA	
P111	247717	300	22.5	6,750		JA	
P112	247354	94	22.5	2,115		JA	
P113	247354	313	22.5	7,043		JA	
P114	247720	78	22.5	1,755		JA	
P115	247720	326	22.5	7,335		CR	
P116	247103	69	22.5	1,553		CR	
P117	247103	337	22.5	7,583		CR	
P118	248103	64	22.5	1,440		CR	
P119	248103	334	22.5	7,515		CR	
P120	248109	63	22.5	1,418		CR	
P121	248109	59	11	649		CR	
			Daily Total	102,735	0		
			Total to Date	439,024	0		

CQA Personnel: Cedric Ruhl

GEOMEMBRANE DEPLOYMENT REPORT

Material Description
Agru America: 60-mil HDPE Liner

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 8 **of** 8

Panel No.	Roll Number	Length (ft)	Width (ft)	Approximate Area (ft^2) Textured	Approximate Area (ft^2) Smooth	CQA Initials	Remarks
			Carry Over	439,024	0		
P122	248109	286	22.5	6,435		JA	Se floor 5/15/09
P123	247579	52	22.5	1,170		JA	
P124	247570	340	22.5	7,650		JA	
P125	247457	345	22.5	7,763		JA	
P126	247457	64	22.5	1,440		CR	
P127	247570	287	22.5	6,458		CR	
P128	247570	121	22.5	2,723		CR	
P129	247715	235	22.5	5,288		CR	
P130	247715	170	22.5	3,825		CR	
P131	247348	187	22.5	4,208		CR	
P132	247348	222	22.5	4,995		CR	
P133	248110	139	22.5	3,128		CR	
P134	248110	267	22.5	6,008		JA	
P135	248114	97	22.5	2,183		CR	
P136	248114	308	22.5	6,930		CR	
P137	248117	63	22.5	1,418		CR	
P138	248117	343	22.5	7,718		CR	
P139	247232	32	22.5	720		CR	
P140	248111	380	22.5	8,550		CR	
P141	248111	35	22.5	788		CR	
P142	248105	344	22.5	7,740		CR	
P143	248105	60	22.5	1,350		CR	
P144	248116	320	22.5	7,200		CR	
P145	248116	87	22.5	1,958		CR	
P146	248218	301	22.5	6,773		CR	
P147	248218	99	22.5	2,228		CR	
P148	248106	289	22.5	6,503		CR	
P149	248106	114	17	1,938		JA	
P150	248115	279	17	4,743		CR	
			Daily Total	129,824	0		
			Total to Date	568,848	0		

CQA Personnel: James Addis

Primary HDPE Geomembrane
Geomembrane Trial Seam Log

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary
Project Location: Belmont, North Carolina
Page: 1 **of** 5

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
P1	721	HC	777	70	5	410	136	130	122	127	135	135	177	174	176	P	F	SS	JA	05/08/2009
P2	730	EE	500	70	5	410	131	140	136	129	121	125	173	169	172	P	F	SS	JA	05/08/2009
P3	740	EE	500	70	5	410	112	117	109	109	113	116	151	156	153	P	F	TT	JA	05/08/2009
P4	732	GM	760	70	5	410	124	125	133	123	130	126	170	169	166	P	F	SS	JA	05/08/2009
P5	745	GM	760	70	5	410	127	130	124	133	133	136	163	166	169	P	F	TT	JA	05/08/2009
P6	800	HC	777	70	5	410	122	130	117	123	133	119	155	161	157	P	F	TT	JA	05/08/2009
P7	930	GM	760	70	5	410	124	135	133	138	130	135	166	167	162	P		SS	JA	05/08/2009
P8	930	HC	522	70	5	410	142	143	127	135	137	136	172	167	162	P	F	SS	JA	05/08/2009
P9	930	EE	500	70	5	410	139	126	131	134	132	131	165	166	166	P	F	SS	JA	05/08/2009
P10	815	HC	522	70	5	410	145	133	136	134	134	123	166	164	155	P	F	SS	CR	05/09/2009
P11	815	HC	522	70	5	410	123	116	115	111	115	118	141	147	149	P	F	TT	CR	05/09/2009
P12	830	GM	760	70	5	410	117	126	129	123	129	125	151	150	153	P	F	SS	CR	05/09/2009
P13	830	EE	500	70	5	410	123	121	128	127	127	129	144	146	149	P	F	SS	CR	05/09/2009
P14	100	GM	760	80	6	410	110	105	103	113	103	102	129	131	128	P	F	SS	JA	05/09/2009
P15	105	HC	522	80	6	410	107	107	104	102	104	109	132	127	132	P	F	SS	JA	05/09/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: James Addis

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary
Project Location: Belmont, North Carolina
Page: 2 **of** 5

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
P16	110	EE	500	80	6	410	105	112	110	111	116	120	136	135	135	P	F	SS	JA	05/09/2009
P17	710	EE	500	70	5	410	130	129	131	128	132	131	177	174	178	P	F	SS	JA	05/09/2009
P18	715	HC	522	70	5	410	133	146	135	131	128	118	170	176	173	P	F	SS	CR	05/10/2009
P19	720	GM	760	70	5	410	134	130	134	123	139	119	175	173	170	P	F	SS	CR	05/10/2009
P20	1045	HC	522	75	5	410	113	117	120	112	116	113	147	143	139	P	F	ST	JA	05/10/2009
P21	1246	HC	522	85	6	400	102	100	104	104	106	105	124	129	126	P	F	ST	JA	05/10/2009
P22	730	IB	48	70	250	260	140	0	136	0	136	0	159	163	161	P	Ex	TT	CR	05/13/2009
P23	745	RC	55	70	250	260	131	0	124	0	132	0	158	161	155	P	Ex	TT	CR	05/13/2009
P24	750	EE	55	70	250	260	127	0	140	0	143	0	156	150	153	P	Ex	TT	CR	05/13/2009
P25	1300	IB	48	80	250	260	119	0	126	0	125	0	133	134	127	P	Ex	TT	CR	05/13/2009
P26	1310	RC	55	80	250	260	122	0	119	0	128	0	130	129	128	P	Ex	TT	CR	05/13/2009
P27	1320	EE	500	80	6	410	112	110	119	109	109	118	130	133	130	P	F	SS	CR	05/13/2009
P28	1325	GM	760	80	6	410	104	111	104	113	107	114	129	131	127	P	F	SS	CR	05/13/2009
P29	830	HC	522	75	6	410	120	121	122	131	122	132	167	163	168	P	F	SS	CR	05/13/2009
P30	835	GM	760	75	6	410	127	110	128	127	126	131	161	157	163	P	F	SS	CR	05/13/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: James Addis

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary
Project Location: Belmont, North Carolina
Page: 3 **of** 5

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
P31	850	JR	500	75	5	410	114	120	129	112	108	124	145	151	149	P	F	SS	CR	05/13/2009
P32	913	GM	760	75	5	410	124	130	127	134	128	120	140	138	143	P	F	TT	CR	05/13/2009
P33	915	HC	522	75	5	410	126	132	129	130	127	124	140	143	149	P	F	TT	CR	05/13/2009
P34	925	JR	500	75	5	410	129	133	137	130	132	126	138	141	143	P	F	TT	CR	05/13/2009
P35	1040	HC	522	75	5	410	124	106	117	108	111	119	140	136	134	P	F	ST	CR	05/13/2009
P36	1050	JR	500	75	5	410	117	105	119	109	111	122	137	131	134	P	F	ST	CR	05/13/2009
P37	1300	HC	522	75	6	410	101	106	107	111	117	112	135	134	131	P	F	TT	CR	05/14/2009
P38	1305	HC	522	75	6	410	104	118	120	123	119	114	132	136	133	P	F	SS	CR	05/14/2009
P39	1310	JR	500	75	6	410	103	103	109	113	114	119	144	140	137	P	F	SS	CR	05/14/2009
P40	1315	JR	500	75	6	410	110	106	109	112	117	105	140	137	141	P	F	TT	CR	05/14/2009
P41	1320	GM	760	75	6	410	116	108	111	117	113	119	138	133	131	P	F	TT	CR	05/14/2009
P42	1325	GM	760	75	6	410	121	116	109	113	107	113	141	143	137	P	F	SS	CR	05/14/2009
P43	745	HC	522	60	5	410	132	136	140	145	137	141	147	150	149	P	F	TT	CR	05/14/2009
P44	835	IB	48	60	250	260	119	0	119	0	124	0	150	148	151	P	Ex	TT	CR	05/14/2009
P45	950	RC	55	60	250	260	135	0	138	0	133	0	152	157	146	P	Ex	TT	CR	05/14/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary
Project Location: Belmont, North Carolina
Page: 4 **of** 5

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
P46	1325	IB	48	80	250	260	129	0	120	0	123	0	143	136	140	P	Ex	TT	CR	05/15/2009
P47	1330	RC	55	80	250	260	119	0	116	0	121	0	147	133	142	P	Ex	TT	CR	05/15/2009
P48	745	HC	522	65	5	410	127	127	132	125	135	133	163	160	165	P	F	SS	CR	05/15/2009
P49	750	HC	522	65	5	410	128	118	127	116	130	119	160	156	161	P	F	TT	CR	05/15/2009
P50	740	JR	500	65	5	410	132	141	142	122	131	141	161	167	163	P	F	SS	CR	05/15/2009
P51	750	JR	500	65	5	410	143	136	141	134	133	139	155	161	153	P	F	TT	CR	05/15/2009
P52	756	GM	760	65	5	410	111	131	137	127	133	140	153	149	161	P	F	SS	CR	05/15/2009
P53	800	GM	760	65	5	410	123	116	133	129	136	136	155	159	148	P	F	TT	CR	05/15/2009
P54	920	HC	777	65	5	410	131	133	143	129	129	132	153	152	150	P	F	ST	CR	05/15/2009
P55	925	HC	777	65	5	410	117	119	128	116	126	120	155	153	151	P	F	SS	CR	05/15/2009
P56	1255	HC	777	80	6	410	105	129	124	131	135	134	134	136	132	P	F	SS	JA	05/15/2009
P57	100	HC	777	80	6	410	128	137	124	135	127	137	139	141	136	P	F	TT	JA	05/15/2009
P58	105	GMR	760	80	6	410	110	105	114	109	112	110	136	131	133	P	F	SS	JA	05/15/2009
P59	1315	GMR	760	80	6	410	103	133	102	103	105	103	135	130	133	P	F	TT	JA	05/15/2009
P60	1315	JR	500	80	6	410	9	109	106	106	99	103	130	121	131	P	F	SS	JA	05/15/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: Cedric Ruhl

GEOMEMBRANE TRIAL SEAM LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary (
Project Location: Belmont, North Carolina
Page: 5 **of** 5

					Machine Settings		Peel Test Results						Shear Test Results							
Sample No.	Approx. Time	Tech. Init.	Mach. No.	Ambient Temp.	Preheat or Speed	Temp. Setting	1		2		3		1	2	3	Pass/ Fail	Weld Type	Material	CQA Init.	Date
P61	1320	JR	500	80	6	410	120	130	130	121	119	127	130	128	133	P	F	TT	JA	05/15/2009
P62	720	IB	48	65	250	260	124	0	119	0	126	0	166	169	171	P	Ex	TT	JA	05/19/2009
P63	725	RC	55	65	250	260	130	0	125	0	127	0	160	164	159	P	Ex	TT	JA	05/19/2009
P64	720	HC	777	45	6	410	146	138	128	148	150	156	190	193	196	P	F	TT	JA	05/19/2009
P65	730	RC	55	45	250	260	133	0	142	0	139	0	186	191	183	P	Ex	TT	JA	05/19/2009
P66	1315	IB	55	81	250	260	125	0	120	0	118	0	136	148	139	P	Ex	TT	JA	05/28/2009
P67	800	IB	40	72	260	250	134	0	133	0	127	0	138	134	138	P	Ex	TT	JA	07/07/2009

Weld Type: (**Ex**)trusion, (**F**)usion
Material: (**SS**) Smooth/Smooth - (**ST**) Smooth/Texture - (**TT**) Texture /Texture

CQA Personnel: James Addis

Primary HDPE Geomembrane
Geomembrane Seam Log

GEOMEMBRANE SEAM LOG

Date: 05/04/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 1 of 40

Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P4 / P5	E / W	804	EE	500	53	53		A	813 / 818	30 / 30	AC	JA	P	05-04-2009	
P7 / P8	E / W	825	EE	500	75	128		A	838 / 843	32 / 32	AC	JA	P	05-04-2009	
P9 / P10	E / W	838	EE	500	74	202		A	902 / 907	31 / 31	AC	JA	P	05-04-2009	
P12 / P13	E / W	902	EE	500	74	276		A	942 / 947	30 / 30	AC	JA	P	05-04-2009	
P15 / P16	E / W	920	EE	500	75	351		A	1005 / 1010	30 / 30	AC	JA	P	05-04-2009	
P18 / P19	E / W	943	EE	500	75	426		A	1031 / 1036	32 / 32	AC	JA	P	05-04-2009	
P21 / P22	E / W	957	EE	500	72	498		A	1054 / 1059	30 / 30	AC	JA	P	05-04-2009	
P23 / P24	E / W	1014	EE	500	73	71	1	A	1103 / 1108	30 / 30	AC	JA	P	05-04-2009	
P26 / P27	E / W	1037	EE	500	73	144		A	1122 / 1127	30 / 30	AC	JA	P	05-04-2009	
P28 / P29	E / W	1100	EE	500	78	222		A	734 / 739	30 / 30	AC	JA	P	05-08-2009	
P30 / P31	E / W	1115	EE	500	78	300		A	745 / 750	32 / 32	AC	JA	P	05-08-2009	

Sheet Total 800 | 300 **Destructive Carry Over**
Total to Date 800

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/04/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 2 of 40

Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P4 / P7	E / W	810	GM	760	76	76		A	827 / 832	33 / 32	AC	JA	P	05-04-2009	
P8 / P9	E / W	831	GM	760	73	149		A	847 / 852	32 / 32	AC	JA	P	05-04-2009	
P10 / P11	E / W	845	GM	760	74	223		A	925 / 930	31 / 31	AC	JA	P	05-04-2009	
P13 / P14	E / W	910	GM	760	75	298		A	951 / 956	30 / 30	AC	JA	P	05-04-2009	
P16 / P17	E / W	926	GM	760	75	373		A	1006 / 1011	30 / 30	AC	JA	P	05-04-2009	
P20 / P21	E / W	1000	GM	760	74	447		A	1050 / 1055	32 / 32	AC	JA	P	05-04-2009	
P24 / P25	E / W	1021	GM	760	73	20	2	A	1117 / 1122	32 / 32	AC	JA	P	05-04-2009	
P27 / P28	E / W	1050	GM	760	76	96		A	727 / 732	30 / 30	AC	JA	P	05-08-2009	

Sheet Total 596 | 96 **Destructive Carry Over**
Total to Date 596

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/04/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 3 of 40

Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P1 / P2	N / S	737	HC	777	39	39		A	748 / 753	32 / 32	AC	JA	P	05-04-2009	
P2 / P3	N / S	746	HC	777	13	52		A	753 / 758	32 / 32	AC	JA	P	05-04-2009	
P5 / P6	E / W	800	HC	777	14	66		A	816 / 821	30 / 30	AC	JA	P	05-04-2009	
P3 / P6	NE / SW	835	HC	777	9	75		A	716 / 721	30 / 30	AC	JA	P	05-08-2009	
P3 / P5	NE / SW	836	HC	777	4	79		A	716 / 721	30 / 30	AC	JA	P	05-08-2009	
P2 / P5	NE / SW	837	HC	777	31	110		A	716 / 721	30 / 30	AC	JA	P	05-08-2009	
P1 / P5	NE / SW	840	HC	777	1	111		A	716 / 721	30 / 30	AC	JA	P	05-08-2009	
P1 / P4	NE / SW	840	HC	777	28	139		A	716 / 721	30 / 30	AC	JA	P	05-08-2009	
P11 / P12	E / W	852	HC	777	74	213		A	900 / 905	32 / 32	AC	JA	P	05-04-2009	
P14 / P15	E / W	915	HC	777	75	288		A	957 / 1002	30 / 30	AC	JA	P	05-04-2009	
P17 / P18	E / W	935	HC	777	76	364		A	1026 / 1031	32 / 32	AC	JA	P	05-04-2009	
P19 / P20	E / W	953	HC	777	74	438		A	1036 / 1041	30 / 30	AC	JA	P	05-04-2009	
P22 / P23	E / W	1013	HC	777	72	10	3	A	1100 / 1105	32 / 32	AC	JA	P	05-04-2009	
P25 / P26	E / W	1030	HC	777	74	84		A	1120 / 1125	30 / 30	AC	JA	P	05-04-2009	
P29 / P30	E / W	1104	HC	777	79	163		A	740 / 745	31 / 31	AC	JA	P	05-08-2009	

Sheet Total 663 | 163 **Destructive Carry Over**
Total to Date 663

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 800
Welder Tech. Carry Over 300 300

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P34 / P35	S / N	1030	EE	500	405	205	4	A	1146 / 1151	32 / 32	AC	CR	P	05-08-2009	
P36 / P37	S / N	1131	EE	500	169	374		A	717 / 722	30 / 30	AC	CR	P	05-09-2009	z2

Sheet Total 574 374 **Destructive Carry Over**
Total to Date 1374

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P32 / P33	S / N	950	HC	522	408	408		A	1140 / 1145	32 / 32	AC	CR	P	05-08-2009	
P35 / P36	S / N	1105	HC	522	404	312	5	A	705 / 710	32 / 32	AC	CR	P	05-09-2009	

Sheet Total 812 | 312 **Destructive Carry Over**
Total to Date 812

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/08/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 596
Welder Tech. Carry Over 96 | 96

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P33 / P34	S / N	1011	GM	760	410	6	6	A	1145 / 1150	32 / 32	AC	CR	P	05-08-2009	
P36 / P37	S / N	1117	GM	760	241	247		A	726 / 731	33 / 33	AC	CR	P	05-09-2009	Z1

Sheet Total 651 | 247 **Destructive Carry Over**
Total to Date 1247

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 1374
Welder Tech. Carry Over 374 | 374

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P37 / P38	S / N	900	EE	500	410	284	7	A	1242 / 1257	32 / 32	AC	CR	P	05-09-2009	Z1
P40 / P41	S / N	1015	EE	500	408	192	8	A	1356 / 1402	32 / 32	AC	CR	P	05-09-2009	Z1
P43 / P44	S / N	1137	EE	500	409	101	9	A	1428 / 1433	32 / 32	AC	CR	P	05-09-2009	Z1
P46 / P47	S / N	1340	EE	500	412	13	10	A	1605 / 1610	32 / 32	AC	JA	P	05-09-2009	Z1
P49 / P50	N / S	1545	EE	500	304	317		A	1636 / 1641	32 / 32	AC	JA	P	05-09-2009	Z1

Sheet Total 1943 | 317 **Destructive Carry Over**
Total to Date 3317

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 812
Welder Tech. Carry Over 312 312

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P21 / P32	S / N	817	HC	522	22.5	334.5		A	844 / 849	31 / 30	AC	JA	P	05-09-2009	Z1
P20 / P32	S / N	823	HC	522	22.5	357		A	844 / 849	31 / 30	AC	JA	P	05-09-2009	Z1
P19 / P32	S / N	826	HC	522	22.5	379.5		A	844 / 849	31 / 30	AC	JA	P	05-09-2009	Z1
P18 / P32	S / N	829	HC	522	22.5	402		A	844 / 849	31 / 30	AC	JA	P	05-09-2009	Z1
P17 / P32	S / N	834	HC	522	22.5	424.5		A	844 / 849	31 / 30	AC	JA	P	05-09-2009	Z1
P15 / P32	S / N	841	HC	522	22.5	447		A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2
P14 / P32	S / N	845	HC	522	22.5	469.5		A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2
P13 / P32	S / N	849	HC	522	22.5	492		A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2
P12 / P32	S / N	852	HC	522	22.5	14.5	11	A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2 ds for no s/t trial
P11 / P32	S / N	856	HC	522	22.5	37		A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2
P10 / P32	S / N	859	HC	522	22.5	59.5		A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2
P9 / P32	S / N	903	HC	522	22.5	82		A	913 / 918	31 / 31	AC	JA	P	05-09-2009	Z2 stops 12ft n of 10/32
P8 / P32	S / N	907	HC	522	22.5	104.5		A	930 / 935	32 / 32	AC	JA	P	05-09-2009	Z3
P7 / P32	S / N	911	HC	522	22.5	127		A	930 / 935	32 / 32	AC	JA	P	05-09-2009	Z3
P4 / P32	S / N	915	HC	522	5	132		A	930 / 935	32 / 32	AC	JA	P	05-09-2009	Z3
				Sheet Total	320	132	**Destructive Carry Over**								
				Total to Date	1132										

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 1132
Welder Tech. Carry Over 132 132

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P1 / P32	S / NEOS	916	HC	522	60	192		A	930 / 935	32 / 32	AC	JA	P	05-09-2009	Z3
P39 / P40	S / N	1003	HC	522	409	101	12	A	1352 / 1357	31 / 31	AC	CR	P	05-09-2009	Z1
P42 / P43	S / N	1112	HC	522	411	12	13	A	1412 / 1417	32 / 32	AC	CR	P	05-09-2009	Z1
P45 / P46	S / N	1308	HC	522	415	427		A	1602 / 1607	32 / 32	AC	JA	P	05-09-2009	Z1
P49 / P50	N / S	1620	HC	522	98	25	14	A	1254 / 1259	30 / 30	JCV	JA	P	05-10-2009	Z2

Sheet Total 1393 25 **Destructive Carry Over**
Total to Date 2525

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/09/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 1247
Welder Tech. Carry Over 247 247

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P38 / P39	S / N	940	GM	760	409	156	15	A	1242 / 1247	32 / 32	AC	JA	P	05-09-2009	Z1
P41 / P42	S / N	1045	GM	760	411	67	16	A	1407 / 1412	32 / 32	AC	CR	P	05-09-2009	Z1
P44 / P45	S / N	1305	GM	760	410	477		A	1445 / 1450	32 / 32	AC	CR	P	05-09-2009	Z1
P48 / P49	N / S	1533	GM	760	407	384	17	A	1634 / 1639	31 / 31	AC	JA	P	05-09-2009	Z1

Sheet Total 1637 384 **Destructive Carry Over**
Total to Date 2884

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/10/2009
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Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 3317
Welder Tech. Carry Over 317 317

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P50 / P51	N / S	730	EE	500	410	227	18	A	809 / 814	32 / 32	AC	JA	P	05-18-2009	Z2 8:24/8:29 30-30
P53 / P54	N / S	831	EE	500	407	134	19	A	1000 / 1005	31 / 31	AC	JA	P	05-10-2009	
P56 / P57	N / S	945	EE	500	409	43	20	A	1050 / 1055	32 / 32	AC	JA	P	05-10-2009	Z1
P61 / P62	E / W	1053	EE	500	31	74		A	1104 / 1109	30 / 30	AC	CR	P	05-10-2009	
P62 / P63	E / W	1059	EE	500	31	105		A	1115 / 1120	32 / 32	AC	CR	P	05-10-2009	
P63 / P64	E / W	1105	EE	500	32	137		A	1120 / 1125	32 / 32	AC	CR	P	05-10-2009	
P64 / P65	E / W	1111	EE	500	33	170		A	1123 / 1128	32 / 32	AC	CR	P	05-10-2009	
P66 / P67	E / W	1118	EE	500	35	205		A	1133 / 1138	32 / 32	AC	CR	P	05-10-2009	
P69 / P70	E / W	1126	EE	500	38	243		A	1147 / 1152	30 / 30	AC	CR	P	05-10-2009	
P72 / P73	E / W	1134	EE	500	41	284		A	1234 / 1239	30 / 30	JCV	CR	P	05-10-2009	
P75 / P76	E / W	1145	EE	500	45	329		A	1243 / 1248	30 / 30	JCV	CR	P	05-10-2009	

Sheet Total 1512 329 **Destructive Carry Over**
Total to Date 4829

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/10/2009
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Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 2525
Welder Tech. Carry Over 25 25

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P52 / P53	N / S	757	HC	522	406	431		A	924 / 929	31 / 31	AC	JA	P	05-10-2009	Z1
P55 / P56	N / S	910	HC	522	408	339	21	A	1028 / 1033	32 / 32	AC	JA	P	05-10-2009	Z1
P59 / P60	N / S	1045	HC	522	57	396		A	1057 / 1103	30 / 30	AC	CR	P	05-10-2009	
P59 / P61	E / W	1104	HC	522	6	402		A	1112 / 1117	30 / 30	AC	CR	P	05-10-2009	
P60 / P61	E / W	1105	HC	522	24	426		A	1112 / 1117	30 / 30	AC	CR	P	05-10-2009	
P65 / P66	E / W	1114	HC	522	34	460		A	1128 / 1133	32 / 32	AC	CR	P	05-10-2009	
P68 / P69	E / W	1121	HC	522	37	497		A	1142 / 1147	32 / 32	AC	CR	P	05-10-2009	
P71 / P72	E / W	1133	HC	522	40	37	22	A	1233 / 1238	30 / 30	JCV	CR	P	05-10-2009	
P74 / P75	E / W	1141	HC	522	43	80		A	1241 / 1246	30 / 30	JCV	CR	P	05-10-2009	
P58 / P59	N / S	1251	HC	522	57	137		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	Z1
P58 / P61	N / S	1259	HC	522	22.5	159.5		A	1445 / 1450	30 / 30	JCV	JA	P	05-10-2009	Z1
P58 / P62	N / S	1302	HC	522	22.5	182		A	1345 / 1350	30 / 30	AC	JA	P	05-10-2009	Z1
P58 / P63	N / S	1305	HC	522	22.5	204.5		A	1345 / 1350	30 / 30	AC	JA	P	05-10-2009	Z1
P58 / P64	N / S	1308	HC	522	22.5	227		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P65	N / S	1311	HC	522	22.5	249.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
				Sheet Total	1224.5	249.5	**Destructive Carry Over**								
				Total to Date	3749.5										

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 3749.5
Welder Tech. Carry Over 249.5 249.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P58 / P66	N / S	1314	HC	522	22.5	272		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P67	N / S	1317	HC	522	22.5	294.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P68	N / S	1320	HC	522	22.5	317		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P69	N / S	1322	HC	522	22.5	339.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P70	N / S	1325	HC	522	22.5	362		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P71	N / S	1328	HC	522	22.5	384.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P72	N / S	1330	HC	522	22.5	407		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P73	N / S	1334	HC	522	22.5	429.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P74	N / S	1337	HC	522	22.5	452		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P75	N / S	1340	HC	522	22.5	474.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	
P58 / P76	N / S	1343	HC	522	6	480.5		A	1345 / 1350	30 / 30	JCV	JA	P	05-10-2009	

Sheet Total 231 480.5 **Destructive Carry Over**
Total to Date 3980.5

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/10/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 2884
Welder Tech. Carry Over 384 384

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P51 / P52	N / S	752	GM	760	410	294	23	A	918 / 923	32 / 32	AC	JA	P	05-10-2009	Z1
P54 / P55	N / S	858	GM	760	404	198	24	A	1024 / 1029	32 / 32	AC	JA	P	05-10-2009	Z2 12:50/12:55 30/30
P57 / P58	N / S	1012	GM	760	411	109	25	A	1315 / 1320	30 / 30	AC	JA	P	05-10-2009	Z1
P67 / P68	E / W	1118	GM	760	36	145		A	1139 / 1144	32 / 32	AC	CR	P	05-10-2009	
P70 / P71	E / W	1126	GM	760	39	184		A	1149 / 1154	30 / 30	AC	CR	P	05-10-2009	
P73 / P74	E / W	1135	GM	760	42	226		A	1235 / 1240	30 / 30	JCV	CR	P	05-10-2009	

Sheet Total 1342 226 **Destructive Carry Over**
Total to Date 4226

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/12/2009
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Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P47 / P48	S / N	0	IB	48	210	210		V	0 / 0	0 / 0	JCV	CR	P	05-12-2009	z2 upper weld
P48 / CONDA	S / N	0	IB	48	198	0	26	V	0 / 0	0 / 0	JCV	CR	P	05-12-2009	z2 lower weld

Sheet Total 408 | 0 **Destructive Carry Over**
Total to Date 408

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/12/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 0
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P48 / CONDA	N / S	0	RC	55	198	198		V	0 / 0	0 / 0	JCV	CR	P	05-12-2009	Z1 lower weld
P47 / P48	N / S	0	RC	55	181	0	27	V	0 / 0	0 / 0	JCV	CR	P	05-12-2009	z1 upper weld

Sheet Total 379 | 0 **Destructive Carry Over**
Total to Date 379

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/12/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 4829
Welder Tech. Carry Over 329 329

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P77 / P78	E / W	1300	EE	500	51	380		A	825 / 830	30 / 30	JCV	JA	P	05-13-2009	
P76 / P77	E / W	1333	EE	500	48	428		A	828 / 833	30 / 30	JCV	JA	P	05-13-2009	
P81 / P82	E / W	1352	EE	500	55	483		A	815 / 820	30 / 30	JCV	JA	P	05-13-2009	
P83 / P84	E / W	1403	EE	500	58	41	28	A	808 / 813	30 / 30	JCV	CR	P	05-13-2009	
P85 / P86	E / W	1415	EE	500	60	101		A	808 / 813	30 / 30	JCV	CR	P	05-13-2009	
P87 / P88	E / W	1428	EE	500	62	163		A	759 / 805	30 / 30	AC	CR	P	05-13-2009	
P89 / P90	E / W	1437	EE	500	67	230		A	754 / 759	30 / 30	AC	CR	P	05-13-2009	
P92 / P93	E / W	1543	EE	500	88	318		A	754 / 759	32 / 32	AC	JA	P	05-15-2009	Ac
P94 / P95	W / E	1600	EE	500	84	402		A	812 / 817	32 / 32	AC	CR	P	05-12-2009	Z1

Sheet Total 573 402 **Destructive Carry Over**
Total to Date 5402

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

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Project Total Carry Over 4226
Welder Tech. Carry Over 226 226

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P78 / P79	E / W	1318	GM	760	51	277		A	820 / 825	30 / 30	JCV	JA	P	05-13-2009	
P79 / P80	E / W	1328	GM	760	52	329		A	818 / 823	30 / 30	JCV	JA	P	05-13-2009	
P91 / P92	E / W	1330	GM	760	84	413		A	745 / 750	32 / 32	AC	JA	P	05-15-2009	Z1
P80 / P81	E / W	1340	GM	760	54	467		A	817 / 823	30 / 30	JCV	JA	P	05-13-2009	
P82 / P83	E / W	1351	GM	760	56	23	29	A	810 / 815	30 / 30	JCV	JA	P	05-13-2009	
P86 / P87	E / W	1413	GM	760	61	84		A	805 / 810	30 / 30	JCV	CR	P	05-13-2009	
P84 / P85	E / W	1420	GM	760	59	143		A	810 / 815	30 / 30	JCV	CR	P	05-13-2009	
P88 / P89	E / W	1425	GM	760	64	207		A	757 / 803	30 / 30	AC	CR	P	05-13-2009	
P31 / P91	E / W	1516	GM	760	80	287		A	743 / 748	32 / 32	AC	JA	P	05-15-2009	Z1
P93 / P94	E / W	1546	GM	760	88	375		A	803 / 808	32 / 32	AC	CR	P	05-15-2009	Z1
P95 / P96	E / W	1605	GM	760	47	422		A	814 / 819	32 / 32	AC	CR	P	05-15-2009	

Sheet Total 696 422 **Destructive Carry Over**
Total to Date 4922

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/13/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 5402
Welder Tech. Carry Over 402 402

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P102 / P103	N / S	947	JR	500	41	443		A	958 / 1003	30 / 30	AC	CR	P	05-13-2009	
P98 / P103	N / S	1007	JR	500	24	467	0	A	1017 / 1022	30 / 30	AC	CR	P	05-13-2009	
P103 / P104	N / S	1010	JR	500	13	480		A	1017 / 1022	30 / 30	AC	CR	P	05-13-2009	
P98 / P104	W / E	1012	JR	500	11	491		V	0 / 0	0 / 0	JCV	CR	P	05-19-2009	Flap welded
P97 / P102	E / W	1026	JR	500	22.5	13.5	30	A	1042 / 1047	31 / 31	AC	CR	P	05-13-2009	
P97 / P103	E / W	1029	JR	500	22.5	36		A	1042 / 1047	31 / 31	AC	CR	P	05-13-2009	
P97 / P98	E / W	1033	JR	500	19	55		A	1042 / 1047	31 / 31	AC	CR	P	05-13-2009	
P101 / P105	N / S	1100	JR	500	279	334		A	1550 / 1555	32 / 32	AC	JA	P	05-13-2009	
P101 / P106	N / S	1137	JR	500	120	454		A	1550 / 1555	32 / 32	AC	JA	P	05-13-2009	
P109 / P111	N / S	1310	JR	500	289	243	31	A	1610 / 1615	32 / 32	AC	JA	P	05-13-2009	Z1
P110 / P111	N / S	1349	JR	500	11	254		A	1610 / 1615	32 / 32	AC	JA	P	05-13-2009	Z1
P110 / P112	N / S	1350	JR	500	95	349		A	1610 / 1615	32 / 32	AC	JA	P	05-13-2009	Z1
P115 / P116	E / W	1430	JR	500	22.5	371.5		A	1440 / 1445	30 / 30	AC	CR	P	05-13-2009	
P115 / P117	N / S	1450	JR	500	327	198.5	32	A	1637 / 1642	32 / 32	AC	CR	P	05-13-2009	
P116 / P117	N / S	1540	JR	500	5	203.5		A	750 / 755	30 / 30	AC	CR	P	05-14-2009	

Sheet Total 1301.5 203.5 **Destructive Carry Over**
Total to Date 6703.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

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Project Total Carry Over 6703.5
Welder Tech. Carry Over 203.5 203.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P116 / P118	N / S	1541	JR	500	64	267.5		A	750 / 755	30 / 30	AC	CR	P	05-14-2009	

Sheet Total 64 267.5 **Destructive Carry Over**
Total to Date 6767.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/13/2009
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Project Total Carry Over 3980.5
Welder Tech. Carry Over 480.5 480.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P90 / P97	E / W	845	HC	522	65	45.5	33	A	909 / 914	30 / 30	AC	CR	P	05-13-2009	
P99 / P100	N / S	920	HC	522	395	440.5		A	1106 / 1111	32 / 32	AC	CR	P	05-13-2009	z2 8:05/8:10 30/30 5/14
P76 / P99	N / S	1055	HC	522	16	456.5		A	1249 / 1254	30 / 30	AC	JA	P	05-13-2009	Z1
P77 / P99	N / S	1058	HC	522	22.5	479		A	1249 / 1250	30 / 30	AC	JA	P	05-13-2009	Z1
P87 / P99	N / S	1100	HC	522	22.5	1.5	34	A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P78 / P99	N / S	1101	HC	522	22.5	24		A	1249 / 1254	30 / 30	AC	JA	P	05-13-2009	Z1
P79 / P99	N / S	1105	HC	522	22.5	46.5		A	1249 / 1253	30 / 30	AC	JA	P	05-13-2009	Z1
P80 / P99	N / S	1108	HC	522	22.5	69		A	1249 / 1253	30 / 30	AC	JA	P	05-13-2009	Z1
P81 / P99	N / S	1111	HC	522	18	87		A	1249 / 1253	30 / 30	AC	JA	P	05-13-2009	Z1
P82 / P99	N / S	1113	HC	522	22.5	109.5		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z1 ends 10ft. S of. S81/99
P84 / P99	N / S	1120	HC	522	22.5	132		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P85 / P99	N / S	1124	HC	522	22.5	154.5		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P83 / P99	N / S	1126	HC	522	22.5	177		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P86 / P99	N / S	1126	HC	522	22.5	199.5		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P88 / P99	N / S	1134	HC	522	22.5	222		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2

Sheet Total 741.5 222 **Destructive Carry Over**
Total to Date 4722

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

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Project Total Carry Over 4722
Welder Tech. Carry Over 222 222

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P89 / P99	N / S	1137	HC	522	22.5	244.5		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P90 / P99	N / S	1140	HC	522	22.5	267		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P97 / P99	N / S	1143	HC	522	22.5	289.5		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P99 / P102	N / SEOS	1146	HC	522	43	332.5		A	808 / 813	30 / 30	AC	JA	P	05-14-2009	Z2
P107 / P109	N / S	1308	HC	522	287	119.5	35	A	1558 / 1603	32 / 32		JA	P	05-13-2009	Z1
P108 / P109	N / S	1348	HC	522	7	126.5		A	1558 / 1603	32 / 32	AC	JA	P	05-13-2009	Z1
P108 / P110	N / S	1349	HC	522	107	233.5		A	1558 / 1603	32 / 32	AC	JA	P	05-13-2009	Z1
P113 / P115	N / S	1416	HC	522	314	47.5	36	A	1616 / 1621	32 / 32	AC	CR	P	05-13-2009	
P114 / P115	N / S	1458	HC	522	12	59.5		A	1616 / 1621	32 / 32	AC	CR	P	05-13-2009	
P114 / P116	N / S	1500	HC	522	71	130.5		A	1616 / 1621	32 / 32	AC	CR	P	05-13-2009	Z2 0754/0759 30/30
P119 / P121	E / W	1604	HC	522	4	134.5		A	1602 / 1607	30 / 30	AC	CR	P	05-13-2009	0
P119 / P120	E / W	1605	HC	522	20	154.5		A	1602 / 1607	30 / 30	AC	CR	P	05-13-2009	0
P120 / P121	N / S	1610	HC	522	59	213.5		A	730 / 735	30 / 30	AC	CR	P	05-13-2009	z2 0731/0736 30/30

Sheet Total 991.5 213.5 **Destructive Carry Over**
Total to Date 5713.5

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/13/2009
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Project Total Carry Over 4922
Welder Tech. Carry Over 422 422

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P100 / P101	N / S	933	GM	760	398	320	37	A	1110 / 1115	32 / 32	AC	CR	P	05-13-2009	
P105 / P106	E / W	1101	GM	760	22.5	342.5		A	1110 / 1115	30 / 30	JCC	JA	P	05-13-2009	Z1 butt
P107 / P108	E / W	1133	GM	760	22.5	365		A	1144 / 1149	30 / 30	JCV	JA	P	05-13-2009	Z1
P105 / P107	N / S	1142	GM	760	279	144	38	A	1553 / 1558	32 / 32	AC	JA	P	05-13-2009	
P106 / P107	N / S	1219	GM	760	7	151		A	1553 / 1558	32 / 32	AC	JA	P	05-13-2009	
P106 / P108	N / S	1220	GM	760	113	264		A	1553 / 1558	32 / 32	AC	JA	P	05-13-2009	
P109 / P110	E / W	1305	GM	760	22.5	286.5		A	1319 / 1324	31 / 31	AC	JA	P	05-13-2009	Z1
P111 / P112	E / W	1330	GM	760	22.5	309		A	1338 / 1343	30 / 30	AC	JA	P	05-13-2009	Z1
P113 / P114	E / W	1353	GM	760	22.5	331.5		A	1402 / 1407	30 / 30	AC	JA	P	05-13-2009	Z1
P111 / P113	N / S	1402	GM	760	299	130.5	39	A	1613 / 1618	32 / 32	AC	JA	P	05-13-2009	Z1
P112 / P113	N / S	1442	GM	760	10	140.5		A	1613 / 1618	32 / 32	AC	JA	P	05-13-2009	Z1
P112 / P114	N / S	1443	GM	760	84	224.5		A	1613 / 1618	32 / 32	AC	JA	P	05-13-2009	Z1
P117 / P118	E / W	1501	GM	760	22.5	247		A	1505 / 1510	30 / 30	AC	CR	P	05-13-2009	
P117 / P119	N / S	1525	GM	760	330	77	40	A	733 / 738	30 / 30	AC	CR	P	05-13-2009	
P118 / P119	N / S	1609	GM	760	4	81		A	740 / 745	30 / 30	AC	CR	P	05-13-2009	

Sheet Total 1659 81 **Destructive Carry Over**
Total to Date 6581

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

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Project Total Carry Over 6581
Welder Tech. Carry Over 81 81

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P118 / P120	N / S	1610	GM	760	61	142		A	740 / 745	30 / 30	AC	CR	P	05-13-2009	

Sheet Total 61 142 **Destructive Carry Over**
Total to Date 6642

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

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Project Total Carry Over 408
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P121 / CONDA	S / N	0	IB	48	57	57		V	0 / 0	0 / 0	JCV	CR	P	05-14-2009	
P119 / CONDA	S / N	0	IB	48	194	0	41	V	0 / 0	0 / 0	JCV	CR	P	05-14-2009	

Sheet Total 251 | 0 **Destructive Carry Over**
Total to Date 659

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/14/2009
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Project Total Carry Over 379
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P119 / CONDA	S / N	0	RC	55	144	144		V	0 / 0	0 / 0	JCV	CR	P	05-14-2009	

Sheet Total 144 | 144 **Destructive Carry Over**
Total to Date 523

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/14/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 6642
Welder Tech. Carry Over 142 142

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P48 / P119	E / W	825	HC	760	20	162		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P48 / P117	E / W	826	HC	760	2	164		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P49 / P117	E / W	826	HC	760	21	185		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P50 / P115	E / W	830	HC	760	22	186.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P49 / P115	E / W	832	HC	760	1.5	208.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P50 / P113	E / W	836	HC	760	2	210.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P51 / P113	E / W	836	HC	760	0	210.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P51 / P111	E / W	840	HC	760	2	212.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P52 / P111	E / W	840	HC	760	21	233.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P52 / P109	E / W	843	HC	760	1.5	235		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P53 / P109	E / W	843	HC	760	21	256		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P53 / P107	E / W	847	HC	760	2	258		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P54 / P107	E / W	847	HC	760	22	280		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P54 / P105	E / W	850	HC	760	2	282		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P55 / P105	E / W	850	HC	760	21	303		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1

Sheet Total 161 303 **Destructive Carry Over**
Total to Date 6803

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/14/2009
S&ME Project No.: 1356-06-825
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Project Total Carry Over 6803
Welder Tech. Carry Over 303 303

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P55 / P101	E / W	853	HC	760	2	305		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P56 / P101	E / W	853	HC	760	21	326		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P56 / P100	E / W	857	HC	760	1.5	327.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P57 / P100	E / W	857	HC	760	21	348.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P57 / P99	E / W	900	HC	760	2	350.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1
P58 / P99	E / WEOS	900	HC	760	21	371.5		A	907 / 912	35 / 35	JR	JA	P	05-14-2009	Z1

Sheet Total 68.5 371.5 **Destructive Carry Over**
Total to Date 6871.5

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 6767.5
Welder Tech. Carry Over 267.5 267.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P124 / P125	S / N	821	JR	500	343	110.5	42	A	946 / 951	30 / 30	AC	CR	P	05-15-2009	
P125 / P127	S / N	920	JR	500	286	396.5		A	1336 / 1341	32 / 32	AC	CR	P	05-15-2009	
P125 / P126	S / N	958	JR	500	61	457.5		A	1336 / 1341	32 / 32	AC	CR	P	05-15-2009	
P129 / P131	S / N	1020	JR	500	184	141.5	43	A	704 / 709	33 / 33	JR	CR	P	05-16-2009	
P129 / P130	S / N	1047	JR	500	51	192.5		A	704 / 709	33 / 33	JR	CR	P	05-16-2009	
P128 / P130	S / N	1054	JR	500	118	310.5		A	704 / 709	33 / 33	JR	CR	P	05-16-2009	
P136 / P137	S / N	1120	JR	500	22.5	333		A	1150 / 1155	30 / 30	AC	CR	P	05-15-2009	Z1
P135 / P137	S / N	1127	JR	500	59	392		A	713 / 718	32 / 32	JR	CR	P	05-16-2009	Z1
P135 / P136	S / N	1137	JR	500	40	432		A	713 / 718	32 / 32	JR	CR	P	05-16-2009	Z1
P134 / P136	S / N	1142	JR	500	267	199	44	A	713 / 718	32 / 32	JR	CR	P	05-16-2009	Z1
P140 / P142	S / N	1342	JR	500	342	41	45	A	720 / 725	30 / 30	JR	JA	P	05-16-2009	Z1
P140 / P141	S / NEOS	1425	JR	500	35	76		A	720 / 725	30 / 30	JR	JA	P	05-16-2009	Z1
P144 / P146	S / N	1438	JR	500	300	376		A	725 / 730	32 / 32	JR	CR	P	05-16-2009	Z1
P144 / P145	S / N	1515	JR	500	21	397		A	725 / 730	32 / 32	JR	CR	P	05-16-2009	Z1
P143 / P145	S / NEOS	1517	JR	500	62	459		A	725 / 730	32 / 32	JR	CR	P	05-16-2009	Z1

Sheet Total 2191.5 459 **Destructive Carry Over**
Total to Date 8959

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 8959
Welder Tech. Carry Over 459 459

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P149 / P150	E / W	1540	JR	500	22.5	481.5		A	1555 / 1600	30 / 30	AC	CR	P	05-15-2009	
P148 / P149	S / N	1550	JR	500	12	493.5		A	748 / 753	30 / 30	AC	CR	P	05-16-2009	Z1
P147 / P149	S / N	1553	JR	500	99	92.5	46	A	748 / 753	30 / 30	AC	CR	P	05-16-2009	Z1

Sheet Total 133.5 92.5 **Destructive Carry Over**
Total to Date 9092.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 5713.5
Welder Tech. Carry Over 213.5 | 213.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P122 / P123	W / E	757	HC	522	22.5	236		A	806 / 811	30 / 30	AC	CR	P	05-15-2009	
P123 / P124	S / N	815	HC	522	54	290		A	951 / 956	30 / 30	AC	CR	P	05-15-2009	
P122 / P124	S / N	822	HC	522	74	364		A	951 / 956	30 / 30	AC	CR	P	05-15-2009	Z1

Sheet Total 150.5 | 364 **Destructive Carry Over**
Total to Date 5864

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 6871.5
Welder Tech. Carry Over 371.5 371.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P126 / P127	E / W	834	GM	760	22.5	394		A	845 / 850	30 / 30	AC	CR	P	05-15-2009	
P122 / P124	S / N	840	GM	760	210	104	47	A	943 / 948	30 / 30	AC	CR	P	05-15-2009	Z2
P127 / P129	S / N	925	GM	760	228	332		A	1354 / 1359	30 / 30	AC	CR	P	05-15-2009	Z1
P128 / P129	E / W	947	GM	760	22.5	354.5		A	932 / 935	30 / 30	AC	CR	P	05-15-2009	
P127 / P128	S / N	1005	GM	760	57	411.5		A	1354 / 1359	30 / 30	AC	CR	P	05-15-2009	Z1
P126 / P128	S / N	1014	GM	760	58	469.5		A	1354 / 1359	30 / 30	AC	JA	P	05-15-2009	
P131 / P133	S / N	1033	GM	760	134	45.5	48	A	710 / 715	32 / 32	JR	JA	P	05-16-2009	
P131 / P132	S / N	1055	GM	760	53	98.5		A	710 / 715	32 / 32	JR	JA	P	05-16-2009	
P130 / P132	S / N	1105	GM	760	166	264.5		A	710 / 715	32 / 32	JR	JA	P	05-16-2009	
P138 / P139	E / W	1154	GM	760	22.5	287		A	1200 / 1205	30 / 30	AC	CR	P	05-15-2009	Z1
P137 / P139	S / N	1300	GM	760	23	310		A	714 / 719	32 / 32	JR	CR	P	05-16-2009	Z1
P137 / P138	S / N	1305	GM	760	39	349		A	714 / 719	32 / 32	JR	CR	P	05-16-2009	Z1
P136 / P138	S / N	1311	GM	760	307	156	49	A	714 / 719	32 / 32	JR	JA	P	05-16-2009	Z1
P141 / P142	E / W	1355	GM	760	22.5	178.5		A	1400 / 1405	30 / 30	AC	JA	P	05-15-2009	Z1
P143 / P144	E / W	1410	GM	760	22.5	201		A	1422 / 1427	30 / 30	Z1	JA	P	05-15-2009	Z1

Sheet Total 1387.5 201 **Destructive Carry Over**
Total to Date 8259

macine no. 52 removed from production after seaming 171/173 due to burnouts

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 8259
Welder Tech. Carry Over 201 201

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P145 / P146	E / W	1429	GM	760	22.5	223.5		A	1440 / 1445	30 / 30	AC	CR	P	05-15-2009	Z1
P147 / P148	E / W	1449	GM	760	22.5	246		A	1502 / 1507	30 / 30	AC	CR	P	05-15-2009	
P146 / P148	S / N	1501	GM	760	282	28	50	A	728 / 733	33 / 33	JR	CR	P	05-16-2009	Z1
P146 / P147	S / N	1539	GM	760	16	44		A	728 / 733	33 / 33	JR	CR	P	05-16-2009	Z1
P145 / P147	S / N	1541	GM	760	84	128		A	728 / 733	33 / 33	JR	CR	P	05-16-2009	Z1

Sheet Total 427 128 **Destructive Carry Over**
Total to Date 8686

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
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Project Total Carry Over 663
Welder Tech. Carry Over 163 163

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P95 / P123	S / N	926	HC	777	13	176		A	1030 / 1035	30 / 30	AC	CR	P	05-16-2009	
P94 / P123	S / N	931	HC	777	22.5	198.5		A	1030 / 1035	30 / 30	AC	CR	P	05-16-2009	
P93 / P123	S / N	934	HC	777	14	212.5		A	1030 / 1035	30 / 30	AC	CR	P	05-16-2009	
P93 / P122	S / N	936	HC	777	8.5	221		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P92 / P122	S / N	938	HC	777	22.5	243.5		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P91 / P122	S / N	941	HC	777	22.5	266		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P31 / P122	S / N	944	HC	777	22.5	288.5		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P30 / P122	S / N	948	HC	777	22.5	311		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P29 / P122	S / N	951	HC	777	22.5	333.5		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P28 / P122	S / N	954	HC	777	22.5	356		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P27 / P122	S / N	958	HC	777	22.5	378.5		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P26 / P122	S / N	1001	HC	777	22.5	401		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P25 / P122	S / N	1004	HC	777	22.5	423.5		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P24 / P122	S / N	1008	HC	777	22.5	446		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P23 / P122	S / N	1011	HC	777	22.5	468.5		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
				Sheet Total	305.5	468.5	**Destructive Carry Over**								
				Total to Date	968.5										

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/15/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 968.5
Welder Tech. Carry Over 468.5 468.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P22 / P122	S / N	1015	HC	777	22.5	491		A	1025 / 1030	32 / 32	AC	CR	P	05-16-2009	
P130 / P131	E / W	1023	HC	777	22.5	13.5	51	A	1040 / 1045	30 / 30	AC	CR	P	05-15-2009	
P132 / P133	E / W	1034	HC	777	22.5	36		A	1042 / 1047	30 / 30	AC	CR	P	05-15-2009	
P134 / P135	E / W	1049	HC	777	22.5	58.5		A	1055 / 1100	30 / 30	AC	CR	P	05-15-2009	Z1
P133 / P135	S / N	1110	HC	777	96	154.5		A	713 / 718	32 / 32	JR	CR	P	05-16-2009	Z1
P133 / P134	S / N	1118	HC	777	45	199.5		A	711 / 716	35 / 35	JR	CR	P	05-16-2009	
P132 / P134	S / N	1125	HC	777	221	420.5		A	711 / 716	35 / 35	JR	CR	P	05-16-2009	
P139 / P140	S / N	1309	HC	777	32	452.5		A	716 / 721	33 / 33	JR	JA	P	05-16-2009	Z1
P138 / P140	S / N	1314	HC	777	344	296.5	52	A	716 / 721	33 / 33	JR	JA	P	05-16-2009	Z1
P142 / P144	S / N	1415	HC	777	318	114.5	53	A	722 / 727	32 / 32	JR	JA	P	05-16-2009	Z1
P142 / P143	S / N	1457	HC	777	25	139.5		A	722 / 727	32 / 32	JR	JA	P	05-16-2009	Z1
P141 / P143	S / NEOS	1500	HC	777	33	172.5		A	722 / 727	32 / 32	JR	JA	P	05-16-2009	Z1
P148 / P150	S / N	1545	HC	777	272	444.5		A	752 / 757	30 / 30	AC	CR	P	05-16-2009	Z1

Sheet Total 1476 444.5 **Destructive Carry Over**
Total to Date 2444.5

CQA Personnel: Cedric Ruhl

GEOMEMBRANE SEAM LOG

Date: 05/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 659
Welder Tech. Carry Over 0 | 0

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P119 / P150	N / S	805	IB	48	81	81		V	0 / 0	0 / 0	JCV	JA	P	05-16-2009	Extrusion
P121 / P150	N / SEOS	900	IB	48	60	141		V	0 / 0	0 / 0	JCV	JA	P	05-16-2009	Extrusion

Sheet Total 141 | 0 **Destructive Carry Over**
Total to Date 800

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/16/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 523
Welder Tech. Carry Over 144 | 144

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P119 / P149	N / S	800	RC	55	111	255		V	0 / 0	0 / 0	JCV	JA	P	05-16-2009	Extrusion
P119 / P150	NEOS / S	900	RC	55	139	0	55	V	0 / 0	0 / 0	JCV	JA	P	05-16-2009	Extrusion

Sheet Total 250 | 0 **Destructive Carry Over**
Total to Date 773

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/19/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 2444.5
Welder Tech. Carry Over 444.5 444.5

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P32 / P122	EEOS / W	755	HC	777	21	465.5		A	907 / 912	30 / 30	JCV	JA	P	05-19-2009	Z3
P32 / P124	E / W	801	HC	777	2	467.5		A	907 / 912	30 / 30	JCV	JA	P	05-19-2009	Z3
P33 / P124	E / W	801	HC	777	21	488.5		A	907 / 912	30 / 30	JCV	JA	P	05-19-2009	Z3
P33 / P125	E / W	805	HC	777	2	490.5		A	907 / 912	30 / 30	JCV	JA	P	05-19-2009	Z3
P34 / P125	E / W	805	HC	777	22	12.5	54	A	907 / 912	30 / 30	JCV	JA	P	05-19-2009	Z3
P34 / P126	E / W	808	HC	777	1.5	14		A	907 / 912	30 / 30	JCV	JA	P	05-19-2009	Z3
P35 / P126	E / W	808	HC	777	22	36		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P35 / P128	E / W	812	HC	777	2	38		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P35 / P128	E / W	812	HC	777	2	40		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P36 / P128	E / W	812	HC	777	22	62		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P36 / P130	E / W	815	HC	777	2	64		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P37 / P130	E / W	815	HC	777	22	86		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P37 / P132	E / W	819	HC	777	2	88		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P38 / P132	E / W	819	HC	777	22	110		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P38 / P134	E / W	822	HC	777	2	112		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2

Sheet Total 167.5 112 **Destructive Carry Over**
Total to Date 2612

CQA Personnel: James Addis

GEOMEMBRANE SEAM LOG

Date: 05/19/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Project Total Carry Over 2612
Welder Tech. Carry Over 112 112

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	AIR PRESSURE TEST Pressure Start/ Finish	AIR PRESSURE TEST Tech. Init.	AIR PRESSURE TEST QC Init.	Pass /Fail	Date	Remarks (ZONE)
P39 / P134	E / W	822	HC	777	22	134		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P39 / P136	E / W	826	HC	777	2	136		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P40 / P136	E / W	826	HC	777	22	158		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P40 / P138	E / W	830	HC	777	2	160		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P41 / P138	E / W	830	HC	777	22	182		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P41 / P140	E / W	834	HC	777	2	184		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P42 / P140	E / W	834	HC	777	22	206		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P42 / P141	E / W	837	HC	777	2	208		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P43 / P141	E / W	837	HC	777	22	230		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P43 / P143	E / W	840	HC	777	2	232		A	900 / 905	30 / 30	JCV	JA	P	05-19-2009	Z2
P44 / P143	E / W	840	HC	777	22	254		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1
P44 / P145	E / W	844	HC	777	2	256		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1
P45 / P145	E / W	844	HC	777	22	278		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1
P45 / P147	E / W	848	HC	777	2	280		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1
P46 / P147	E / W	848	HC	777	22	302		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1
				Sheet Total	190	302	**Destructive Carry Over**								
				Total to Date	2802										

GEOMEMBRANE SEAM LOG

CQA Personnel: James Addis

Date: 05/19/2009
S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Project Total Carry Over 2802
Welder Tech. Carry Over 302 302

Seam Panels	Seam Start/Finish	Time	Tech. Init.	Mach. No.	Length Welded	Length From Previous Destr.	Located Destr. Number	Test Type (Air / Vac.)	AIR PRESSURE TEST Time Start/ Finish	Pressure Start/ Finish	Tech. Init.	QC Init.	Pass /Fail	Date	Remarks (ZONE)
P46 / P149	E / W	852	HC	777	2	304		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1
P47 / P149	E / WEOS	852	HC	777	17	321		A	858 / 903	30 / 30	JCV	JA	P	05-19-2009	Z1

Sheet Total 19 321 **Destructive Carry Over**
Total to Date 2821

CQA Personnel: James Addis

Primary HDPE Geomembrane Destructive Laboratory Test Results

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P1
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)

Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	182.0	Elongation
S2	151.0	Elongation
S3	171.0	Elongation
S4	161.0	Elongation
S5	165.0	Elongation
Average	166.0	*FTB - Film Tear Bond
Standard Deviation	10.3	
Maximum	182.0	
Minimum	151.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)

Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	140.0	FTB
P1B	145.0	FTB
P2A	115.0	FTB
P2B	115.0	FTB
P3A	142.0	FTB
P3B	139.0	FTB
P4A	115.0	FTB
P4B	112.0	FTB
P5A	125.0	FTB
P5B	119.0	FTB
Average	126.7	*FTB - Film Tear Bond
Standard Deviation	12.6	
Maximum	145.0	
Minimum	112.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P2
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	174.0	Elongation
S2	167.0	Elongation
S3	183.0	Elongation
S4	168.0	Elongation
S5	166.0	Elongation
Average	171.6	*FTB - Film Tear Bond
Standard Deviation	6.3	
Maximum	183.0	
Minimum	166.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	136.0	FTB
P1B	133.0	FTB
P2A	113.0	FTB
P2B	102.0	FTB
P3A	136.0	FTB
P3B	127.0	FTB
P4A	124.0	FTB
P4B	111.0	FTB
P5A	113.0	FTB
P5B	105.0	FTB
Average	120.0	*FTB - Film Tear Bond
Standard Deviation	12.1	
Maximum	136.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P3
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	178.0	Elongation
S2	163.0	Elongation
S3	176.0	Elongation
S4	163.0	Elongation
S5	178.0	Elongation
Average	171.6	*FTB - Film Tear Bond
Standard Deviation	7.1	
Maximum	178.0	
Minimum	163.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	132.0	FTB
P1B	130.0	FTB
P2A	105.0	FTB
P2B	105.0	FTB
P3A	129.0	FTB
P3B	118.0	FTB
P4A	107.0	FTB
P4B	101.0	FTB
P5A	118.0	FTB
P5B	101.0	FTB
Average	114.6	*FTB - Film Tear Bond
Standard Deviation	11.8	
Maximum	132.0	
Minimum	101.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P4
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	175.0	Elongation
S2	161.0	Elongation
S3	174.0	Elongation
S4	159.0	Elongation
S5	175.0	Elongation
Average	168.8	*FTB - Film Tear Bond
Standard Deviation	7.2	
Maximum	175.0	
Minimum	159.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	151.0	FTB
P1B	130.0	FTB
P2A	108.0	FTB
P2B	125.0	FTB
P3A	121.0	FTB
P3B	131.0	FTB
P4A	108.0	FTB
P4B	119.0	FTB
P5A	139.0	FTB
P5B	124.0	FTB
Average	125.6	*FTB - Film Tear Bond
Standard Deviation	12.5	
Maximum	151.0	
Minimum	108.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P5
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	175.0	Elongation
S2	163.0	Elongation
S3	170.0	Elongation
S4	148.0	Elongation
S5	178.0	Elongation
Average	166.8	*FTB - Film Tear Bond
Standard Deviation	10.7	
Maximum	178.0	
Minimum	148.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	134.0	FTB
P1B	133.0	FTB
P2A	125.0	FTB
P2B	143.0	FTB
P3A	156.0	FTB
P3B	145.0	FTB
P4A	129.0	FTB
P4B	121.0	FTB
P5A	133.0	FTB
P5B	146.0	FTB
Average	136.5	*FTB - Film Tear Bond
Standard Deviation	10.2	
Maximum	156.0	
Minimum	121.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P6
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	172.0	Elongation
S2	162.0	Elongation
S3	177.0	Elongation
S4	164.0	Elongation
S5	164.0	Elongation
Average	167.8	*FTB - Film Tear Bond
Standard Deviation	5.7	
Maximum	177.0	
Minimum	162.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	116.0	FTB
P1B	138.0	FTB
P2A	98.0	FTB
P2B	121.0	FTB
P3A	117.0	FTB
P3B	139.0	FTB
P4A	92.0	FTB
P4B	111.0	FTB
P5A	119.0	FTB
P5B	128.0	FTB
Average	117.9	*FTB - Film Tear Bond
Standard Deviation	14.4	
Maximum	139.0	
Minimum	92.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P7
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	185.0	Elongation
S2	172.0	Elongation
S3	183.0	Elongation
S4	171.0	Elongation
S5	184.0	Elongation
Average	179.0	*FTB - Film Tear Bond
Standard Deviation	6.2	
Maximum	185.0	
Minimum	171.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	144.0	FTB
P1B	127.0	FTB
P2A	118.0	FTB
P2B	120.0	FTB
P3A	142.0	FTB
P3B	124.0	FTB
P4A	120.0	FTB
P4B	122.0	FTB
P5A	112.0	FTB
P5B	108.0	FTB
Average	123.7	*FTB - Film Tear Bond
Standard Deviation	11.0	
Maximum	144.0	
Minimum	108.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P8
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	179.0	Elongation
S2	164.0	Elongation
S3	182.0	Elongation
S4	163.0	Elongation
S5	171.0	Elongation
Average	171.8	*FTB - Film Tear Bond
Standard Deviation	7.7	
Maximum	182.0	
Minimum	163.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	122.0	FTB
P1B	140.0	FTB
P2A	107.0	FTB
P2B	114.0	FTB
P3A	130.0	FTB
P3B	135.0	FTB
P4A	111.0	FTB
P4B	121.0	FTB
P5A	110.0	FTB
P5B	135.0	FTB
Average	122.5	*FTB - Film Tear Bond
Standard Deviation	11.3	
Maximum	140.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P9
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	180.0	Elongation
S2	164.0	Elongation
S3	179.0	Elongation
S4	164.0	Elongation
S5	165.0	Elongation
Average	170.4	*FTB - Film Tear Bond
Standard Deviation	7.4	
Maximum	180.0	
Minimum	164.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	131.0	FTB
P1B	126.0	FTB
P2A	116.0	FTB
P2B	119.0	FTB
P3A	148.0	FTB
P3B	135.0	FTB
P4A	120.0	FTB
P4B	121.0	FTB
P5A	88.0	FTB
P5B	117.0	FTB
Average	122.1	*FTB - Film Tear Bond
Standard Deviation	14.7	
Maximum	148.0	
Minimum	88.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P10
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	173.0	Elongation
S2	156.0	Elongation
S3	176.0	Elongation
S4	156.0	Elongation
S5	159.0	Elongation
Average	164.0	*FTB - Film Tear Bond
Standard Deviation	8.7	
Maximum	176.0	
Minimum	156.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	127.0	FTB
P1B	112.0	FTB
P2A	115.0	FTB
P2B	114.0	FTB
P3A	120.0	FTB
P3B	155.0	FTB
P4A	111.0	FTB
P4B	117.0	FTB
P5A	118.0	FTB
P5B	85.0	FTB
Average	117.4	*FTB - Film Tear Bond
Standard Deviation	16.3	
Maximum	155.0	
Minimum	85.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P11
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	174.0	Elongation
S2	159.0	Elongation
S3	174.0	Elongation
S4	156.0	Elongation
S5	160.0	Elongation
Average	164.6	*FTB - Film Tear Bond
Standard Deviation	7.8	
Maximum	174.0	
Minimum	156.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	136.0	FTB
P1B	125.0	FTB
P2A	126.0	FTB
P2B	127.0	FTB
P3A	166.0	FTB
P3B	164.0	FTB
P4A	150.0	FTB
P4B	116.0	FTB
P5A	112.0	FTB
P5B	116.0	FTB
Average	133.8	*FTB - Film Tear Bond
Standard Deviation	18.7	
Maximum	166.0	
Minimum	112.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P12
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	179.0	Elongation
S2	166.0	Elongation
S3	179.0	Elongation
S4	164.0	Elongation
S5	163.0	Elongation
Average	170.2	*FTB - Film Tear Bond
Standard Deviation	7.2	
Maximum	179.0	
Minimum	163.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	123.0	FTB
P1B	121.0	FTB
P2A	132.0	FTB
P2B	115.0	FTB
P3A	141.0	FTB
P3B	133.0	FTB
P4A	123.0	FTB
P4B	95.0	FTB
P5A	109.0	FTB
P5B	106.0	FTB
Average	119.8	*FTB - Film Tear Bond
Standard Deviation	13.2	
Maximum	141.0	
Minimum	95.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P13
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	178.0	Elongation
S2	136.0	Elongation
S3	177.0	Elongation
S4	165.0	Elongation
S5	167.0	Elongation
Average	164.6	*FTB - Film Tear Bond
Standard Deviation	15.2	
Maximum	178.0	
Minimum	136.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	122.0	FTB
P1B	117.0	FTB
P2A	105.0	FTB
P2B	110.0	FTB
P3A	133.0	FTB
P3B	118.0	FTB
P4A	114.0	FTB
P4B	119.0	FTB
P5A	127.0	FTB
P5B	143.0	FTB
Average	120.8	*FTB - Film Tear Bond
Standard Deviation	10.6	
Maximum	143.0	
Minimum	105.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P14
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	171.0	Elongation
S2	157.0	Elongation
S3	167.0	Elongation
S4	152.0	Elongation
S5	155.0	Elongation
Average	160.4	*FTB - Film Tear Bond
Standard Deviation	7.3	
Maximum	171.0	
Minimum	152.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	121.0	FTB
P1B	127.0	FTB
P2A	112.0	FTB
P2B	116.0	FTB
P3A	132.0	FTB
P3B	125.0	FTB
P4A	106.0	FTB
P4B	118.0	FTB
P5A	106.0	FTB
P5B	119.0	FTB
Average	118.2	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	132.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P15
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	170.0	Elongation
S2	157.0	Elongation
S3	170.0	Elongation
S4	156.0	Elongation
S5	162.0	Elongation
Average	163.0	*FTB - Film Tear Bond
Standard Deviation	6.1	
Maximum	170.0	
Minimum	156.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	133.0	FTB
P1B	126.0	FTB
P2A	106.0	FTB
P2B	115.0	FTB
P3A	120.0	FTB
P3B	129.0	FTB
P4A	118.0	FTB
P4B	111.0	FTB
P5A	116.0	FTB
P5B	118.0	FTB
Average	119.2	*FTB - Film Tear Bond
Standard Deviation	7.8	
Maximum	133.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P16
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	149.0	Elongation
S2	156.0	Elongation
S3	176.0	Elongation
S4	158.0	Elongation
S5	161.0	Elongation
Average	160.0	*FTB - Film Tear Bond
Standard Deviation	8.9	
Maximum	176.0	
Minimum	149.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	129.0	FTB
P1B	133.0	FTB
P2A	108.0	FTB
P2B	109.0	FTB
P3A	128.0	FTB
P3B	123.0	FTB
P4A	111.0	FTB
P4B	113.0	FTB
P5A	116.0	FTB
P5B	108.0	FTB
Average	117.8	*FTB - Film Tear Bond
Standard Deviation	9.1	
Maximum	133.0	
Minimum	108.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P17
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	159.0	Elongation
S2	143.0	Elongation
S3	162.0	Elongation
S4	160.0	Elongation
S5	149.0	Elongation
Average	154.6	*FTB - Film Tear Bond
Standard Deviation	7.3	
Maximum	162.0	
Minimum	143.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	146.0	FTB
P1B	135.0	FTB
P2A	116.0	FTB
P2B	90.0	FTB
P3A	131.0	FTB
P3B	113.0	FTB
P4A	124.0	FTB
P4B	103.0	FTB
P5A	123.0	FTB
P5B	96.0	FTB
Average	117.7	*FTB - Film Tear Bond
Standard Deviation	16.8	
Maximum	146.0	
Minimum	90.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P18
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	155.0	Elongation
S2	173.0	Elongation
S3	161.0	Elongation
S4	175.0	Elongation
S5	162.0	Elongation
Average	165.2	*FTB - Film Tear Bond
Standard Deviation	7.6	
Maximum	175.0	
Minimum	155.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	123.0	FTB
P1B	126.0	FTB
P2A	111.0	FTB
P2B	121.0	FTB
P3A	122.0	FTB
P3B	141.0	FTB
P4A	92.0	FTB
P4B	117.0	FTB
P5A	111.0	FTB
P5B	119.0	FTB
Average	118.3	*FTB - Film Tear Bond
Standard Deviation	11.9	
Maximum	141.0	
Minimum	92.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P19
Tested by: Cedric Ruhl
Date Tested: 05/13/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	172.0	Elongation
S2	156.0	Elongation
S3	169.0	Elongation
S4	155.0	Elongation
S5	159.0	Elongation
Average	162.2	*FTB - Film Tear Bond
Standard Deviation	7.0	
Maximum	172.0	
Minimum	155.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	123.0	FTB
P1B	122.0	FTB
P2A	119.0	FTB
P2B	108.0	FTB
P3A	129.0	FTB
P3B	128.0	FTB
P4A	105.0	FTB
P4B	108.0	FTB
P5A	121.0	FTB
P5B	108.0	FTB
Average	117.1	*FTB - Film Tear Bond
Standard Deviation	8.6	
Maximum	129.0	
Minimum	105.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P20
Tested by: Cedric Ruhl
Date Tested: 05/14/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	157.0	Elongation
S2	177.0	Elongation
S3	178.0	Elongation
S4	169.0	Elongation
S5	180.0	Elongation
Average	172.2	*FTB - Film Tear Bond
Standard Deviation	8.5	
Maximum	180.0	
Minimum	157.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	133.0	FTB
P1B	127.0	FTB
P2A	112.0	FTB
P2B	111.0	FTB
P3A	134.0	FTB
P3B	130.0	FTB
P4A	117.0	FTB
P4B	89.0	FTB
P5A	120.0	FTB
P5B	122.0	FTB
Average	119.5	*FTB - Film Tear Bond
Standard Deviation	12.8	
Maximum	134.0	
Minimum	89.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P21
Tested by: Cedric Ruhl
Date Tested: 05/14/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	190.0	Elongation
S2	176.0	Elongation
S3	186.0	Elongation
S4	173.0	Elongation
S5	190.0	Elongation
Average	183.0	*FTB - Film Tear Bond
Standard Deviation	7.2	
Maximum	190.0	
Minimum	173.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	125.0	FTB
P1B	133.0	FTB
P2A	111.0	FTB
P2B	121.0	FTB
P3A	124.0	FTB
P3B	140.0	FTB
P4A	110.0	FTB
P4B	112.0	FTB
P5A	129.0	FTB
P5B	127.0	FTB
Average	123.2	*FTB - Film Tear Bond
Standard Deviation	9.4	
Maximum	140.0	
Minimum	110.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P22
Tested by: Cedric Ruhl
Date Tested: 05/14/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	156.0	Elongation
S2	153.0	Elongation
S3	183.0	Elongation
S4	168.0	Elongation
S5	183.0	Elongation
Average	168.6	*FTB - Film Tear Bond
Standard Deviation	12.8	
Maximum	183.0	
Minimum	153.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	137.0	FTB
P1B	136.0	FTB
P2A	122.0	FTB
P2B	114.0	FTB
P3A	143.0	FTB
P3B	133.0	FTB
P4A	124.0	FTB
P4B	107.0	FTB
P5A	135.0	FTB
P5B	120.0	FTB
Average	127.1	*FTB - Film Tear Bond
Standard Deviation	10.9	
Maximum	143.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P23
Tested by: Cedric Ruhl
Date Tested: 05/14/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	195.0	Elongation
S2	178.0	Elongation
S3	194.0	Elongation
S4	178.0	Elongation
S5	169.0	Elongation
Average	182.8	*FTB - Film Tear Bond
Standard Deviation	10.1	
Maximum	195.0	
Minimum	169.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	132.0	FTB
P1B	126.0	FTB
P2A	110.0	FTB
P2B	103.0	FTB
P3A	133.0	FTB
P3B	123.0	FTB
P4A	120.0	FTB
P4B	111.0	FTB
P5A	113.0	FTB
P5B	110.0	FTB
Average	118.1	*FTB - Film Tear Bond
Standard Deviation	9.7	
Maximum	133.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P24
Tested by: Cedric Ruhl
Date Tested: 05/14/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	192.0	Elongation
S2	176.0	Elongation
S3	189.0	Elongation
S4	168.0	Elongation
S5	190.0	Elongation
Average	183.0	*FTB - Film Tear Bond
Standard Deviation	9.4	
Maximum	192.0	
Minimum	168.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	136.0	FTB
P1B	114.0	FTB
P2A	134.0	FTB
P2B	109.0	FTB
P3A	74.0	FTB
P3B	136.0	FTB
P4A	137.0	FTB
P4B	140.0	FTB
P5A	143.0	FTB
P5B	135.0	FTB
Average	125.8	*FTB - Film Tear Bond
Standard Deviation	20.2	
Maximum	143.0	
Minimum	74.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P25
Tested by: Cedric Ruhl
Date Tested: 05/14/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	189.0	Elongation
S2	173.0	Elongation
S3	190.0	Elongation
S4	174.0	Elongation
S5	191.0	Elongation
Average	183.4	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	191.0	
Minimum	173.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	136.0	FTB
P1B	137.0	FTB
P2A	122.0	FTB
P2B	125.0	FTB
P3A	137.0	FTB
P3B	135.0	FTB
P4A	125.0	FTB
P4B	125.0	FTB
P5A	144.0	FTB
P5B	141.0	FTB
Average	132.7	*FTB - Film Tear Bond
Standard Deviation	7.4	
Maximum	144.0	
Minimum	122.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Extrusion
Sample: P26
Tested by: Cedric Ruhl
Date Tested: 05/16/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	146.0	Elongation
S2	129.0	Elongation
S3	142.0	Elongation
S4	132.0	Elongation
S5	134.0	Elongation
Average	136.6	*FTB - Film Tear Bond
Standard Deviation	6.4	
Maximum	146.0	
Minimum	129.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	144.0	Elongation
P1B		
P2A	121.0	Elongation
P2B		
P3A	142.0	FTB
P3B		
P4A	128.0	Elongation
P4B		
P5A	140.0	Elongation
P5B		
Average	135.0	*FTB - Film Tear Bond
Standard Deviation	8.9	
Maximum	144.0	
Minimum	121.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Extrusion
Sample: P27
Tested by: Cedric Ruhl
Date Tested: 05/16/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	131.0	Elongation
S2	126.0	Elongation
S3	140.0	Elongation
S4	123.0	Elongation
S5	133.0	Elongation
Average	130.6	*FTB - Film Tear Bond
Standard Deviation	5.9	
Maximum	140.0	
Minimum	123.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	131.0	Elongation
P1B		
P2A	121.0	Elongation
P2B		
P3A	139.0	Elongation
P3B		
P4A	123.0	Elongation
P4B		
P5A	141.0	Elongation
P5B		
Average	131.0	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	141.0	
Minimum	121.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P28
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	178.0	Elongation
S2	161.0	Elongation
S3	181.0	Elongation
S4	166.0	Elongation
S5	141.0	Elongation
Average	165.4	*FTB - Film Tear Bond
Standard Deviation	14.3	
Maximum	181.0	
Minimum	141.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	150.0	FTB
P1B	135.0	FTB
P2A	140.0	FTB
P2B	108.0	FTB
P3A	154.0	FTB
P3B	120.0	FTB
P4A	149.0	FTB
P4B	108.0	FTB
P5A	148.0	FTB
P5B	102.0	FTB
Average	131.4	*FTB - Film Tear Bond
Standard Deviation	19.0	
Maximum	154.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P29
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	179.0	Elongation
S2	164.0	Elongation
S3	179.0	Elongation
S4	166.0	Elongation
S5	164.0	Elongation
Average	170.4	*FTB - Film Tear Bond
Standard Deviation	7.1	
Maximum	179.0	
Minimum	164.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	127.0	FTB
P1B	123.0	FTB
P2A	115.0	FTB
P2B	113.0	FTB
P3A	128.0	FTB
P3B	162.0	FTB
P4A	124.0	FTB
P4B	125.0	FTB
P5A	139.0	FTB
P5B	133.0	FTB
Average	128.9	*FTB - Film Tear Bond
Standard Deviation	13.2	
Maximum	162.0	
Minimum	113.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P30
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	164.0	Elongation
S2	151.0	Elongation
S3	164.0	Elongation
S4	151.0	Elongation
S5	147.0	Elongation
Average	155.4	*FTB - Film Tear Bond
Standard Deviation	7.2	
Maximum	164.0	
Minimum	147.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	154.0	FTB
P1B	139.0	FTB
P2A	116.0	FTB
P2B	134.0	FTB
P3A	148.0	FTB
P3B	141.0	FTB
P4A	120.0	FTB
P4B	130.0	FTB
P5A	147.0	FTB
P5B	132.0	FTB
Average	136.1	*FTB - Film Tear Bond
Standard Deviation	11.6	
Maximum	154.0	
Minimum	116.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P31
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	174.0	Elongation
S2	162.0	Elongation
S3	180.0	Elongation
S4	160.0	Elongation
S5	179.0	Elongation
Average	171.0	*FTB - Film Tear Bond
Standard Deviation	8.4	
Maximum	180.0	
Minimum	160.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	123.0	FTB
P1B	132.0	FTB
P2A	114.0	FTB
P2B	128.0	FTB
P3A	144.0	FTB
P3B	118.0	FTB
P4A	106.0	FTB
P4B	110.0	FTB
P5A	125.0	FTB
P5B	124.0	FTB
Average	122.4	*FTB - Film Tear Bond
Standard Deviation	10.5	
Maximum	144.0	
Minimum	106.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P32
Tested by: James Addis
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	170.0	Elongation
S2	153.0	Elongation
S3	174.0	Elongation
S4	152.0	Elongation
S5	173.0	Elongation
Average	164.4	*FTB - Film Tear Bond
Standard Deviation	9.8	
Maximum	174.0	
Minimum	152.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	149.0	FTB
P1B	122.0	FTB
P2A	122.0	FTB
P2B	102.0	FTB
P3A	134.0	FTB
P3B	128.0	FTB
P4A	114.0	FTB
P4B	116.0	FTB
P5A	123.0	FTB
P5B	129.0	FTB
Average	123.9	*FTB - Film Tear Bond
Standard Deviation	11.9	
Maximum	149.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P33
Tested by: James Addis
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	185.0	Elongation
S2	167.0	Elongation
S3	182.0	Elongation
S4	166.0	Elongation
S5	187.0	Elongation
Average	177.4	*FTB - Film Tear Bond
Standard Deviation	9.0	
Maximum	187.0	
Minimum	166.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	126.0	FTB
P1B	151.0	FTB
P2A	113.0	FTB
P2B	141.0	FTB
P3A	135.0	FTB
P3B	133.0	FTB
P4A	150.0	FTB
P4B	142.0	FTB
P5A	138.0	FTB
P5B	153.0	FTB
Average	138.2	*FTB - Film Tear Bond
Standard Deviation	11.7	
Maximum	153.0	
Minimum	113.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P34
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	167.0	Elongation
S2	156.0	Elongation
S3	171.0	Elongation
S4	152.0	Elongation
S5	169.0	Elongation
Average	163.0	*FTB - Film Tear Bond
Standard Deviation	7.6	
Maximum	171.0	
Minimum	152.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	161.0	FTB
P1B	133.0	FTB
P2A	123.0	FTB
P2B	104.0	FTB
P3A	147.0	FTB
P3B	129.0	FTB
P4A	120.0	FTB
P4B	124.0	FTB
P5A	156.0	FTB
P5B	126.0	FTB
Average	132.3	*FTB - Film Tear Bond
Standard Deviation	16.6	
Maximum	161.0	
Minimum	104.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P35
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	181.0	Elongation
S2	169.0	Elongation
S3	184.0	Elongation
S4	161.0	Elongation
S5	163.0	Elongation
Average	171.6	*FTB - Film Tear Bond
Standard Deviation	9.3	
Maximum	184.0	
Minimum	161.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	139.0	FTB
P1B	124.0	FTB
P2A	125.0	FTB
P2B	110.0	FTB
P3A	154.0	FTB
P3B	130.0	FTB
P4A	126.0	FTB
P4B	109.0	FTB
P5A	140.0	FTB
P5B	123.0	FTB
Average	128.0	*FTB - Film Tear Bond
Standard Deviation	13.0	
Maximum	154.0	
Minimum	109.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P36
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	177.0	Elongation
S2	157.0	Elongation
S3	179.0	Elongation
S4	166.0	Elongation
S5	165.0	Elongation
Average	168.8	*FTB - Film Tear Bond
Standard Deviation	8.2	
Maximum	179.0	
Minimum	157.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	121.0	FTB
P1B	125.0	FTB
P2A	123.0	FTB
P2B	114.0	FTB
P3A	136.0	FTB
P3B	128.0	FTB
P4A	104.0	FTB
P4B	102.0	FTB
P5A	132.0	FTB
P5B	129.0	FTB
Average	121.4	*FTB - Film Tear Bond
Standard Deviation	10.8	
Maximum	136.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P37
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	177.0	Elongation
S2	159.0	Elongation
S3	177.0	Elongation
S4	158.0	Elongation
S5	178.0	Elongation
Average	169.8	*FTB - Film Tear Bond
Standard Deviation	9.2	
Maximum	178.0	
Minimum	158.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	129.0	FTB
P1B	133.0	FTB
P2A	117.0	FTB
P2B	108.0	FTB
P3A	127.0	FTB
P3B	121.0	FTB
P4A	114.0	FTB
P4B	109.0	FTB
P5A	139.0	FTB
P5B	124.0	FTB
Average	122.1	*FTB - Film Tear Bond
Standard Deviation	9.7	
Maximum	139.0	
Minimum	108.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P38
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	174.0	Elongation
S2	154.0	Elongation
S3	180.0	Elongation
S4	157.0	Elongation
S5	165.0	Elongation
Average	166.0	*FTB - Film Tear Bond
Standard Deviation	9.9	
Maximum	180.0	
Minimum	154.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	132.0	FTB
P1B	156.0	FTB
P2A	122.0	FTB
P2B	145.0	FTB
P3A	140.0	FTB
P3B	150.0	FTB
P4A	124.0	FTB
P4B	151.0	FTB
P5A	130.0	FTB
P5B	162.0	FTB
Average	141.2	*FTB - Film Tear Bond
Standard Deviation	13.1	
Maximum	162.0	
Minimum	122.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P39
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	191.0	Elongation
S2	162.0	Elongation
S3	187.0	Elongation
S4	151.0	Elongation
S5	172.0	Elongation
Average	172.6	*FTB - Film Tear Bond
Standard Deviation	15.0	
Maximum	191.0	
Minimum	151.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	124.0	FTB
P1B	123.0	FTB
P2A	107.0	FTB
P2B	129.0	FTB
P3A	122.0	FTB
P3B	132.0	FTB
P4A	115.0	FTB
P4B	121.0	FTB
P5A	127.0	FTB
P5B	128.0	FTB
Average	122.8	*FTB - Film Tear Bond
Standard Deviation	7.0	
Maximum	132.0	
Minimum	107.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P40
Tested by: Cedric Ruhl
Date Tested: 05/15/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	180.0	Elongation
S2	148.0	Elongation
S3	180.0	Elongation
S4	163.0	Elongation
S5	163.0	Elongation
Average	166.8	*FTB - Film Tear Bond
Standard Deviation	12.1	
Maximum	180.0	
Minimum	148.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	137.0	FTB
P1B	144.0	FTB
P2A	128.0	FTB
P2B	119.0	FTB
P3A	131.0	FTB
P3B	144.0	FTB
P4A	114.0	FTB
P4B	115.0	FTB
P5A	109.0	FTB
P5B	126.0	FTB
Average	126.7	*FTB - Film Tear Bond
Standard Deviation	11.8	
Maximum	144.0	
Minimum	109.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Extrusion
Sample: P41
Tested by: Cedric Ruhl
Date Tested: 05/16/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	149.0	Elongation
S2	131.0	Elongation
S3	149.0	Elongation
S4	132.0	Elongation
S5	150.0	Elongation
Average	142.2	*FTB - Film Tear Bond
Standard Deviation	8.7	
Maximum	150.0	
Minimum	131.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	146.0	Elongation
P1B		
P2A	130.0	Elongation
P2B		
P3A	154.0	Elongation
P3B		
P4A	129.0	Elongation
P4B		
P5A	152.0	Elongation
P5B		
Average	142.2	*FTB - Film Tear Bond
Standard Deviation	10.7	
Maximum	154.0	
Minimum	129.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P42
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	211.0	Elongation
S2	178.0	Elongation
S3	199.0	Elongation
S4	182.0	Elongation
S5	169.0	Elongation
Average	187.8	*FTB - Film Tear Bond
Standard Deviation	15.1	
Maximum	211.0	
Minimum	169.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	127.0	FTB
P1B	128.0	FTB
P2A	115.0	FTB
P2B	119.0	FTB
P3A	136.0	FTB
P3B	129.0	FTB
P4A	113.0	FTB
P4B	122.0	FTB
P5A	133.0	FTB
P5B	132.0	FTB
Average	125.4	*FTB - Film Tear Bond
Standard Deviation	7.4	
Maximum	136.0	
Minimum	113.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P43
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	194.0	Elongation
S2	178.0	Elongation
S3	197.0	Elongation
S4	180.0	Elongation
S5	195.0	Elongation
Average	188.8	*FTB - Film Tear Bond
Standard Deviation	8.1	
Maximum	197.0	
Minimum	178.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	127.0	FTB
P1B	134.0	FTB
P2A	117.0	FTB
P2B	144.0	FTB
P3A	129.0	FTB
P3B	126.0	FTB
P4A	112.0	FTB
P4B	134.0	FTB
P5A	130.0	FTB
P5B	160.0	FTB
Average	131.3	*FTB - Film Tear Bond
Standard Deviation	12.8	
Maximum	160.0	
Minimum	112.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P44
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	191.0	Elongation
S2	178.0	Elongation
S3	191.0	Elongation
S4	179.0	Elongation
S5	189.0	Elongation
Average	185.6	*FTB - Film Tear Bond
Standard Deviation	5.9	
Maximum	191.0	
Minimum	178.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	132.0	FTB
P1B	123.0	FTB
P2A	112.0	FTB
P2B	130.0	FTB
P3A	125.0	FTB
P3B	127.0	FTB
P4A	116.0	FTB
P4B	109.0	FTB
P5A	127.0	FTB
P5B	130.0	FTB
Average	123.1	*FTB - Film Tear Bond
Standard Deviation	7.6	
Maximum	132.0	
Minimum	109.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P45
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	188.0	Elongation
S2	169.0	Elongation
S3	187.0	Elongation
S4	172.0	Elongation
S5	173.0	Elongation
Average	177.8	*FTB - Film Tear Bond
Standard Deviation	8.0	
Maximum	188.0	
Minimum	169.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	143.0	FTB
P1B	125.0	FTB
P2A	131.0	FTB
P2B	110.0	FTB
P3A	132.0	FTB
P3B	136.0	FTB
P4A	143.0	FTB
P4B	115.0	FTB
P5A	139.0	FTB
P5B	123.0	FTB
Average	129.7	*FTB - Film Tear Bond
Standard Deviation	10.8	
Maximum	143.0	
Minimum	110.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P46
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	180.0	Elongation
S2	164.0	Elongation
S3	178.0	Elongation
S4	170.0	Elongation
S5	183.0	Elongation
Average	175.0	*FTB - Film Tear Bond
Standard Deviation	7.0	
Maximum	183.0	
Minimum	164.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	135.0	FTB
P1B	126.0	FTB
P2A	108.0	FTB
P2B	113.0	FTB
P3A	128.0	FTB
P3B	123.0	FTB
P4A	95.0	FTB
P4B	101.0	FTB
P5A	123.0	FTB
P5B	121.0	FTB
Average	117.3	*FTB - Film Tear Bond
Standard Deviation	12.0	
Maximum	135.0	
Minimum	95.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P47
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	183.0	Elongation
S2	149.0	Elongation
S3	185.0	Elongation
S4	170.0	Elongation
S5	185.0	Elongation
Average	174.4	*FTB - Film Tear Bond
Standard Deviation	13.9	
Maximum	185.0	
Minimum	149.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	128.0	FTB
P1B	133.0	FTB
P2A	120.0	FTB
P2B	112.0	FTB
P3A	138.0	FTB
P3B	136.0	FTB
P4A	128.0	FTB
P4B	122.0	FTB
P5A	135.0	FTB
P5B	126.0	FTB
Average	127.8	*FTB - Film Tear Bond
Standard Deviation	7.7	
Maximum	138.0	
Minimum	112.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P48
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	185.0	Elongation
S2	173.0	Elongation
S3	189.0	Elongation
S4	173.0	Elongation
S5	187.0	Elongation
Average	181.4	*FTB - Film Tear Bond
Standard Deviation	7.0	
Maximum	189.0	
Minimum	173.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	141.0	FTB
P1B	121.0	FTB
P2A	142.0	FTB
P2B	108.0	FTB
P3A	158.0	FTB
P3B	125.0	FTB
P4A	140.0	FTB
P4B	108.0	FTB
P5A	141.0	FTB
P5B	124.0	FTB
Average	130.8	*FTB - Film Tear Bond
Standard Deviation	15.4	
Maximum	158.0	
Minimum	108.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P49
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	177.0	Elongation
S2	159.0	Elongation
S3	178.0	Elongation
S4	155.0	Elongation
S5	178.0	Elongation
Average	169.4	*FTB - Film Tear Bond
Standard Deviation	10.2	
Maximum	178.0	
Minimum	155.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	122.0	FTB
P1B	146.0	FTB
P2A	115.0	FTB
P2B	128.0	FTB
P3A	132.0	FTB
P3B	134.0	FTB
P4A	120.0	FTB
P4B	116.0	FTB
P5A	130.0	FTB
P5B	130.0	FTB
Average	127.3	*FTB - Film Tear Bond
Standard Deviation	8.9	
Maximum	146.0	
Minimum	115.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P50
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	175.0	Elongation
S2	159.0	Elongation
S3	172.0	Elongation
S4	162.0	Elongation
S5	164.0	Elongation
Average	166.4	*FTB - Film Tear Bond
Standard Deviation	6.1	
Maximum	175.0	
Minimum	159.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	119.0	FTB
P1B	113.0	FTB
P2A	103.0	FTB
P2B	123.0	FTB
P3A	116.0	FTB
P3B	131.0	FTB
P4A	108.0	FTB
P4B	119.0	FTB
P5A	123.0	FTB
P5B	122.0	FTB
Average	117.7	*FTB - Film Tear Bond
Standard Deviation	7.7	
Maximum	131.0	
Minimum	103.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P51
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	163.0	Elongation
S2	150.0	Elongation
S3	164.0	Elongation
S4	151.0	Elongation
S5	148.0	Elongation
Average	155.2	*FTB - Film Tear Bond
Standard Deviation	6.9	
Maximum	164.0	
Minimum	148.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	134.0	FTB
P1B	136.0	FTB
P2A	120.0	FTB
P2B	135.0	FTB
P3A	140.0	FTB
P3B	146.0	FTB
P4A	128.0	FTB
P4B	128.0	FTB
P5A	134.0	FTB
P5B	138.0	FTB
Average	133.9	*FTB - Film Tear Bond
Standard Deviation	6.8	
Maximum	146.0	
Minimum	120.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P52
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	180.0	Elongation
S2	167.0	Elongation
S3	176.0	Elongation
S4	165.0	Elongation
S5	179.0	Elongation
Average	173.4	*FTB - Film Tear Bond
Standard Deviation	6.2	
Maximum	180.0	
Minimum	165.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	115.0	FTB
P1B	142.0	FTB
P2A	102.0	FTB
P2B	128.0	FTB
P3A	114.0	FTB
P3B	131.0	FTB
P4A	104.0	FTB
P4B	118.0	FTB
P5A	113.0	FTB
P5B	137.0	FTB
Average	120.4	*FTB - Film Tear Bond
Standard Deviation	12.8	
Maximum	142.0	
Minimum	102.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P53
Tested by: Cedric Ruhl
Date Tested: 05/18/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	173.0	Elongation
S2	156.0	Elongation
S3	171.0	Elongation
S4	156.0	Elongation
S5	175.0	Elongation
Average	166.2	*FTB - Film Tear Bond
Standard Deviation	8.4	
Maximum	175.0	
Minimum	156.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	150.0	FTB
P1B	119.0	FTB
P2A	133.0	FTB
P2B	104.0	FTB
P3A	142.0	FTB
P3B	115.0	FTB
P4A	117.0	FTB
P4B	110.0	FTB
P5A	146.0	FTB
P5B	115.0	FTB
Average	125.1	*FTB - Film Tear Bond
Standard Deviation	15.4	
Maximum	150.0	
Minimum	104.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Fusion
Sample: P54
Tested by: James Addis
Date Tested: 05/19/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	177.0	Elongation
S2	162.0	Elongation
S3	176.0	Elongation
S4	170.0	Elongation
S5	166.0	Elongation
Average	170.2	*FTB - Film Tear Bond
Standard Deviation	5.7	
Maximum	177.0	
Minimum	162.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	150.0	FTB
P1B	146.0	FTB
P2A	120.0	FTB
P2B	125.0	FTB
P3A	139.0	FTB
P3B	157.0	FTB
P4A	120.0	FTB
P4B	125.0	FTB
P5A	143.0	FTB
P5B	151.0	FTB
Average	137.6	*FTB - Film Tear Bond
Standard Deviation	13.2	
Maximum	157.0	
Minimum	120.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

S&ME, Inc. - CHARLOTTE, NC
Seam Destructive Test Result Summary

Project Name: Allen RAB Ash Landfill: Cell 1, Primary Geomembrane
S&ME Project No.: 1356-06-825
Material Description: 60-mil Textured HDPE Liner
Weld Type: Extrusion
Sample: P55
Tested by: James Addis
Date Tested: 05/19/2009 Date of Summary: 05/22/2009

SHEAR TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
S1	188.0	Elongation
S2	195.0	Elongation
S3	192.0	Elongation
S4	190.0	Elongation
S5	185.0	Elongation
Average	190.0	*FTB - Film Tear Bond
Standard Deviation	3.4	
Maximum	195.0	
Minimum	185.0	
Pass/Fail [1,2,3]	PASS	

PEEL TESTING (ASTM D-6392)		
Specimen No.	Load at Yield (lbs/in)	Failure Description
P1A	152.0	Elongation
P1B		
P2A	144.0	Elongation
P2B		
P3A	149.0	Elongation
P3B		
P4A	150.0	Elongation
P4B		
P5A	145.0	Elongation
P5B		
Average	148.0	*FTB - Film Tear Bond
Standard Deviation	3.0	
Maximum	152.0	
Minimum	144.0	
Pass/Fail [1,2,3]	PASS	

[1] Fusion Weld Passing Values: Shear - 120 lb/in; Peel - 91 lb/in
[2] Extrusion Weld Passing Values: Shear - 120 lb/in; Peel - 78 lb/in
[3] Values are for 4 out of 5 specimens; 5th specimen can be 80% of listed value

Primary HDPE Geomembrane
Geomembrane Defect Log

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 1 of 12

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P1	3/6	SWEOS	T	05-12-2009		05-12-2009	CR
P2	2/3	SEOS	T	05-12-2009		05-12-2009	CR
P3	2/5	SWEOS	T	05-12-2009		05-12-2009	CR
P4	1/4	SWEOS	T	05-12-2009		05-12-2009	CR
P5	4/7	WEOS	T	05-12-2009		05-12-2009	CR
P6	7/8	WEOS	T	05-12-2009		05-12-2009	CR
P7	8/9	WEOS	T	05-12-2009		05-12-2009	CR
P8	9/32	10' S OF R7	O	05-12-2009		05-12-2009	CR
P9	9/10	WEOS	T	05-12-2009		05-12-2009	CR
P10	10/11	WEOS	T	05-12-2009		05-12-2009	CR
P11	11/12	WEOS	T	05-12-2009		05-12-2009	CR
P12	12/32	10' S OF R11	LDT	05-12-2009	LDT-P11	05-12-2009	CR
P13	12/32	12' S OF R11	O	05-12-2009		05-12-2009	CR
P14	12/13	WEOS	T	05-12-2009		05-12-2009	CR
P15	13/14	WEOS	T	05-12-2009		05-12-2009	CR
P16	14/15	WEOS	T	05-12-2009		05-12-2009	CR
P17	15/16	WEOS	T	05-12-2009		05-12-2009	CR
P18	16/17	WEOS	T	05-12-2009		05-12-2009	CR
P19	17/32	8' S OF R18	O	05-12-2009		05-12-2009	CR
P20	17/18	WEOS	T	05-12-2009		05-12-2009	CR
P21	18/19	WEOS	T	05-12-2009		05-12-2009	CR
P22	19/20	WEOS	T	05-12-2009		05-12-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 2 of 12

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P23	20/21	WEOS	T	05-12-2009		05-12-2009	CR
P24	22/23	8' FROM TI	LDT	05-12-2009	LDT-P3	05-12-2009	CR
P25	23/24	2' FROM TI	LDT	05-12-2009	LDT-P1	05-12-2009	CR
P26	24/25	14' E OF TI	LDT	05-12-2009	LDT-P2	05-12-2009	CR
P27	25/26	22' E OF R162	O	05-12-2009		05-12-2009	CR
P28	25/26	22' E OF R162	O	05-12-2009		05-12-2009	CR
P29	32/33	298' S OF EOS	T	05-12-2009		05-12-2009	CR
P30	33/34	5' S OF EOS	LDT	05-12-2009	LDT-P6	05-12-2009	CR
P31	34/35	198' N OF EOS	LDT	05-12-2009	LDT-P4	05-12-2009	CR
P32	35/36	90' N OF EOS	LDT	05-12-2009	LDT-P5	05-12-2009	CR
P33	36/37	238' N OF EOS	O	05-12-2009		05-12-2009	CR
P34	37/38	284' S OF EOS	LDT	05-12-2009	LDT-P7	05-12-2009	CR
P35	38/39	251' N OF EOS	LDT	05-12-2009	LDT-P15	05-12-2009	CR
P36	39/40	100' S OF EOS	LDT	05-12-2009	LDT-P12	05-12-2009	CR
P37	40/41	191' S OF EOS	LDT	05-12-2009	LDT-PS8	05-12-2009	CR
P38	41/42	66' S OF EOS	LDT	05-12-2009	LDT-P16	05-12-2009	CR
P39	42/43	20' S OF EOS	LDT	05-12-2009	LDT-P13	05-12-2009	CR
P40	43/44	97' S OF EOS	LDT	05-12-2009	LDT-PS9	05-12-2009	CR
P41	43/44	271' S OF EOS	T	05-12-2009		05-12-2009	CR
P42	46/47	27' S OF EOS	LDT	05-12-2009	LDT-P10	05-12-2009	CR
P43	48/49	29' S OF EOS	LDT	05-12-2009	LDT-P17	05-12-2009	CR
P44	49/50	295' S OF EOS	O	05-12-2009		05-12-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 3 of 12

Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P45	49/50	306' S OF EOS	O	05-12-2009		05-12-2009	CR
P46	49/50	25' N OF EOS	LDT	05-12-2009	LDT-P14	05-12-2009	CR
P47	50/51	231' N OF EOS	LDT	05-12-2009	LDT-P18	05-12-2009	CR
P48	51/52	116' S OF EOS	LDT	05-12-2009	LDT-P23	05-12-2009	CR
P49	52/53	106' N OF EOS	O	05-12-2009		05-12-2009	CR
P50	53/54	73' N OF EOS	O	05-12-2009		05-12-2009	CR
P51	53/54	135' N OF EOS	LDT	05-12-2009	LDT-P19	05-12-2009	CR
P52	54/55	102' N OF EOS	O	05-12-2009		05-12-2009	CR
P53	54/55	200' N OF EOS	LDT	05-12-2009	LDT-P24	05-12-2009	CR
P54	55/56	71' S OF EOS	LDT	05-12-2009	LDT-P21	05-12-2009	CR
P55	56/57	260' S OF EOS	LDT	05-12-2009	LDT-P20	05-12-2009	CR
P56	57/58	310' S OF EOS	LDT	05-12-2009	LDT-P25	05-12-2009	CR
P57	59/60	SEOS	T	05-12-2009		05-12-2009	CR
P58	59/61	EEOS	T	05-12-2009		05-12-2009	CR
P59	61/62	EEOS	T	05-12-2009		05-12-2009	CR
P60	62/63	EEOS	T	05-12-2009		05-12-2009	CR
P61	63/64	EEOS	T	05-12-2009		05-12-2009	CR
P62	64/65	EEOS	T	05-12-2009		05-12-2009	CR
P63	65/66	EEOS	T	05-12-2009		05-12-2009	CR
P64	66/67	EEOS	T	05-12-2009		05-12-2009	CR
P65	67/68	EEOS	T	05-12-2009		05-12-2009	CR
P66	68/69	EEOS	T	05-12-2009		05-12-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P67	69/70	EEOS	T	05-12-2009		05-12-2009	CR
P68	70/71	EEOS	T	05-12-2009		05-12-2009	CR
P69	71/72	EEOS	T	05-12-2009		05-12-2009	CR
P70	71/72	5' W OF R69	LDT	05-12-2009	LDT-P22	05-12-2009	CR
P71	117/119	NEOS	T	05-12-2009		05-12-2009	CR
P72	48/49	SEOS	T	05-12-2009		05-12-2009	CR
P73	115/117	NEOS	T	05-12-2009		05-12-2009	CR
P74	49/50	SEOS	T	05-12-2009		05-12-2009	CR
P75	113/115	NEOS	T	05-12-2009		05-12-2009	CR
P76	50/51	SEOS	O	05-12-2009		05-12-2009	CR
P77	111/113	NEOS	T	05-12-2009		05-12-2009	CR
P78	51/52	SEOS	T	05-12-2009		05-12-2009	CR
P79	109/111	NEOS	T	05-12-2009		05-12-2009	CR
P80	52/53	SEOS	T	05-12-2009		05-12-2009	CR
P81	107/109	NEOS	T	05-12-2009		05-12-2009	CR
P82	53/54	SEOS	T	05-12-2009		05-12-2009	CR
P83	105/107	NEOS	T	05-12-2009		05-12-2009	CR
P84	54/55	SEOS	T	05-12-2009		05-12-2009	CR
P85	101/105	NEOS	T	05-12-2009		05-12-2009	CR
P86	55/56	SEOS	T	05-12-2009		05-12-2009	CR
P87	100/101	NEOS	T	05-12-2009		05-12-2009	CR
P88	56/57	SEOS	T	05-12-2009		05-12-2009	CR

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Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P89	99/100	NEOS	T	05-14-2009		05-14-2009	CR
P90	57/58	SEOS	T	05-14-2009		05-14-2009	CR
P91	57/100	P100 NEAR TI	O	05-14-2009		05-14-2009	CR
P92	57/100	P100 NEAR TI	O	05-14-2009		05-14-2009	CR
P93	57/100	P100 NEAR TI	O	05-14-2009		05-14-2009	CR
P94	57/100	P100 NEAR TI	O	05-14-2009		05-14-2009	CR
P95	58/76/99	JCT OF 58/76/99	O	05-14-2009		05-14-2009	CR
P96	76/77	EEOS	T	05-14-2009		05-14-2009	CR
P97	77/78	EEOS	T	05-14-2009		05-14-2009	CR
P98	78/79	EEOS	T	05-14-2009		05-14-2009	CR
P99	79/80	EEOS	T	05-14-2009		05-14-2009	CR
P100	80/81	EEOS	T	05-14-2009		05-14-2009	CR
P101	81/82	EEOS	T	05-14-2009		05-14-2009	CR
P102	82/99	11' S OF R101	O	05-14-2009		05-14-2009	CR
P103	82/83	EEOS	T	05-14-2009		05-14-2009	CR
P104	82/83	30' W OF R103	LDT	05-14-2009	LDT-P29	05-14-2009	CR
P105	83/84	EEOS	T	05-14-2009		05-14-2009	CR
P106	83/84	20' W OF R105	LDT	05-14-2009	LDT-P28	05-14-2009	CR
P107	84/85	EEOS	T	05-14-2009		05-14-2009	CR
P108	85/86	EEOS	T	05-14-2009		05-14-2009	CR
P109	86/87	EEOS	T	05-14-2009		05-14-2009	CR
P110	87/88	EEOS	T	05-14-2009		05-14-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P111	88/89	EEOS	T	05-14-2009		05-14-2009	CR
P112	89/90	EEOS	T	05-14-2009		05-14-2009	CR
P113	90/97	EEOS	T	05-14-2009		05-14-2009	CR
P114	90/97	30' W OF R113	LDT	05-14-2009	LDT-P33	05-14-2009	CR
P115	87/99	2' N OF R110	LDT	05-14-2009	LDT-P34	05-14-2009	CR
P116	100/101	80' S OF TI	LDT	05-14-2009	LDT-P37	05-14-2009	CR
P117	105/107	120' S OF TI	LDT	05-14-2009	LDT-P38	05-14-2009	CR
P118	107/109	150' S OF TI	LDT	05-14-2009	LDT-P35	05-14-2009	CR
P119	109/111	40' S OF TI	LDT	05-14-2009	LDT-P31	05-14-2009	CR
P120	111/113	169' S OF TI	LDT	05-14-2009	LDT-P39	05-14-2009	CR
P121	113/115	100' N OF TI	LDT	05-14-2009	LDT-P36	05-14-2009	CR
P122	115/117	140' S OF TI	LDT	05-14-2009	LDT-P32	05-14-2009	CR
P123	117/119	80' N OF AT	LDT	05-14-2009	LDT-P40	05-14-2009	CR
P124	117/118	EEOS	O	05-14-2009		05-14-2009	CR
P125	119/120	EEOS	O	05-14-2009		05-14-2009	CR
P126	120/121	12' N OF AT	O	05-14-2009		05-14-2009	CR
P127	121/150	20' N OF AT	O	05-14-2009		05-14-2009	CR
P128	117/118	WEOS	T	05-14-2009		05-14-2009	CR
P129	115/116	EEOS	O	05-14-2009		05-14-2009	CR
P130	115/116	CENTER 115/116	O	05-14-2009		05-14-2009	CR
P131	115/116	WEOS	T	05-14-2009		05-14-2009	CR
P132	113/114	EEOS	T	05-14-2009		05-14-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P133	114/116	40' N OF AT	O	05-14-2009		05-14-2009	CR
P134	113/114	WEOS	T	05-14-2009		05-14-2009	CR
P135	111/112	EEOS	T	05-14-2009		05-14-2009	CR
P136	111/112	WEOS	T	05-14-2009		05-14-2009	CR
P137	109/110	EEOS	T	05-14-2009		05-14-2009	CR
P138	107/108	EEOS	T	05-14-2009		05-14-2009	CR
P139	109/110	WEOS	T	05-14-2009		05-14-2009	CR
P140	105/106	EEOS	T	05-14-2009		05-14-2009	CR
P141	107/108	WEOS	T	05-14-2009		05-14-2009	CR
P142	105/106	WEOS	T	05-14-2009		05-14-2009	CR
P143	99/100	200' N OF AT	O	05-14-2009		05-14-2009	CR
P144	97/102	EEOS	T	05-14-2009		05-14-2009	CR
P145	102/103	NEOS	T	05-14-2009		05-14-2009	CR
P146	98/103	NEOS	T	05-14-2009		05-14-2009	CR
P147	97/102	BETWEEN R144 & R145	LDT	05-14-2009	LDT-P30	05-14-2009	CR
P148	97/102	BOT OF P102	O	05-14-2009		05-14-2009	CR
P149	97/102	BOT OF P102	O	05-14-2009		05-14-2009	CR
P150	98/104	NEOS	T	05-14-2009		05-14-2009	CR
P151	95/96	WEOS	T	05-14-2009		05-14-2009	CR
P152	95/94	WEOS	T	05-14-2009		05-14-2009	CR
P153	122/123	BETWEEN R154 & R171	O	05-14-2009		05-14-2009	CR
P154	92/93	WEOS	T	05-14-2009		05-14-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P155	91/92	WEOS	T	05-14-2009		05-14-2009	CR
P156	31/91	WEOS	T	05-14-2009		05-14-2009	CR
P157	30/31	WEOS	T	05-14-2009		05-14-2009	CR
P158	29/30	WEOS	T	05-14-2009		05-14-2009	CR
P159	28/29	WEOS	T	05-14-2009		05-14-2009	CR
P160	27/28	WEOS	T	05-14-2009		05-14-2009	CR
P161	26/27	WEOS	T	05-14-2009		05-14-2009	CR
P162	25/26	WEOS	T	05-14-2009		05-14-2009	CR
P163	24/25	WEOS	T	05-14-2009		05-14-2009	CR
P164	23/24	WEOS	T	05-14-2009		05-14-2009	CR
P165	22/23	WEOS	T	05-14-2009		05-14-2009	CR
P166	21/22	WEOS	O	05-14-2009		05-14-2009	CR
P167	122/124	NEOS	T	05-14-2009		05-14-2009	CR
P168	32/33	SEOS	T	05-14-2009		05-14-2009	CR
P169	122/124	110' S OF TI	LDT	05-14-2009	LDT-P47	05-14-2009	CR
P170	122/124	130' N OF AT	O	05-14-2009		05-14-2009	CR
P171	122/123	WEOS	T	05-14-2009		05-14-2009	CR
P172	124/125	120' S OF TI	LDT	05-14-2009	LDT-P42	05-14-2009	CR
P173	124/125	NEOS	T	05-14-2009		05-14-2009	CR
P174	33/34	SEOS	T	05-14-2009		05-14-2009	CR
P175	125/126	NEOS	O	05-14-2009		05-14-2009	CR
P176	34/35	SEOS	O	05-14-2009		05-14-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
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Project Location: Belmont, North Carolina
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P177	126/127	EEOS	T	05-14-2009		05-14-2009	CR
P178	128/129	EEOS	T	05-14-2009		05-14-2009	CR
P179	126/127	WEOS	T	05-14-2009		05-14-2009	CR
P180	126/128	NEOS	T	05-14-2009		05-14-2009	CR
P181	35/36	SEOS	T	05-14-2009		05-14-2009	CR
P182	128/130	NEOS	T	05-14-2009		05-14-2009	CR
P183	36/37	SEOS	T	05-14-2009		05-14-2009	CR
P184	128/129	WEOS	T	05-14-2009		05-14-2009	CR
P185	130/131	EEOS	T	05-14-2009		05-14-2009	CR
P186	130/131	7' W OF R185	LDT	05-14-2009	LDT-P51	05-14-2009	CR
P187	129/131	35' N OF AT	LDT	05-14-2009	LDT-P43	05-14-2009	CR
P188	131/133	60' N OF AT	LDT	05-14-2009	LDT-P48	05-14-2009	CR
P189	132/133	EEOS	T	05-14-2009		05-14-2009	CR
P190	130/131	WEOS	T	05-14-2009		05-14-2009	CR
P191	130/132	SEOS	T	05-14-2009		05-14-2009	CR
P192	37/38	SEOS	T	05-14-2009		05-14-2009	CR
P193	132/134	NEOS	T	05-14-2009		05-14-2009	CR
P194	38/39	SEOS	T	05-14-2009		05-14-2009	CR
P195	132/133	WEOS	T	05-14-2009		05-14-2009	CR
P196	134/135	EEOS	T	05-14-2009		05-14-2009	CR
P197	136/137	EEOS	T	05-14-2009		05-14-2009	CR
P198	134/135	WEOS	T	05-14-2009		05-14-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P199	134/136	200' S OF TI	LDT	05-14-2009	LDT-P44	05-14-2009	CR
P200	134/136	NEOS	T	05-19-2009		05-19-2009	CR
P201	39/40	SEOS	T	05-19-2009		05-19-2009	CR
P202	136/138	NEOS	T	05-19-2009		05-19-2009	CR
P203	40/41	SEOS	T	05-19-2009		05-19-2009	CR
P204	136/138	150' S OF TI		05-19-2009	LDT-P49	05-19-2009	CR
P205	136/137	WEOS	T	05-19-2009		05-19-2009	CR
P206	138/139	EEOS	T	05-19-2009		05-19-2009	CR
P207	138/139	WEOS	T	05-19-2009		05-19-2009	CR
P208	138/140	80' N OF AT	LDT	05-19-2009	LDT-P52	05-19-2009	CR
P209	138/140	NEOS	T	05-19-2009		05-19-2009	CR
P210	41/42	SEOS	T	05-19-2009		05-19-2009	CR
P211	140/141	NEOS	T	05-19-2009		05-19-2009	CR
P212	42/43	SEOS	T	05-19-2009		05-19-2009	CR
P213	141/142	SEOS	T	05-19-2009		05-19-2009	CR
P214	140/142	50' S OF TI	LDT	05-19-2009	LDT-P45	05-19-2009	CR
P215	142/144	150' N OF AT	LDT	05-19-2009	LDT-P53	05-19-2009	CR
P216	143/144	EEOS	FDT	05-19-2009		05-19-2009	CR
P217	141/142	WEOS	T	05-19-2009		05-19-2009	CR
P218	141/143	NEOS	O	05-19-2009		05-19-2009	CR
P219	43/44	SEOS	O	05-19-2009		05-19-2009	CR
P220	143/145	NEOS	T	05-19-2009		05-19-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P221	44/45	SEOS	T	05-19-2009		05-19-2009	CR
P222	143/144	WEOS	T	05-19-2009		05-19-2009	CR
P223	144	2' FROM BS	O	05-19-2009		05-19-2009	CR
P224	145/146	EEOS	T	05-19-2009		05-19-2009	CR
P225	146	20' N OF AT	T	05-19-2009		05-19-2009	CR
P226	146	21' N OF AT	O	05-19-2009		05-19-2009	CR
P227	146/148	200' N OF AT	LDT	05-19-2009		05-19-2009	CR
P228	147/148	EEOS	T	05-19-2009		05-19-2009	CR
P229	145/146	WEOS	T	05-19-2009		05-19-2009	CR
P230	145/147	NEOS	T	05-19-2009		05-19-2009	CR
P231	45/46	SEOS	T	05-19-2009		05-19-2009	CR
P232	147/149	NEOS	T	05-19-2009		05-19-2009	CR
P233	46/47	SEOS	T	05-19-2009		05-19-2009	CR
P234	147/148	WEOS	T	05-19-2009		05-19-2009	CR
P235	148/149	7' S OF R234	LDT	05-19-2009	LDT-P46	05-19-2009	CR
P236	149/150	EEOS	O	05-19-2009		05-19-2009	CR
P237	148/150	10' S OF R236	T	05-19-2009		05-19-2009	CR
P238	117/119	SEOS	T	05-14-2009		05-14-2009	CR
P239	48/49	SEOS	T	05-14-2009		05-14-2009	CR
P240	115/117	NEOS	T	05-14-2009		05-14-2009	CR
P241	49/50	SEOS	T	05-14-2009		05-14-2009	CR
P242	47/48	SEOS	O	05-14-2009		05-14-2009	CR

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

GEOMEMBRANE DEFECT LOG

S&ME Project No.: 1356-06-825
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Defect Code	Defect Seam or Panel	Location of Defect	Defect Type	Log Date	Remarks	Repair Date	CQA Initial
P243	34/125	ON TI	LDT	05-19-2009	LDT-P54	05-19-2009	CR
P244	29/30	8' FROM EOS	O	05-14-2009		05-14-2009	CR
P245	121		O	05-14-2009		05-14-2009	CR
P246		CENTER OF SUMP	O	05-14-2009		05-14-2009	CR
P247		BOOT FOR CELL 1B RISERS	O	05-26-2009		05-26-2009	CR
P248		BOOT FOR CELL 1A RISERS	O	05-26-2009		05-26-2009	CR
P249	9	10' E OF 9/19	O	07-02-2009	AIR POCKET	07-07-2009	JA

Location: **NEOS** - north end of seam, **SEOS** - south end of seam, **EEOS** - east end of seam, **WEOS** - west end of seam, **R** - repair number, **AT** - anchor trench, **TI** - tie-in

Defect Type: **LDT** - Laboratory Destructive Testing, **FDT -** Field Destructive Testing**, T -** T weld, **O -** Other

CQA Personnel : Cedric Ruhl

Primary HDPE Geomembrane
Geomembrane Repair Testing Log

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P1	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P2	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P3	G&W	2'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P4	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P5	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P6	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P7	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P8	P	2'	IB	CR	05-12-2009	VB	IB	CR	P	05-12-2009	
P9	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P10	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P11	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P12	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P11
P13	P	2'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P14	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P15	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P16	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P17	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P18	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P19	P	2' X 3'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P20	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P21	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P22	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P23	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P24	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P3
P25	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P1
P26	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P2
P27	P	2'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P28	P	2'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P29	G&W	8"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P30	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P6
P31	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P4
P32	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P5
P33	P	2.5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P34	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P7
P35	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P15
P36	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P12
P37	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-PS8
P38	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P16
P39	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P13
P40	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-PS9
P41	G&W	10"	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P42	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P10
P43	P	2' X 5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P17
P44	P	2'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P45	P	2.5'	IB	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P46	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P14
P47	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P18
P48	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P23
P49	P	2'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P50	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P51	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P19
P52	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P53	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P24
P54	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P21
P55	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P20
P56	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P25
P57	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P58	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P59	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P60	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P61	G&W	6"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P62	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P63	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P64	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P65	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P66	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P67	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P68	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P69	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P70	P	2' X 5'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	LDT-P22
P71	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P72	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P73	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P74	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P75	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P76	P	2'	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P77	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P78	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P79	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P80	G&W	6"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P81	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P82	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P83	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P84	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P85	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P86	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P87	G&W	8"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	
P88	G&W	10"	RC	CR	05-12-2009	VB	JC	CR	P	05-12-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P89	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P90	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P91	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P92	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P93	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P94	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P95	P	4' X 4'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P96	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P97	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P98	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P99	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P100	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P101	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P102	P	2' X 2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P103	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P104	P	2' X 5'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P29
P105	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P106	P	2' X 5'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P28
P107	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P108	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P109	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P110	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P111	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P112	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P113	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P114	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P33
P115	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P34
P116	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P37
P117	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P38
P118	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P35
P119	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P31
P120	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P39
P121	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P36
P122	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P32
P123	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P40
P124	P	2' X 3'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P125	P	2' X 6'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P126	P	2'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P127	P	2' X 3'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P128	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P129	P	2' X 2'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P130	P	2' X 2'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P131	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P132	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P133	P	2'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P134	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P135	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P136	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P137	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P138	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P139	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P140	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P141	G&W	12"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P142	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P143	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P144	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P145	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P146	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P147	P	2' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P30
P148	P	1'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P149	P	1'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P150	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P151	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P152	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P153	P	1'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P154	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

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Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P155	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P156	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P157	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P158	G&W	6"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P159	G&W	6"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P160	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P161	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P162	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P163	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P164	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P165	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P166	P	6'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P167	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P168	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P169	P	3' X 5'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P47
P170	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P171	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P172	P	3' X 5'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P42
P173	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P174	G&W	10"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P175	P	2' X 3'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P176	P	2' X 3'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

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P177	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P178	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P179	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P180	G&W	6"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P181	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P182	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P183	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P184	G&W	6"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P185	G&W	6"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P186	P	3' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P51
P187	P	3' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P43
P188	P	3' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	LDT-P48
P189	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P190	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P191	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P192	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P193	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P194	G&W	8"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P195	G&W	6"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P196	G&W	6"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P197	G&W	6"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P198	G&W	10"	RC	CR	05-14-2009	VB	JC	CR	P	05-14-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 10 of 12

Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P199	P	3' X 5'	RC	CR	05-14-2009	VB	JC	CR	P	05-19-2009	LDT-P44
P200	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P201	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P202	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P203	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P204	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	LDT-P49
P205	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P206	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P207	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P208	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	LDT-P52
P209	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P210	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P211	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P212	G&W	6"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P213	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P214	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	LDT-P45
P215	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	LDT-P53
P216	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P217	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P218	P	2' X 6'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P219	P	2' X 6'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P220	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 11 of 12

Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P221	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P222	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P223	P	2'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P224	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P225	G&W	6"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P226	P	2.5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P227	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P228	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P229	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P230	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P231	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P232	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P233	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P234	G&W	8"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P235	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	LDT-P46
P236	P	2'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P237	G&W	10"	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	
P238	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P239	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P240	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P241	G&W	8"	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P242	P	3' X 6'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

GEOMEMBRANE REPAIR TESTING LOG

S&ME Project No.: 1356-06-825
Project Name: Allen RAB Ash Landfill: Cell 1, Primary GM
Project Location: Belmont, North Carolina
Page: 12 of 12

Defect Code	Repair Type	Approximate Dimensions	Tech. Initials	CQA Initials	Date	Test Type	Tech. Initials	CQA Initials	Pass / Fail	Date	Remarks
P243	P	3' X 5'	RC	CR	05-19-2009	VB	JC	CR	P	05-19-2009	LDT-P54
P244	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P245	P	2'X6'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P246	P	2'	IB	CR	05-14-2009	VB	JC	CR	P	05-14-2009	
P247	P	8'X7'	IB	CR	05-26-2009	VB	IB	CR	P	05-26-2009	SPARK TEST AT BOOT/RISER EX WELD PASSED
P248	P	8'X6'	IB	CR	05-26-2009	VB	IB	CR	P	05-26-2009	SPARK TEST AT BOOT/RISER EX WELD PASSED
P249	P	5'X3'	IB	JA	07-07-2009	VB	IB	JA	P	07-07-2009	AIR POCKET

Repair Type: **G&W** - Grind and Weld, **P**- Patch, **CAP** - Cap Strip

Testing Type: **SP** - Spark Test, **VB** - Vacuum Box Test

CQA Personnel: Cedric Ruhl

HDPE Geomembrane
Contractor's Roll Reference List

PLASTIC FUSION FABRICATORS, INC.

GEOSYNTHETIC INVENTORY CONTROL RECORD

MATERIAL DELIVERED TO SITE

MATERIAL TYPE: _____

ROLL NUMBER	CROSS REF. NO.	ROLL DIMENSIONS			REMARKS
		LENGTH (FT)	WIDTH (FT)	THICK (MIL)	
249105	1				
246701	2				
246700	3				
247117	4				
246799	5				
247719	6				
246798	7				
247342	8				
247112	9				
247221	10				
247340	11				
247343	12				
247225	13				
247569	14				
246794	15				
247225	16				
247577	17				
247220	18				
247467	19				
246702	20				
247236	21				
246703	22				
247465	23				
247234	24				
247461	25				
247102	26				
247350	27				
247339	28				
247224	29				
247568	30				

PLASTIC FUSION FABRICATORS, INC.

GEOSYNTHETIC INVENTORY CONTROL RECORD

MATERIAL DELIVERED TO SITE

MATERIAL TYPE: _____

ROLL NUMBER	CROSS REF. NO.	ROLL DIMENSIONS			REMARKS
		LENGTH (FT)	WIDTH (FT)	THICK (MIL)	
247464	31				
247231	32				
247341	33				
246709	34				
247463	35				
247462	36				
246711	37				
247466	38				
247111	39				
246708	40				
247101	41				
247109	42				
247458	43				
247219	44				
246710	45				
247113	46				
246712	47				
246705	48				
247108	49				
246707	50				
246711 6	51				
247118	52				
246706	53				
247115	54				
247578	55				
247114	56				
247107	57				
247349	58				
247226	59				
246797	60				

PLASTIC FUSION FABRICATORS, INC.

GEOSYNTHETIC INVENTORY CONTROL RECORD

MATERIAL DELIVERED TO SITE

MATERIAL TYPE: _____

ROLL NUMBER	CROSS REF. NO.	ROLL DIMENSIONS			REMARKS
		LENGTH (FT)	WIDTH (FT)	THICK (MIL)	
246793	61				
247110	62				
247575	63				
240795	64				
240796	65				
247355	66				
247580	67				
247232	68				
247346	69				
247 576	70				
247 345	71				
247 238	72				
247 574	73				
247 237	74				
247 353	75				
247 229	76				
247 456	77				
247 572	78				
247 460	79				
247 222	80				
247 573	81				
247 704	82				
247 459	83				
247 344	84				
247 457	85				
247 579	86				
247 570	87				
247 235	88				
247 104	89				
247 571	90				

PLASTIC FUSION FABRICATORS, INC.

GEOSYNTHETIC INVENTORY CONTROL RECORD

MATERIAL DELIVERED TO SITE

MATERIAL TYPE: _____

ROLL NUMBER	CROSS REF. NO.	ROLL DIMENSIONS			REMARKS
		LENGTH (FT)	WIDTH (FT)	THICK (MIL)	
247106	91				
247108	92				
247352	93				
247713	94				
247223	95				
247227	96				
248228	97				
248113	98				
247230	99				
247716	100				
247718	101				
248219	102				
248112	103				
248101	104				
247715	105				
248220	106				
248109	107				
247714	108				
248221	109				
247722	110				
248104	111				
247721	112				
248107	113				
247717	114				
247354	115				
247720	116				
248103	117				
247348	118				
247103	119				
248114	120				

PLASTIC FUSION FABRICATORS, INC.

GEOSYNTHETIC INVENTORY CONTROL RECORD

MATERIAL DELIVERED TO SITE

MATERIAL TYPE: _____

ROLL NUMBER	CROSS REF. NO.	ROLL DIMENSIONS			REMARKS
		LENGTH (FT)	WIDTH (FT)	THICK (MIL)	
248110	121				
248117	122				
248105	123				
248111	124				
248218	125				
248116	126				
248106	127				
248115	128				
247351	129				
248223	130				
248222	131				
247347	132				

Tensiometer Load Cells Calibrations

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

Customer Name: **S & ME Inc.**

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell

Range: 0 - 750 lbs. Tension

Model No: M2405-750#

Serial No: **209948**

Calibration Apparatus:

Reference load cell (S/N 204781)

A/D Module Model No: T-029

A/D Module Serial No: **4205209948**

Channel No: N/A

Dead Weight:		Reference Cell:	
W1	2	R1	2
W2	152	R2	152
W3	302	R3	302

Indicator reading with no load: 0

Offset: **6.866882** Scale: **3.872254**

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: Matt Roy

Date: 04/08/09

Matthew B

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

Customer Name: **S & ME Inc.**

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell

Range: 0 - 750 lbs. Tension

Model No: M2405-750#

Serial No: **206371**

Calibration Apparatus:

Reference load cell (S/N 204781)

A/D Module Model No: T-029

A/D Module Serial No: **4205206371**

Channel No: N/A

Dead Weight:		Reference Cell:	
W1	2	R1	2
W2	152	R2	152
W3	302	R3	302

Indicator reading with no load: 0

Offset: **6.030090** Scale: **5.010223**

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: Matt Roy

Date: 04/08/09

APPENDIX III – ANCILLARY FACILITIES

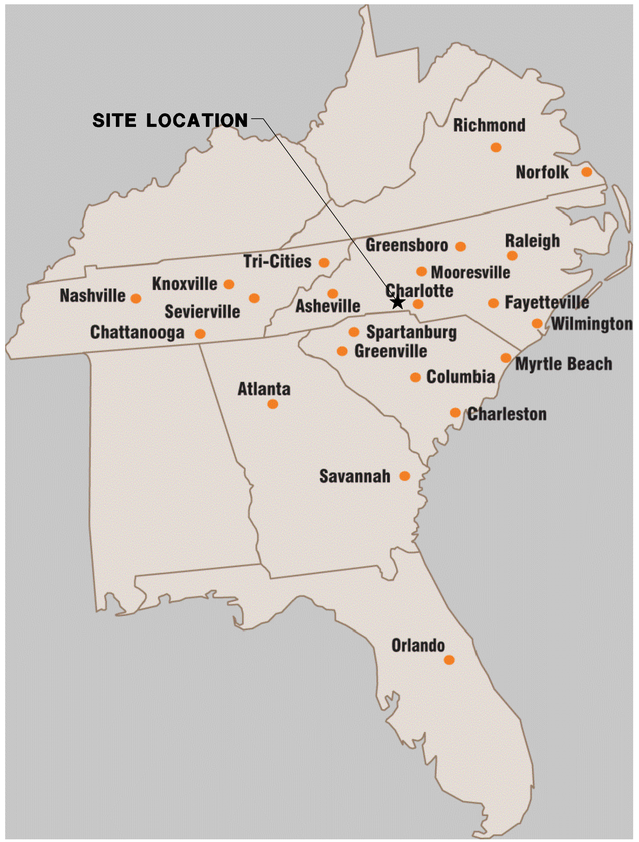
Electrical-Mechanical Drawing Set
Field Density Test Results
Field Density Reference Curves
Asphalt Density Test Results
Concrete Test Reports
Pump Submittal

Electrical-Mechanical Drawing Set

ELECTRICAL/MECHANICAL COMPONENTS
PHASE I RETIRED ASH BASIN (RAB) - ASH LANDFILL

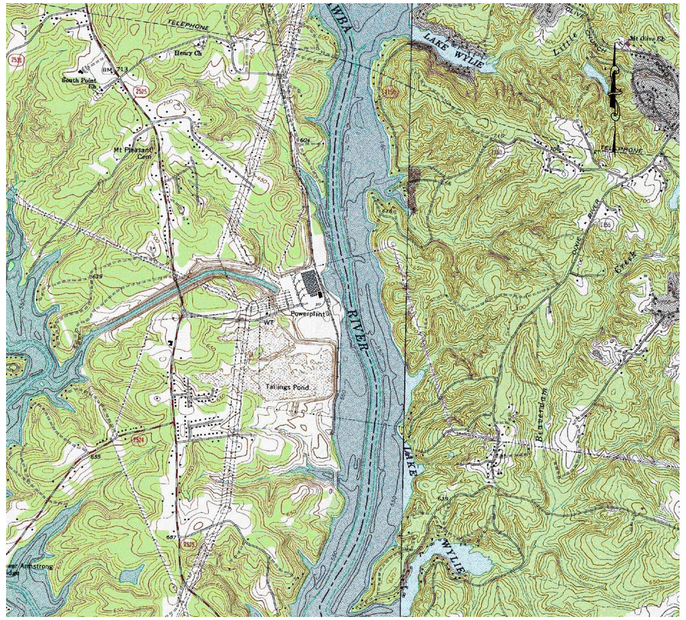
ISSUED FOR CONSTRUCTION

DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA
FEBRUARY 2009



LOCATION / S&ME OFFICE MAP

NOT TO SCALE



SITE VICINITY MAP

NOT TO SCALE

INDEX OF DRAWINGS

DRAWING	TITLE
C1	SITE AERIAL PHOTOGRAPH
C2	SITE TOPOGRAPHIC MAP AND PROPOSED FACILITY PLAN
C3	SITE CONDUIT AND WATER LINE PLAN
C4	CELL 1 PROTECTIVE COVER GRADING PLAN
C5	CELL 2 PROTECTIVE COVER GRADING PLAN
C6	ACCESS ROAD/ENTRANCE PLAN
D1	DETAILS I
D2	DETAILS II
D3	ACCESS ROAD/ENTRANCE DETAILS I
D4	ACCESS ROAD/ENTRANCE DETAILS II
V1	VENDOR SUPPLIED DRAWING - WHEEL RINSE
V2	VENDOR SUPPLIED DRAWING - TRUCK SCALE
E1	OVERALL POWER PLAN
E2	TRUCK SCALE AREA POWER PLAN
E3	PUMP HOUSE AND TRUCK SCALE EQUIPMENT RACK LAYOUTS
E4	PANEL SCHEDULES
E5	TRANSFORMER DETAILS
E6	UNDERGROUND CONDUIT ROAD CROSSING DETAILS
E7	COMPRESSOR ROOM POWER PLAN

NORTH CAROLINA PROFESSIONAL SEAL 032153 ENGINEER KENNETH R. DALY
2/18/09

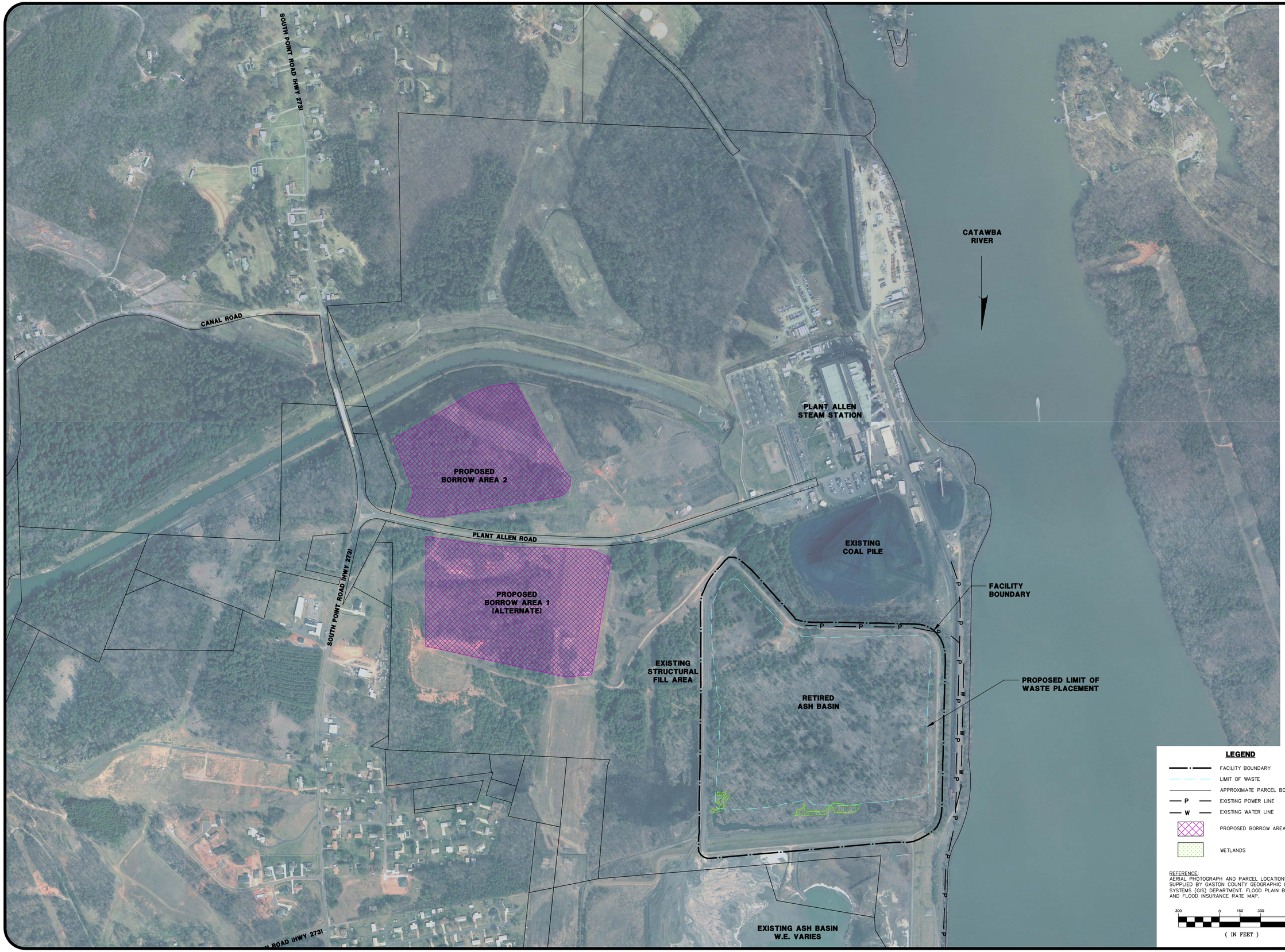
S&ME

9751 SOUTHERN PINE BLVD.
CHARLOTTE, NC 28273
(704) 523-4726
(704) 525-3953 Fax
WWW.SMEINC.COM

S&ME PROJECT NO.
1356-06-825

RETIRED ASH BASIN (RAB), DUKE ENERGY - ALLEN STEAM STATION

S&ME PROJECT NO. 1356-06-825



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NORTH CAROLINA PROFESSIONAL SEAL 032443 ENGINEER

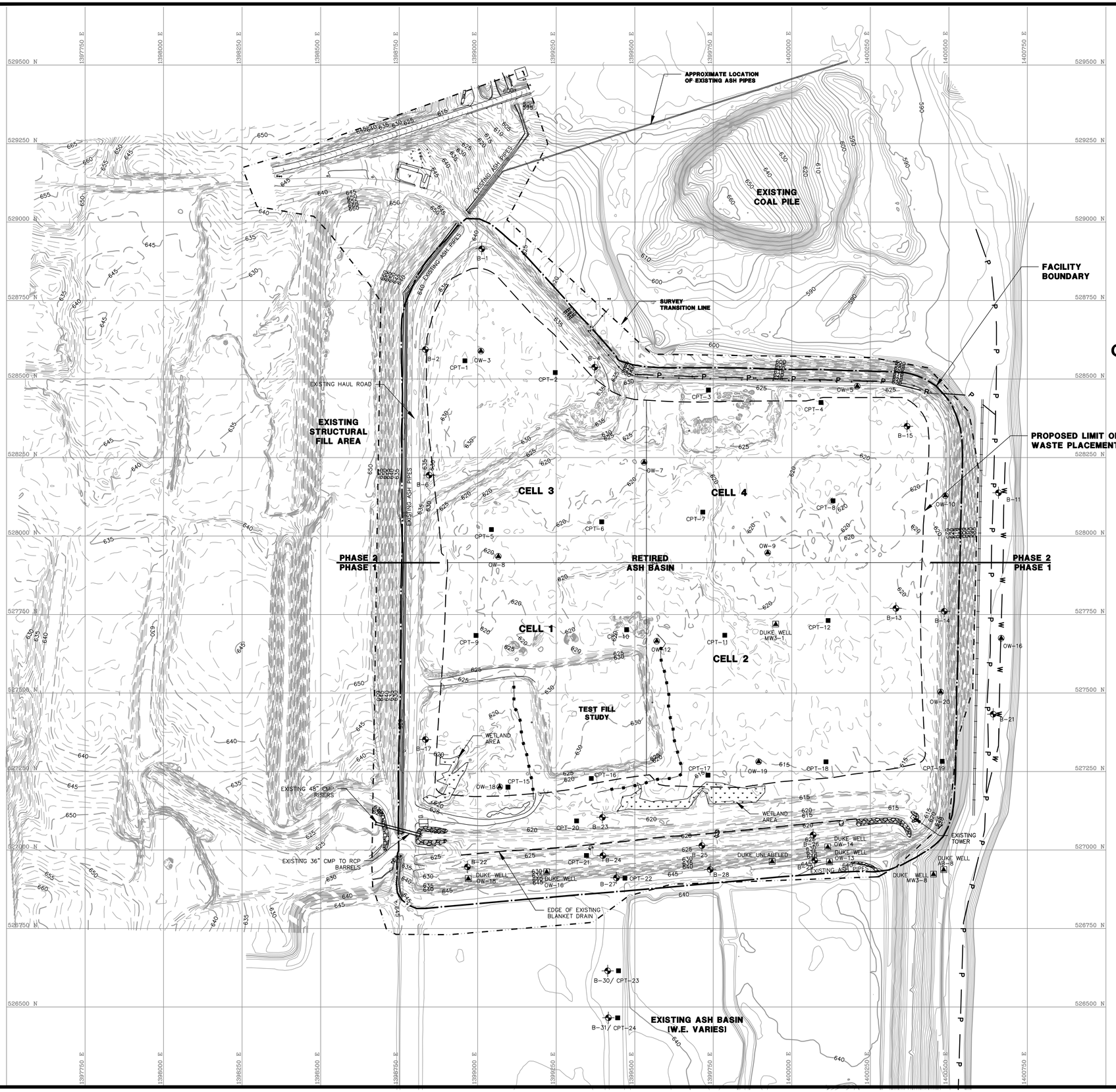
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

SITE AERIAL PHOTOGRAPH

ELECTRICAL/MECHANICAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: ELH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: IKB
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: C1	OF: 19

DRAWING PATH: Q:\356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FIG\C1 SITE AERIAL PHOTOGRAPH.DWG



LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED LIMIT OF WASTE PLACEMENT
- FACILITY BOUNDARY
- P — EXISTING POWER LINE
- W — EXISTING WATER LINE
- APPROXIMATE BLANKET DRAIN LOCATION
- EXISTING SILT FENCE
- SURVEY TRANSITION LINE
- WETLANDS
- RIPRAP
- B–1 — EXISTING BORING LOCATION
- OW–3 — EXISTING OBSERVATION WELL LOCATION
- CPT– 1 — EXISTING CPT BORING LOCATION
- DUKE WELL OW–8 — PRE–EXISTING DUKE WELL LOCATION

BORING & WELL LOCATION TABLE		
LABEL	NORTHING	EASTING
B–1	528914.66	1399012.98
B–2	528594.09	1398833.42
OW–3	528588.91	1399010.02
B–4	528537.79	1399372.58
OW–5	528477.03	1400208.35
B–6	528194.00	1398845.36
OW–7	528234.64	1399529.71
OW–8	527935.05	1399065.74
OW–9	527946.63	1399923.21
OW–10	528128.31	1400489.23
B–11	528137.83	1400657.89
OW–12	527665.37	1399570.05
B–13	527769.52	1400331.43
B–14	527760.21	1400485.41
B–15	528349.70	1400366.96
OW–16	527674.66	1400666.71
B–17	527351.94	1398833.62
OW–18	527201.11	1399069.92
OW–19	527282.00	1399894.01
OW–20	527503.05	1400474.51
B–21	527432.60	1400641.03
B–22	526946.03	1398967.25
B–23	527103.86	1399397.00
B–24	526982.08	1399398.68
B–25	527014.00	1399713.79
B–26	527048.32	1400067.98
B–27	526911.20	1399441.56
B–28	526937.84	1399740.29
B–29	526966.69	1400072.96
B–30	526615.13	1399413.86

NOTE:

1. EXISTING OBSERVATION WELLS WILL BE ABANDONED BY DUKE ENERGY PRIOR TO LANDFILL CONSTRUCTION.

REFERENCE:
TOPOGRAPHIC MAP WITHIN FACILITY BOUNDARY AND ENTRANCE/ACCESS FROM AERIAL PHOTOGRAPHY PERFORMED ON MARCH 18, 2008 PROVIDED BY SANBORN, LLC. TOPOGRAPHIC MAP OUTSIDE OF SURVEY TRANSITION LINE FROM AERIAL PHOTOGRAPHY PERFORMED ON APRIL 2, 2006 PROVIDED BY NOVA SURVEYING AND MAPPING, INC.

150 0 75 150 300
(IN FEET)

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S&ME
WWW.SMEINC.COM

NORTH CAROLINA PROFESSIONAL SEAL 032545 ENGINEER

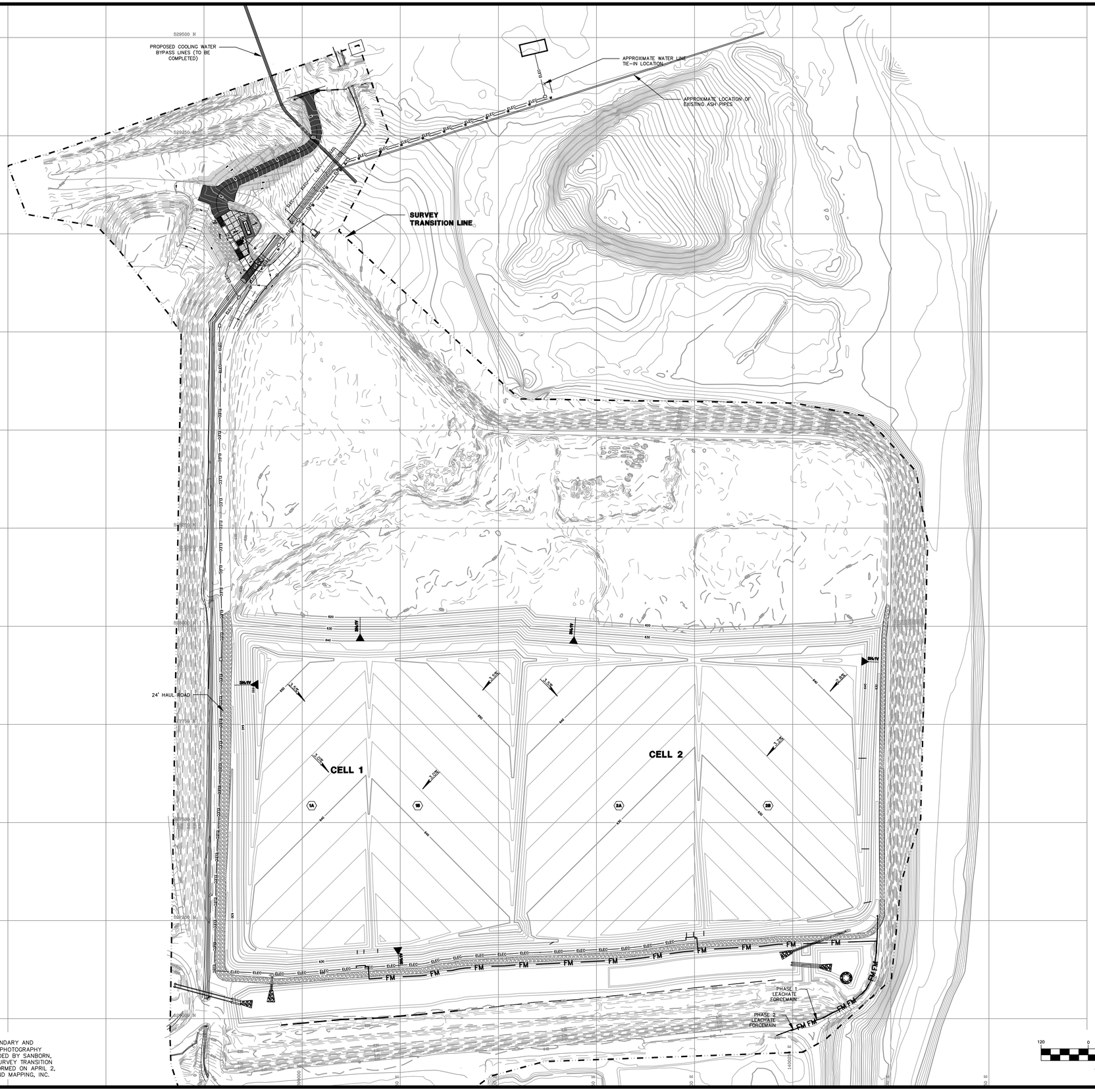
NO.	DATE	DESCRIPTION	BY
1	2–18–09	ISSUED FOR CONSTRUCTION	

SITE TOPOGRAPHIC MAP AND PROPOSED FACILITY PLAN

ELECTRICAL/MECHANICAL PHASE I RAB ASH LANDFILL DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: CLD	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KJP
PROJECT NUMBER: 1356–06–825	
SCALE: 1" = 150'	DATE: 2–18–09
DRAWING: C2	OF: 19

DRAWING PATH:Q:\356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FIG\C2 SITE TOPOGRAPHIC MAP.DWG



REFERENCE:
TOPOGRAPHIC MAP WITHIN FACILITY BOUNDARY AND ENTRANCE/ACCESS AREA FROM AERIAL PHOTOGRAPHY PERFORMED ON MARCH 18, 2008 PROVIDED BY SANBORN, LLC. TOPOGRAPHIC MAP OUTSIDE OF SURVEY TRANSITION LINE FROM AERIAL PHOTOGRAPHY PERFORMED ON APRIL 2, 2006 PROVIDED BY NOVA SURVEYING AND MAPPING, INC.

LEGEND

- ELEC — PROPOSED ELECTRICAL CONDUIT
- W — PROPOSED WATER LINE
- EXISTING INDEX CONTOUR (5')
- EXISTING INTERMEDIATE CONTOUR (1')
- PROPOSED CONSTRUCTED INDEX GRADE (10')
- PROPOSED CONSTRUCTED INTERMEDIATE GRADE (2')
- FM — PROPOSED LEACHATE FORCEMAIN
- SURVEY TRANSITION LINE
- 2A — SUBCELL INDICATOR

120 0 60 120 240
(IN FEET)

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NORTH CAROLINA PROFESSIONAL SEAL 032135 ENGINEER

NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

SITE CONDUIT & WATER LINE PLAN

ELECTRICAL/MECHANCAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: CLD	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KDP
PROJECT NUMBER: 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: C3	OF: 19

DRAWING PATH: G:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANCAL\EV\V03 - SITE CONDUIT & WATER LINE PLAN.DWG

EXISTING HAUL ROAD

EXISTING ASH PIPES

HAND HOLE PULL BOX (NOTE 2)

24' HAUL ROAD

PERIMETER BERM (WEST SIDE) 1 D1

3H:1V

3.5%

3.0%

CELL 1

1A

1B

LCS SUMP AND RISER SIDE VIEW 4 D1

SUMP LOCATION

3 D1 LDS SUMP AND RISER SIDE VIEW

2 D1 PERIMETER BERM (SOUTH SIDE)

ALTHIGH

EXISTING 36" CMP TO RCP BARRELS

EXISTING 48" CMP RISERS

CONTROL PANEL AREA 5 D2

LEACHATE FORCEMAIN TRENCH 8 D2

EDGE OF EXISTING BLANKET DRAIN

BOTTOM EL 613'

LEACHATE FORCEMAIN STUB OUT

TRANSITION FROM 14' HAUL ROAD TO 12' HAUL ROAD

PHASE 2 LEACHATE FORCEMAIN STUB OUT

EXISTING TOWER

PHASE 1 LEACHATE FORCEMAIN

PHASE 2 LEACHATE FORCEMAIN (BY OTHERS)

ELEC

FM

527750 N

527500 N

527250 N

527000 N

1398750 E

1399000 E

1399250 E

1399500 E

1399750 E

1400000 E

1400250 E

LEGEND

- EXISTING INDEX CONTOUR (5')
- EXISTING INTERMEDIATE CONTOUR (1')
- PREVIOUSLY CONSTRUCTED INDEX GRADE (10') (NOTE 1)
- PREVIOUSLY CONSTRUCTED INTERMEDIATE GRADE (2') (NOTE 1)
- FM — PROPOSED LEACHATE FORCEMAIN
- ELEC — PROPOSED ELECTRICAL CONDUIT (NOTE 2)

60 0 30 60 120

(IN FEET)

NOTES:

1. CELL 1 PROTECTIVE COVER GRADES WILL BE CONSTRUCTED WITH PHASE 1 CONSTRUCTION AND ARE SHOWN AS "PREVIOUSLY CONSTRUCTED"
2. ELECTRICAL SYSTEM COMPONENTS ARE IDENTIFIED ON DRAWINGS E1 THOUGHT E7.

REFERENCE:
TOPOGRAPHIC MAP FROM AERIAL PHOTOGRAPHY PERFORMED ON MARCH 18, 2008. PROVIDED BY SANBORN, LLC.

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NORTH CAROLINA PROFESSIONAL SEAL 032135 ENGINEER

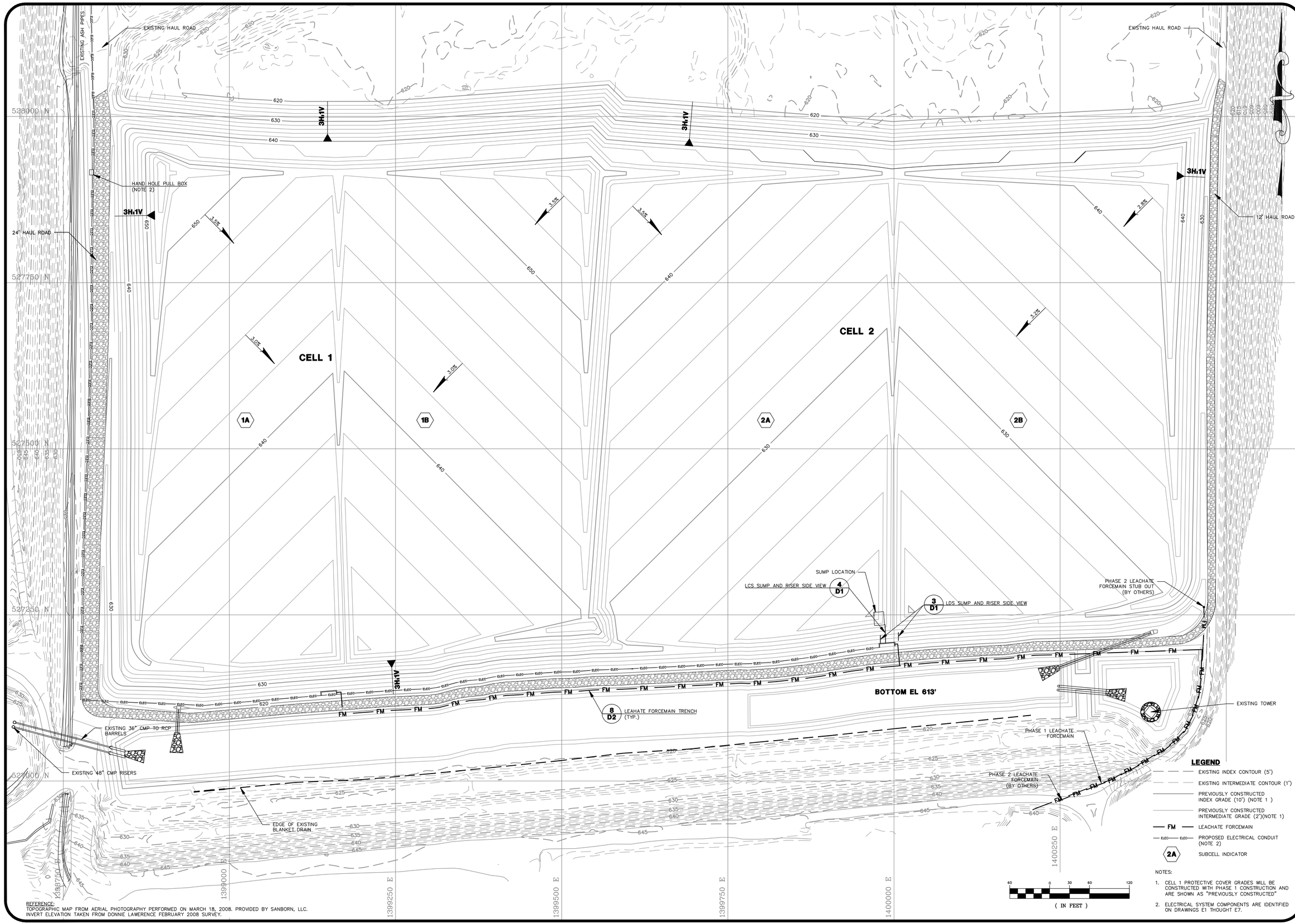
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

CELL 1 PROTECTIVE COVER GRADING PLAN

ELECTRICAL/MECHANICAL PHASE I RAB ASH LANDFILL DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: CLD	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KSP
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: C4	OF: 19

DRAWING PATH: G:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\PS\C4 CELL 1 PROTECTIVE COVER.DWG



REFERENCE:
TOPOGRAPHIC MAP FROM AERIAL PHOTOGRAPHY PERFORMED ON MARCH 18, 2008. PROVIDED BY SANBORN, LLC.
INVERT ELEVATION TAKEN FROM DONNIE LAWERENCE FEBRUARY 2008 SURVEY.

LEGEND

- EXISTING INDEX CONTOUR (5')
- EXISTING INTERMEDIATE CONTOUR (1')
- PREVIOUSLY CONSTRUCTED INDEX GRADE (10') (NOTE 1)
- PREVIOUSLY CONSTRUCTED INTERMEDIATE GRADE (2')(NOTE 1)
- FM — LEACHATE FORCEMAIN
- ELEC — ELEC — PROPOSED ELECTRICAL CONDUIT (NOTE 2)
- 2A SUBCELL INDICATOR

NOTES:

1. CELL 1 PROTECTIVE COVER GRADES WILL BE CONSTRUCTED WITH PHASE 1 CONSTRUCTION AND ARE SHOWN AS "PREVIOUSLY CONSTRUCTED"
2. ELECTRICAL SYSTEM COMPONENTS ARE IDENTIFIED ON DRAWINGS E1 THOUGHT E7.

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NORTH CAROLINA PROFESSIONAL SEAL 032135 ENGINEER

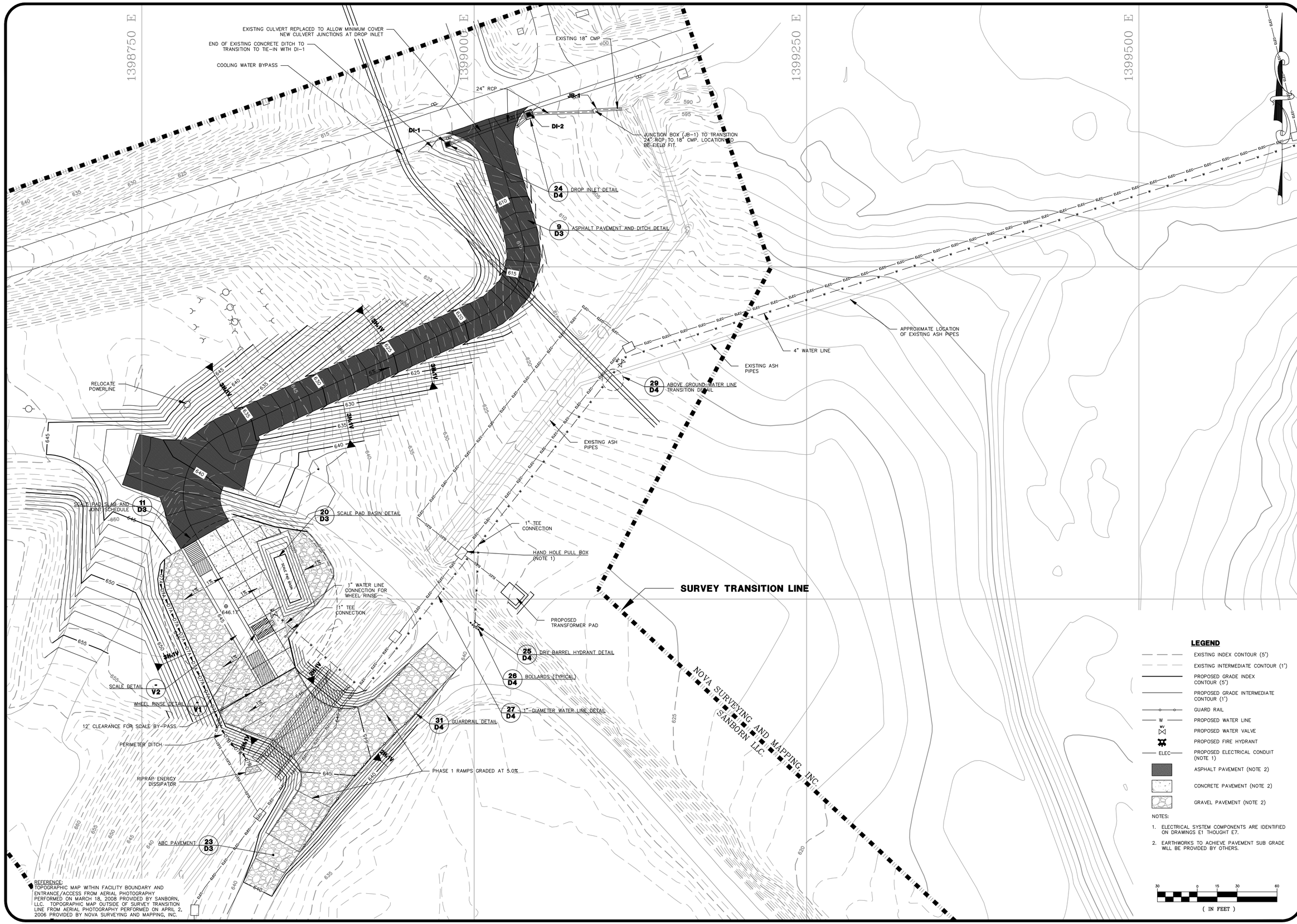
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

CELL 2 PROTECTIVE COVER GRADING PLAN

ELECTRICAL/MECHANICAL PHASE I RAB ASH LANDFILL DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: CLD	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KDP
PROJECT NUMBER: 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: C5	OF: 19

DRAWING PATH: G:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\F\CS CELL 2 PROTECTIVE COVER.DWG



REFERENCE:
TOPOGRAPHIC MAP WITHIN FACILITY BOUNDARY AND ENTRANCE/ACCESS FROM AERIAL PHOTOGRAPHY PERFORMED ON MARCH 18, 2008 PROVIDED BY SANBORN, LLC. TOPOGRAPHIC MAP OUTSIDE OF SURVEY TRANSITION LINE FROM AERIAL PHOTOGRAPHY PERFORMED ON APRIL 2, 2006 PROVIDED BY NOVA SURVEYING AND MAPPING, INC.

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NORTH CAROLINA PROFESSIONAL SEAL 032133 ENGINEER WILLIAM H. HUNTER

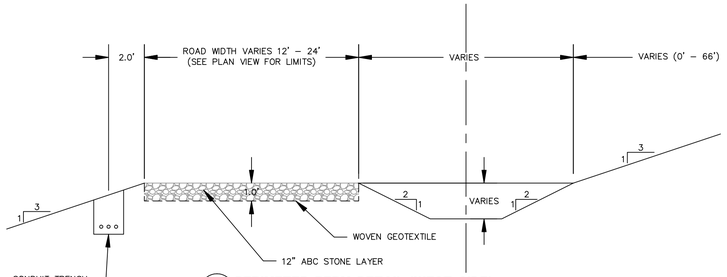
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

ACCESS ROAD / ENTRANCE PLAN

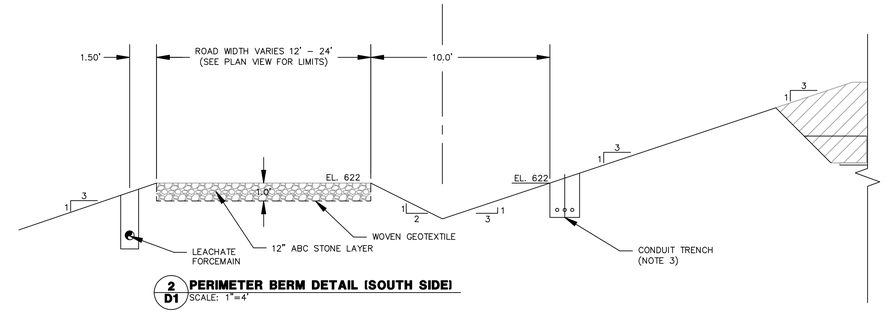
ELECTRICAL/MECHANICAL PHASE I RAB ASH LANDFILL DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: WMH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KTP
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: C6	OF: 19

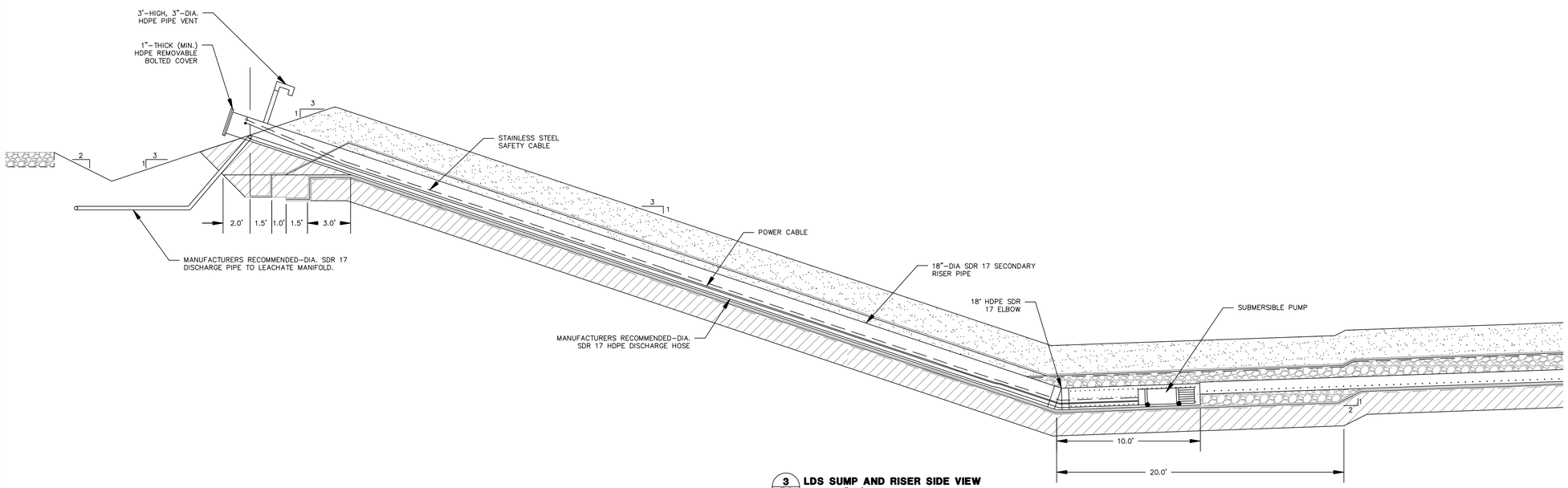
DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FIG\C6 ACCESS ROAD ENTRANCE PLAN.DWG



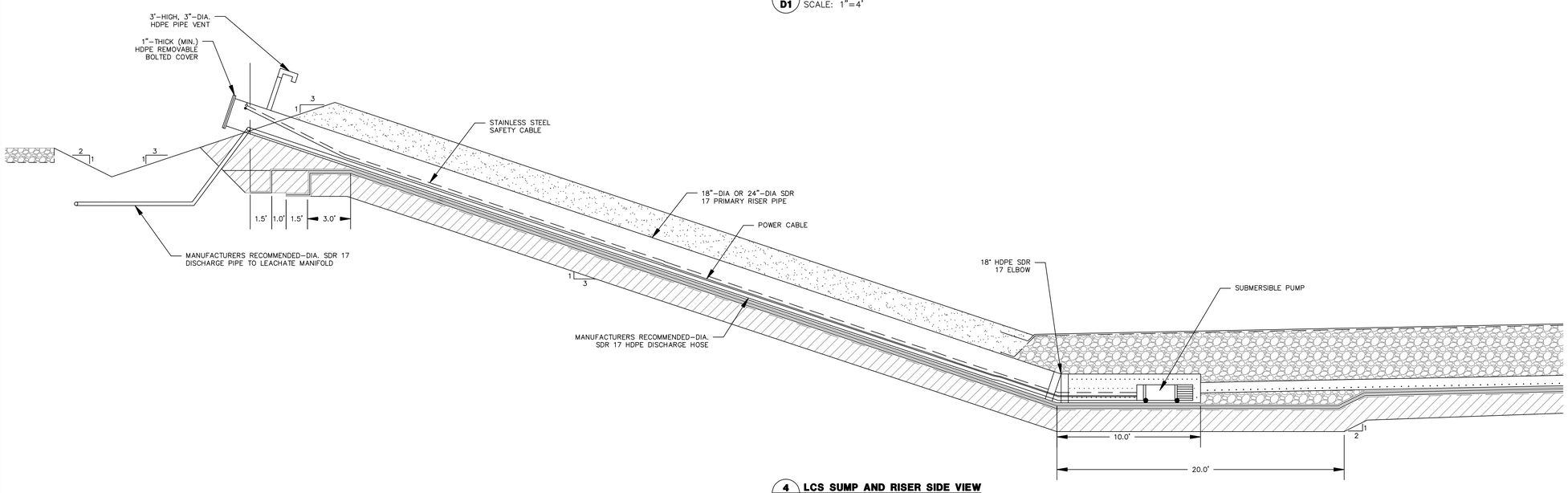
1 / D1 PERIMETER BERM DETAIL (WEST SIDE)
SCALE: 1"=4'



2 / D1 PERIMETER BERM DETAIL (SOUTH SIDE)
SCALE: 1"=4'



3 / D1 LDS SUMP AND RISER SIDE VIEW
SCALE: 1"=4'



4 / D1 LCS SUMP AND RISER SIDE VIEW
SCALE: 1"=4'

GENERAL NOTES:

1. SIDE SLOPE RISERS AND COVERS TO BE PROVIDED BY OTHERS.
2. CENTERLINE OF CONDUIT TRENCH ON WEST SIDE OF ROAD TO BE 2-FT. FROM EDGE OF ROAD.
3. CENTERLINE OF CONDUIT TRENCH ON NORTH SIDE OF ROAD TO BE 10.5 FT. FROM EDGE OF ROAD.

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NORTH CAROLINA PROFESSIONAL SEAL 032133 ENGINEER

NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

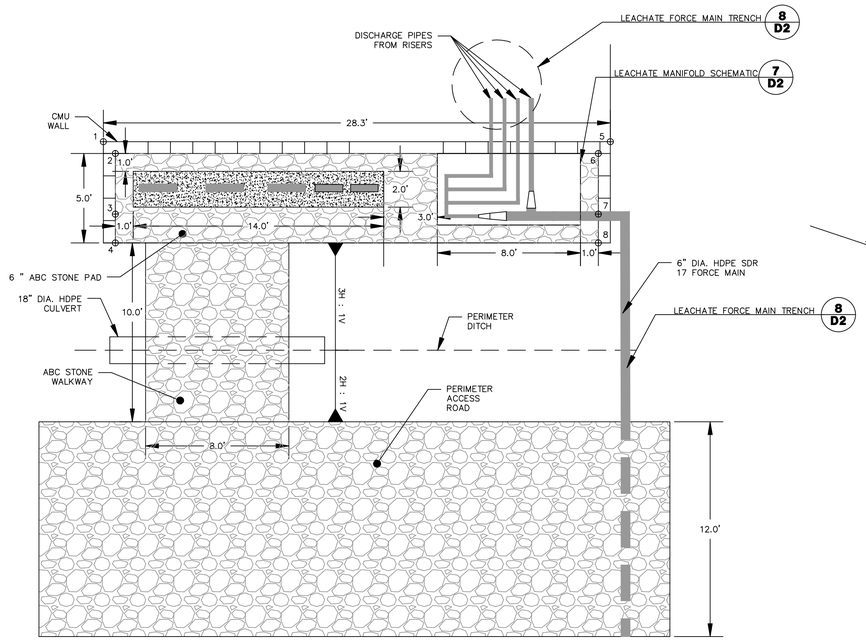
DETAILS I

ELECTRICAL/MECHANICAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

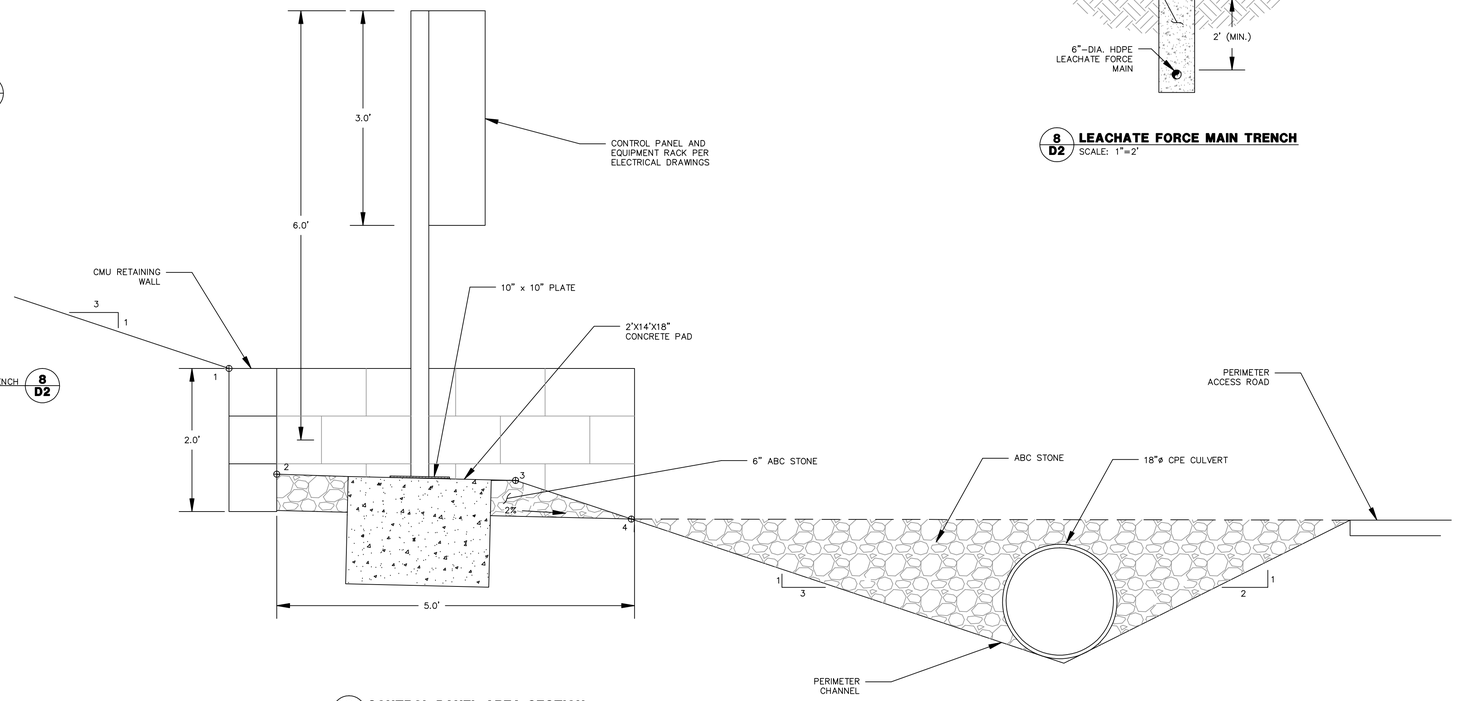
DRAWN BY: ELH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KDA
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: D1	OF: 19

DRAWING PATH: G:\1356\DUKE ENERGY\DP-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FS\DETAILS 1-2.DWG

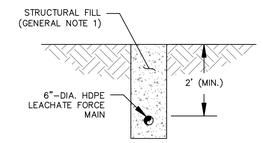
CELL 1				CELL 2			
POINT	NORTHING	EASTING	ELEVATION	POINT	NORTHING	EASTING	ELEVATION
1	527134.65	1399137.21	624.00	1	527206.96	1399977.23	624.00
2	527133.72	1399138.28	622.50	2	527206.06	1399978.32	622.50
3	527130.35	1399138.53	622.44	3	527202.69	1399978.63	622.44
4	527128.74	1399138.65	621.90	4	527201.08	1399978.78	621.90
5	527136.46	1399161.44	624.00	5	527209.19	1400001.43	624.00
6	527135.39	1399160.52	622.50	6	527208.10	1400000.53	622.50
7	527132.02	1399160.77	622.44	7	527204.73	1400000.84	622.44
8	527130.40	1399160.89	621.90	8	527203.12	1400000.99	621.90



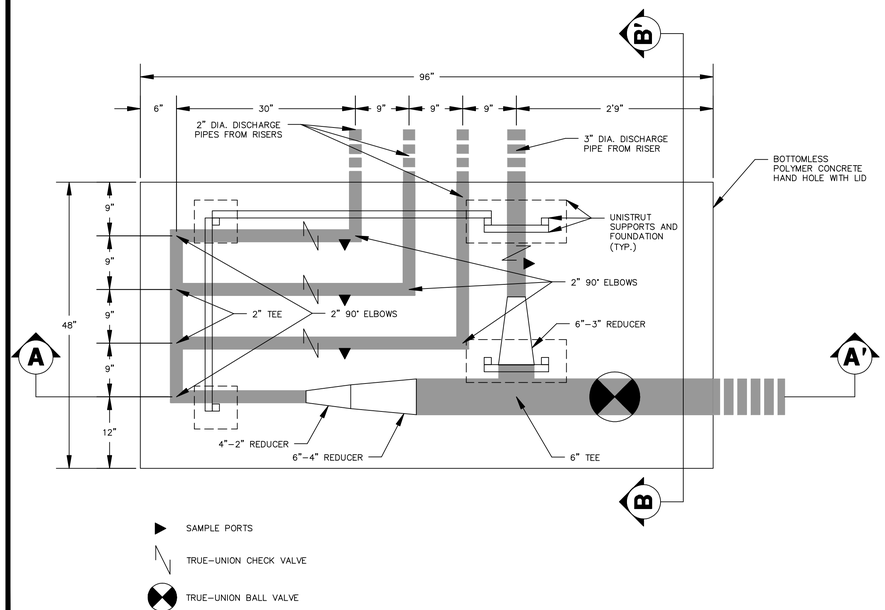
5 D2 **CONTROL PANEL AREA (TYP.)**
SCALE: 1"=4'



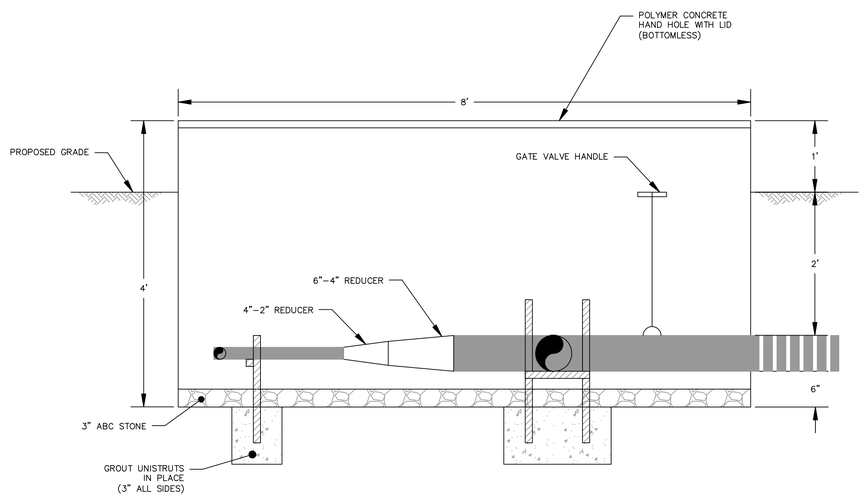
6 D2 **CONTROL PANEL AREA SECTION**
SCALE: 1"=1'



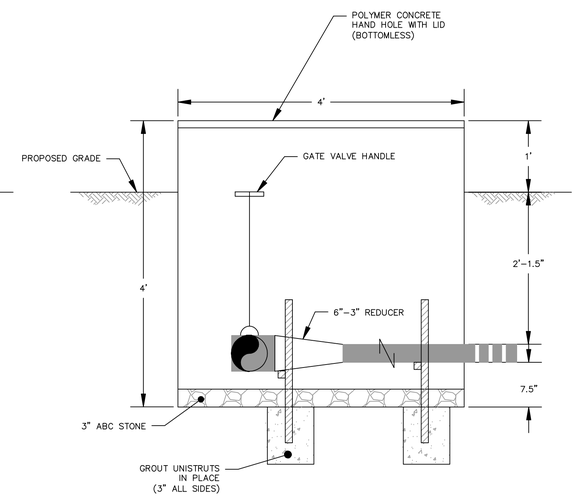
8 D2 **LEACHATE FORCE MAIN TRENCH**
SCALE: 1"=2'



7 D2 **LEACHATE MANIFOLD SCHEMATIC**
SCALE: 1"=1'



TYPICAL HAND HOLE SECTION A-A'
SCALE: 1"=1'



TYPICAL HAND HOLE DETAIL SECTION B-B'
SCALE: 1"=1'

GENERAL NOTES:

1. STRUCTURAL FILL SHALL CONSIST OF BORROW SOILS CONSISTENT WITH SPECIFICATION SECTION 02320.

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NORTH CAROLINA PROFESSIONAL SEAL 032133 ENGINEER

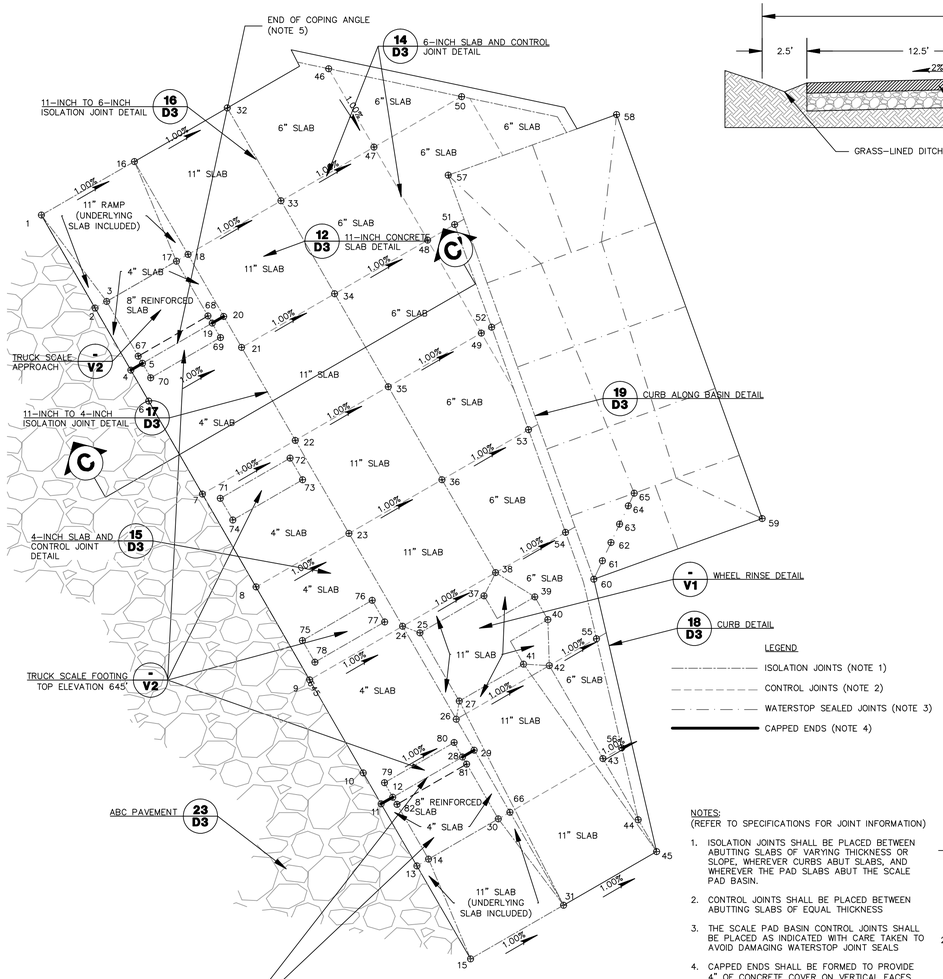
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	KB

DETAILS II

ELECTRICAL/MECHANICAL PHASE I RAB ASH LANDFILL DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: ELH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KBD
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: D2	OF: 19

DRAWING PATH: G:\1356\DUKE ENERGY\DP-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FS\DETAILS 1-2.DWG



LEGEND

- ISOLATION JOINTS (NOTE 1)
- CONTROL JOINTS (NOTE 2)
- WATERSTOP SEALED JOINTS (NOTE 3)
- CAPPED ENDS (NOTE 4)

NOTES:
(REFER TO SPECIFICATIONS FOR JOINT INFORMATION)

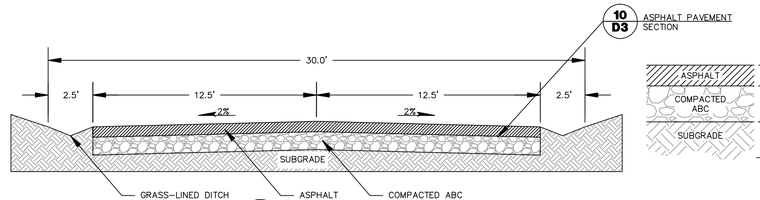
1. ISOLATION JOINTS SHALL BE PLACED BETWEEN ABUTTING SLABS OF VARYING THICKNESS OR SLOPE, WHEREVER CURBS ABUT SLABS, AND WHEREVER THE PAD SLABS ABUT THE SCALE PAD BASIN.
2. CONTROL JOINTS SHALL BE PLACED BETWEEN ABUTTING SLABS OF EQUAL THICKNESS
3. THE SCALE PAD BASIN CONTROL JOINTS SHALL BE PLACED AS INDICATED WITH CARE TAKEN TO AVOID DAMAGING WATERSTOP JOINT SEALS
4. CAPPED ENDS SHALL BE FORMED TO PROVIDE 4" OF CONCRETE COVER ON VERTICAL FACES. ISOLATION JOINTS SHOULD ALSO BE INCLUDED AT BASE OF VERTICAL FACE BETWEEN CAPPED END AND ADJACENT 4" SLAB.
5. END OF COPING ANGLE RESULTS IN VERTICAL DROP OF 1' 2" FROM SCALE APPROACH TO UNDERLYING TRUCK SCALE FOOTING (SEE DETAIL SHEET V2).
6. ALL SLABS SHALL BE 15-FT X 15-FT WHEREVER POSSIBLE

11 D3 SCALE PAD SLAB AND JOINT SCHEDULE
SCALE: 1"=10'

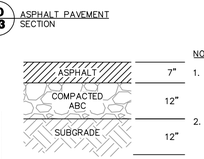
TOP OF CONCRETE SLAB POINTS							
POINT	NORTHING	EASTING	ELEVATION	POINT	NORTHING	EASTING	ELEVATION
1	529037.65	1398779.52	645.00	34	529026.66	1398820.50	644.70
2	529024.66	1398787.02	645.00	35	529013.67	1398828.00	644.70
3	529025.59	1398788.64	646.17	36	529000.67	1398835.49	644.70
4	529015.99	1398792.02	645.00	37	528984.45	1398841.37	644.44
5	529016.93	1398793.64	646.17	38	528987.68	1398842.99	644.70
6	529011.66	1398794.52	645.00	39	528984.30	1398848.45	644.44
7	528998.67	1398802.01	645.00	40	528981.11	1398850.30	644.44
8	528985.68	1398809.51	645.00	41	528974.90	1398846.88	644.44
9	528972.69	1398817.01	645.00	42	528974.69	1398850.49	644.70
10	528959.69	1398824.50	645.00	43	528961.70	1398857.98	645.36
11	528955.36	1398827.00	645.00	44	528953.15	1398862.92	645.69
12	528956.30	1398828.63	646.17	45	528948.70	1398865.48	645.87
13	528946.70	1398832.00	645.00	46	529058.11	1398819.67	644.68
14	528947.64	1398833.62	646.17	47	529047.15	1398826.00	644.55
15	528933.71	1398839.50	646.17	48	529034.15	1398833.49	644.55
16	529045.15	1398792.52	645.85	49	529021.16	1398840.99	644.55
17	529031.22	1398798.39	646.17	50	529054.21	1398838.24	644.55
18	529032.15	1398800.01	645.85	51	529036.33	1398837.26	644.51
19	529022.55	1398803.39	646.17	52	529021.99	1398842.43	644.53
20	529023.49	1398805.01	645.85	53	529007.65	1398847.59	644.56
21	529019.16	1398807.51	645.85	54	528993.31	1398852.75	644.59
22	529006.17	1398815.01	645.85	55	528978.45	1398857.08	644.62
23	528993.18	1398822.50	645.85	56	528963.32	1398861.03	645.33
24	528980.18	1398830.00	645.85	57	529043.67	1398836.37	644.50
25	528979.28	1398832.41	644.44	58	529051.70	1398859.89	644.50
26	528967.19	1398837.50	645.85	59	528995.25	1398880.22	644.50
27	528969.73	1398837.92	644.44	60	528986.78	1398856.70	644.50
28	528961.92	1398838.37	646.17	61	528989.34	1398857.91	643.50
29	528962.86	1398839.99	645.85	62	528991.89	1398859.11	642.50
30	528953.26	1398843.37	646.17	63	528994.45	1398860.32	641.50
31	528941.21	1398852.49	646.02	64	528997.01	1398861.52	640.50
32	529052.64	1398805.51	644.70	65	528998.79	1398862.35	639.81
33	529039.65	1398813.00	644.70	66	528954.20	1398844.99	645.32

TRUCK SCALE FOOTING POINTS		
POINT	NORTHING	EASTING
67	529017.93	1398793.06
68	529023.56	1398802.81
69	529020.52	1398804.56
70	529014.90	1398794.81
71	528998.07	1398804.53
72	529003.69	1398814.27
73	529000.66	1398816.02
74	528995.03	1398806.28
75	528978.20	1398815.99
76	528983.82	1398825.74
77	528980.79	1398827.48
78	528975.17	1398817.74
79	528958.33	1398827.46
80	528963.95	1398837.20
81	528960.92	1398838.95
82	528955.30	1398829.20

*ALL TRUCK SCALE FOOTINGS SHALL HAVE TOP ELEVATIONS OF 645'



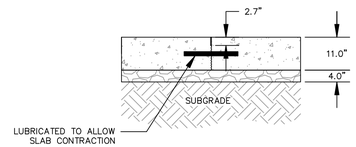
9 D3 ASPHALT PAVEMENT AND DITCH DETAIL
SCALE: 1"=4'



NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. AGGREGATE BASE COURSE SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".

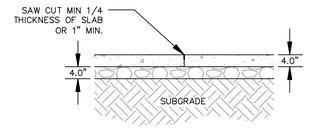
10 D3 ASPHALT PAVEMENT SECTION
SCALE: 1"=2'



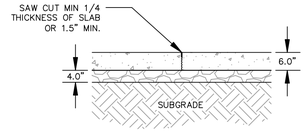
NOTES:

1. DOWELS SHALL MEASURE 1-3/8" IN DIAMETER AND SHALL MEASURE 18" IN LENGTH
2. DOWELS SHALL BE SMOOTH AND LUBRICATED TO ALLOW SLAB CONTRACTION AND EXPANSION
3. SAWED OR CAST JOINTS SHALL EXTEND TO A DEPTH EQUAL TO 1/4 THE THICKNESS OF THE SLAB
4. JOINTS SHALL BE SEALED AS INDICATED IN THE SPECIFICATIONS

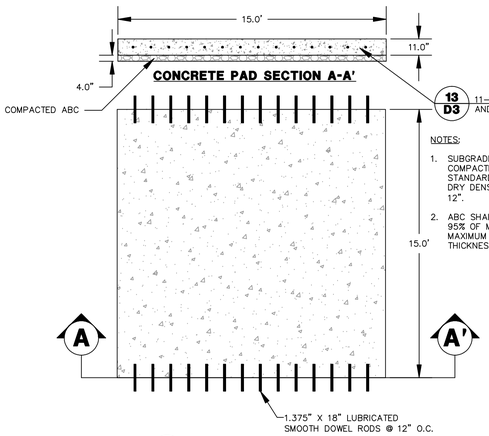
13 D3 11-INCH SLAB DOWEL AND JOINT DETAIL
SCALE: 1"=2'



15 D3 4-INCH SLAB AND CONTROL JOINT DETAIL
SCALE: 1"=2'



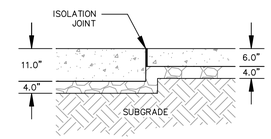
14 D3 6-INCH SLAB AND CONTROL JOINT DETAIL
SCALE: 1"=2'



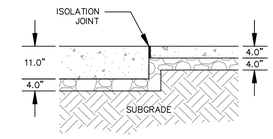
NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. ABC SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO THICKNESS SPECIFIED

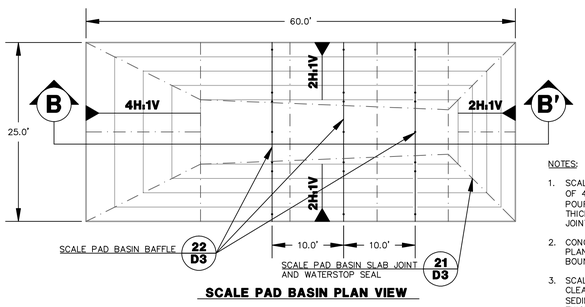
12 D3 11" CONCRETE SLAB DETAIL
SCALE: 1"=4'



16 D3 11-INCH TO 6-INCH ISOLATION JOINT DETAIL
SCALE: 1"=2'



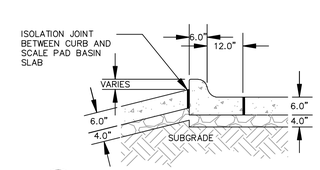
17 D3 11-INCH TO 4-INCH ISOLATION JOINT DETAIL
SCALE: 1"=2'



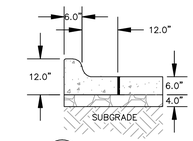
SCALE PAD BASIN PLAN VIEW

NOTES:

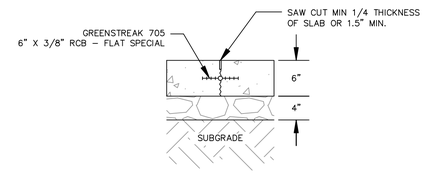
1. SCALE PAD BASIN SHALL CONSIST OF 4" COMPACTED ABC BASE, POURED CONCRETE SLABS OF 6" THICKNESS WITH WATERSTOPPED JOINTS
2. CONCRETE PADS SHALL BE PLANAR WITHIN JOINTED BOUNDARIES
3. SCALE PAD BASIN SHALL BE CLEARED OUT MONTHLY OR WHEN SEDIMENTATION EXCEEDS 6" THICKNESS
4. BAFFLES WILL BE SECURED TO BASIN SLABS WITH CORROSION RESISTANT WIRES STRUNG THROUGH ANCHORED BOLTS



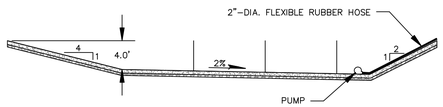
19 D3 CURB ALONG BASIN DETAIL
SCALE: 1" = 2'



18 D3 CURB DETAIL
SCALE: 1" = 2'

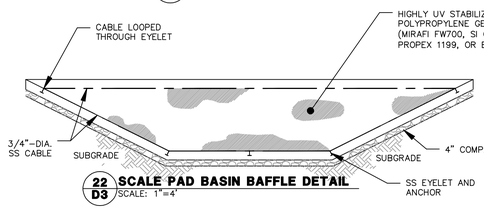


21 D3 SCALE PAD BASIN SLAB JOINT AND WATERSTOP SEAL
SCALE: 1"=1'

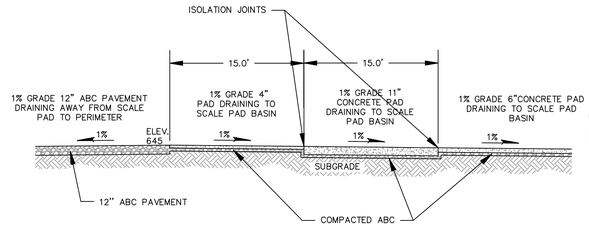


SCALE PAD BASIN SECTION B-B'

20 D3 SCALE PAD BASIN DETAILS
SCALE: 1"=10'



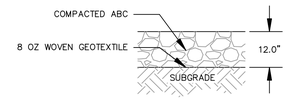
22 D3 SCALE PAD BASIN BAFFLE DETAIL
SCALE: 1"=4'



NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. ABC SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO THICKNESS SPECIFIED

SCALE PAD SECTION C-C'
SCALE: 1"= 8'



23 D3 ABC PAVEMENT
1"=2'

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NORTH CAROLINA PROFESSIONAL SEAL 032135 ENGINEER

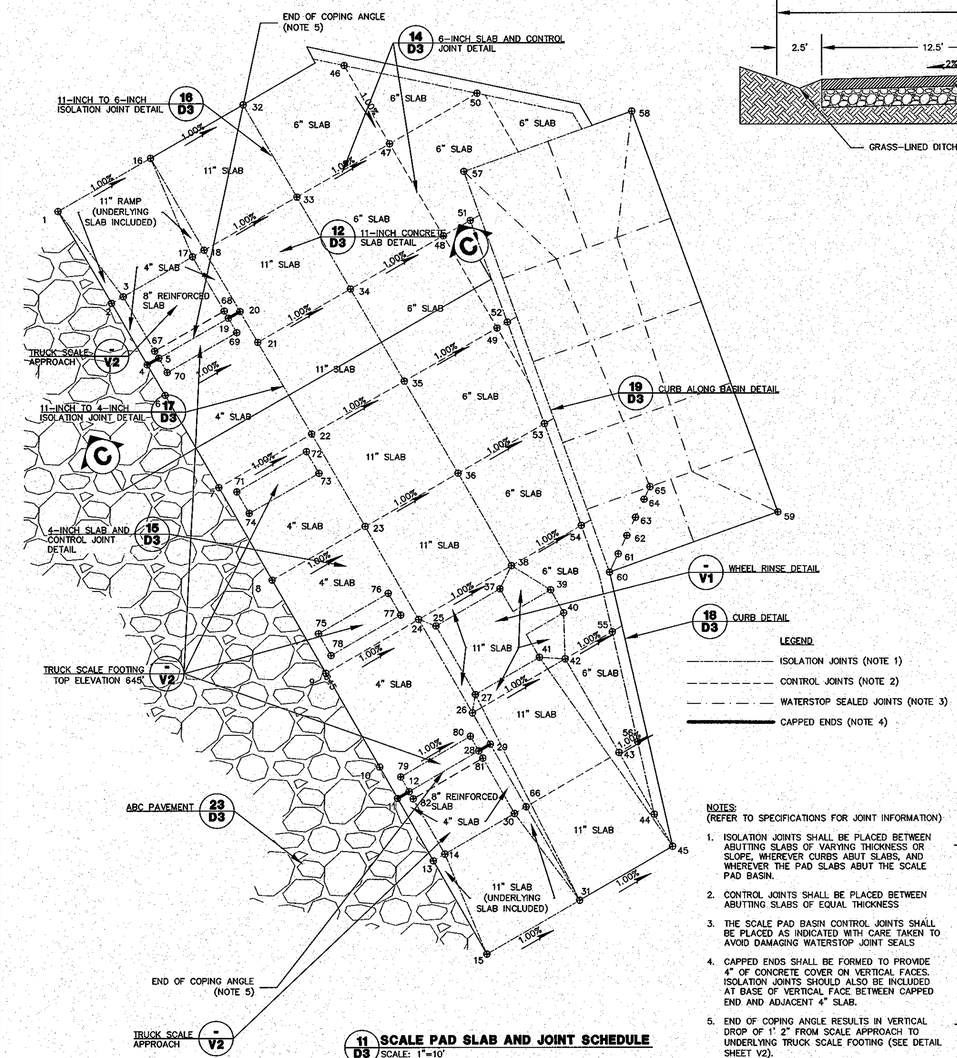
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

ACCESS ROAD / ENTRANCE DETAILS I

ELECTRICAL/MECHANICAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: WMH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KPP
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: D3	OF: 19

DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FIG\DETAILS 3-4.DWG



11 D3 SCALE PAD SLAB AND JOINT SCHEDULE
SCALE: 1"=10'

NOTES:
(REFER TO SPECIFICATIONS FOR JOINT INFORMATION)

1. ISOLATION JOINTS SHALL BE PLACED BETWEEN ABUTTING SLABS OF VARYING THICKNESS OR SLOPE, WHEREVER CURBS ABUT SLABS, AND WHEREVER THE PAD SLABS ABUT THE SCALE PAD BASIN.
2. CONTROL JOINTS SHALL BE PLACED BETWEEN ABUTTING SLABS OF EQUAL THICKNESS
3. THE SCALE PAD BASIN CONTROL JOINTS SHALL BE PLACED AS INDICATED WITH CARE TAKEN TO AVOID DAMAGING WATERSTOP JOINT SEALS
4. CAPPED ENDS SHALL BE FORMED TO PROVIDE 4" OF CONCRETE COVER ON VERTICAL FACES. ISOLATION JOINTS SHOULD ALSO BE INCLUDED AT BASE OF VERTICAL FACE BETWEEN CAPPED END AND ADJACENT 4" SLAB.
5. END OF COPING ANGLE RESULTS IN VERTICAL DROP OF 1' 2" FROM SCALE APPROACH TO UNDERLYING TRUCK SCALE FOOTING (SEE DETAIL SHEET V2).
6. ALL SLABS SHALL BE 15-FT X 15-FT WHEREVER POSSIBLE

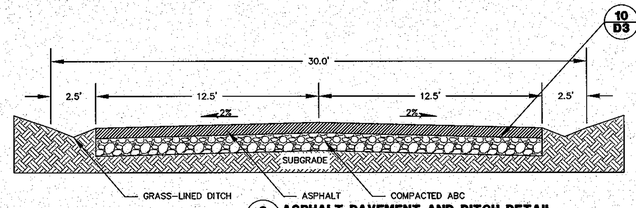
TOP OF CONCRETE SLAB POINTS

POINT	NORTHING	EASTING	ELEVATION	POINT	NORTHING	EASTING	ELEVATION
1	529037.65	1398779.52	645.00	34	529026.66	1398820.50	644.70
2	529024.66	1398787.02	645.00	35	529013.67	1398828.00	644.70
3	529025.59	1398788.64	646.17	36	529000.67	1398835.49	644.70
4	529015.99	1398792.02	645.00	37	528984.45	1398841.37	644.44
5	529016.93	1398793.64	646.17	38	528987.68	1398842.99	644.70
6	529011.66	1398794.52	645.00	39	528984.30	1398846.45	644.44
7	528998.67	1398802.01	645.00	40	528981.11	1398850.30	644.44
8	528985.68	1398809.51	645.00	41	528974.90	1398846.88	644.44
9	528972.69	1398817.01	645.00	42	528974.69	1398850.49	644.70
10	528959.69	1398824.50	645.00	43	528961.70	1398857.98	645.36
11	528955.36	1398827.00	645.00	44	528953.15	1398862.92	645.69
12	528956.30	1398828.63	646.17	45	528948.70	1398865.48	645.87
13	528946.70	1398832.00	645.00	46	529058.11	1398819.67	644.68
14	528947.64	1398833.62	646.17	47	529047.15	1398826.00	644.55
15	528933.71	1398839.50	646.17	48	529034.15	1398833.49	644.55
16	529045.15	1398792.52	645.85	49	529021.16	1398840.99	644.55
17	529031.22	1398798.39	646.17	50	529054.21	1398838.24	644.55
18	529032.15	1398800.01	645.85	51	529036.33	1398837.26	644.51
19	529022.55	1398803.39	646.17	52	529021.99	1398842.43	644.53
20	529023.49	1398805.01	645.85	53	529007.65	1398847.59	644.56
21	529019.16	1398807.51	645.85	54	528993.31	1398852.75	644.59
22	529006.17	1398815.01	645.85	55	528978.45	1398857.08	644.62
23	528993.18	1398822.50	645.85	56	528963.32	1398861.03	645.33
24	528980.18	1398830.00	645.85	57	529043.67	1398836.37	644.50
25	528979.28	1398832.41	644.44	58	529051.70	1398859.89	644.50
26	528967.19	1398837.50	645.85	59	528995.25	1398880.22	644.50
27	528969.73	1398837.92	644.44	60	528986.78	1398856.70	644.50
28	528961.92	1398838.37	646.17	61	528989.34	1398857.91	643.50
29	528962.86	1398839.99	645.85	62	528991.89	1398859.11	642.50
30	528953.26	1398843.37	646.17	63	528994.45	1398880.32	641.50
31	528941.21	1398852.49	646.02	64	528997.01	1398861.52	640.50
32	529052.64	1398805.51	644.70	65	528998.79	1398862.35	639.81
33	529039.65	1398813.00	644.70	66	528954.20	1398844.99	645.32

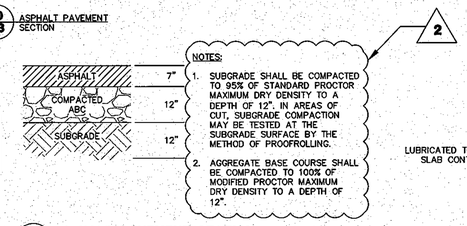
TRUCK SCALE FOOTING POINTS

POINT	NORTHING	EASTING
67	529017.93	1398793.06
68	529023.56	1398802.81
69	529020.52	1398804.56
70	529014.90	1398794.81
71	528998.07	1398804.53
72	529003.69	1398814.27
73	529000.66	1398816.02
74	528995.03	1398806.28
75	528978.20	1398815.99
76	528983.82	1398825.74
77	528980.79	1398827.48
78	528975.17	1398817.74
79	528958.33	1398827.46
80	528963.95	1398837.20
81	528960.92	1398838.95
82	528955.30	1398829.20

*ALL TRUCK SCALE FOOTINGS SHALL HAVE TOP ELEVATIONS OF 645'



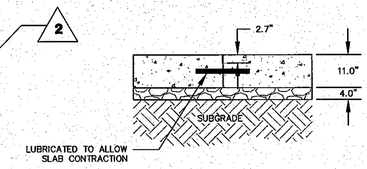
9 D3 ASPHALT PAVEMENT AND DITCH DETAIL
SCALE: 1"=4'



NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12". IN AREAS OF CUT, SUBGRADE COMPACTION MAY BE TESTED AT THE SUBGRADE SURFACE BY THE METHOD OF PROOFROLLING.
2. AGGREGATE BASE COURSE SHALL BE COMPACTED TO 100% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".

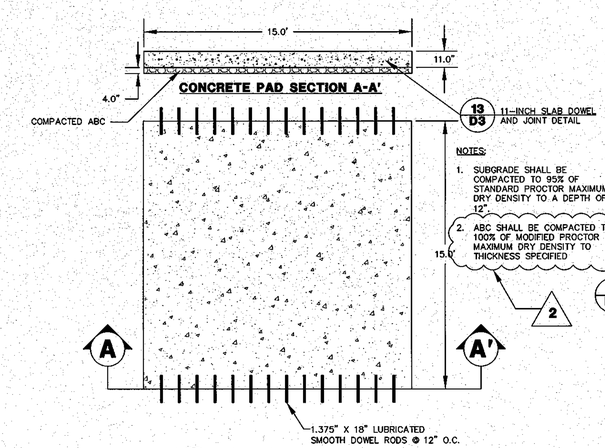
10 D3 ASPHALT PAVEMENT SECTION
SCALE: 1"=2'



NOTES:

1. DOWELS SHALL MEASURE 1-3/8" IN DIAMETER AND SHALL MEASURE 18" IN LENGTH
2. DOWELS SHALL BE SMOOTH AND LUBRICATED TO ALLOW SLAB CONTRACTION AND EXPANSION
3. SAWED OR CAST JOINTS SHALL EXTEND TO A DEPTH EQUAL TO 1/4 THE THICKNESS OF THE SLAB
4. JOINTS SHALL BE SEALED AS INDICATED IN THE SPECIFICATIONS

13 D3 11-INCH SLAB DOWEL AND JOINT DETAIL
SCALE: 1"=2'

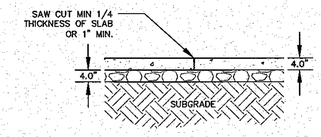


CONCRETE PAD SECTION A-A'

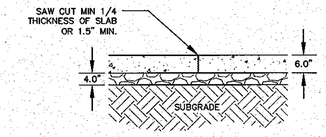
NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. ABC SHALL BE COMPACTED TO 100% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO THICKNESS SPECIFIED

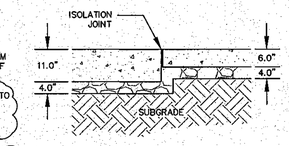
12 D3 11" CONCRETE SLAB DETAIL
SCALE: 1"=4'



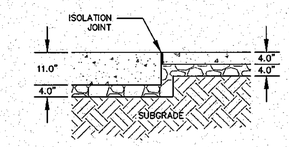
15 D3 4-INCH SLAB AND CONTROL JOINT DETAIL
SCALE: 1"=2'



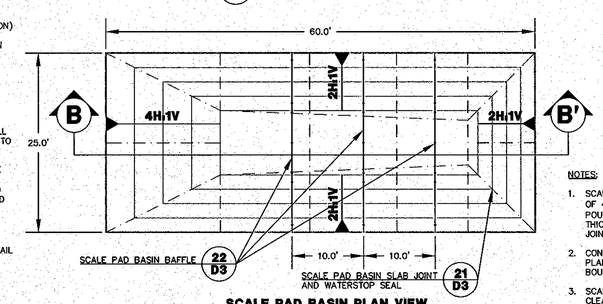
14 D3 6-INCH SLAB AND CONTROL JOINT DETAIL
SCALE: 1"=2'



16 D3 11-INCH TO 6-INCH ISOLATION JOINT DETAIL
SCALE: 1"=2'



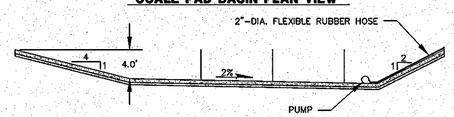
17 D3 11-INCH TO 4-INCH ISOLATION JOINT DETAIL
SCALE: 1"=2'



SCALE PAD BASIN PLAN VIEW

NOTES:

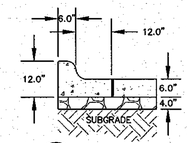
1. SCALE PAD BASIN SHALL CONSIST OF 4" COMPACTED ABC BASE, POURED CONCRETE SLABS OF 6" THICKNESS WITH WATERSTOPPED JOINTS
2. CONCRETE PADS SHALL BE PLANAR WITHIN JOINTED BOUNDARIES
3. SCALE PAD BASIN SHALL BE CLEARED OUT MONTHLY OR WHEN SEDIMENTATION EXCEEDS 6" THICKNESS
4. BAFFLES WILL BE SECURED TO BASIN SLABS WITH CORROSION RESISTANT WIRES STRUNG THROUGH ANCHORED BOLTS



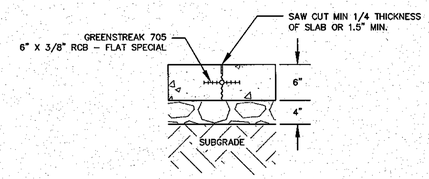
SCALE PAD BASIN SECTION B-B'

20 D3 SCALE PAD BASIN DETAILS
SCALE: 1"=10'

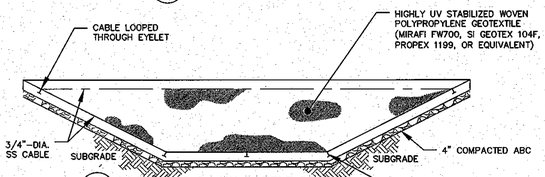
19 D3 CURB ALONG BASIN DETAIL
SCALE: 1" = 2'



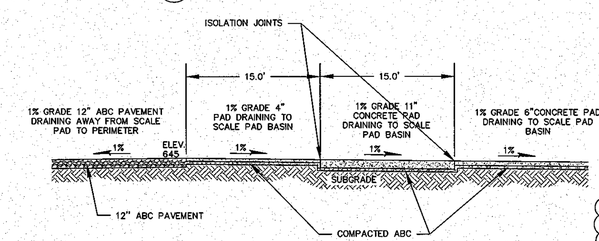
18 D3 CURB DETAIL
SCALE: 1" = 2'



21 D3 SCALE PAD BASIN SLAB JOINT AND WATERSTOP SEAL
SCALE: 1"=1'



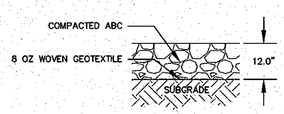
22 D3 SCALE PAD BASIN BAFFLE DETAIL
SCALE: 1"=4'



SCALE PAD SECTION C-C'
SCALE: 1"= 8'

NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. ABC SHALL BE COMPACTED TO 100% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO THICKNESS SPECIFIED



23 D3 ABC PAVEMENT
1"=2'

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NORTH CAROLINA PROFESSIONAL SEAL 032153 ENGINEER

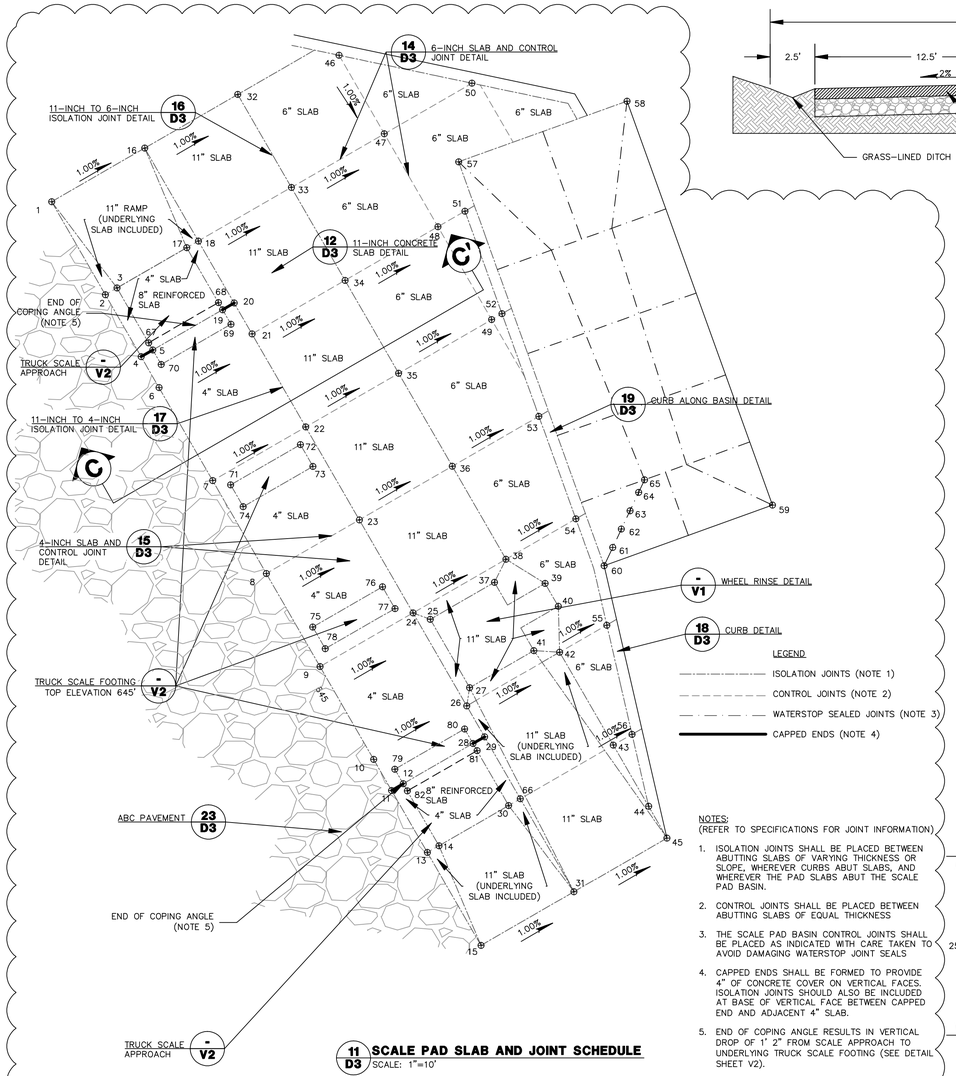
NO.	DATE	DESCRIPTION	BY
2	3-16-09	NOTICE OF CHANGE & AGGREGATE & SUBGRADE COMPACTION	
1	2-18-09	ISSUED FOR CONSTRUCTION	

ACCESS ROAD / ENTRANCE DETAILS I

ELECTRICAL/MECHANICAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: WMH	CHECKED BY: JKB
DESIGNED BY: WMH	APPROVED BY:
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: D3	OF: 19

DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\CONSTRUCTION\ACCESS - ABC AND SUBGRADE COMPACTION\C-14 DETAIL.DWG



11 D3 SCALE PAD SLAB AND JOINT SCHEDULE
SCALE: 1"=10'

NOTES:
(REFER TO SPECIFICATIONS FOR JOINT INFORMATION)

1. ISOLATION JOINTS SHALL BE PLACED BETWEEN ABUTTING SLABS OF VARYING THICKNESS OR SLOPE, WHEREVER CURBS ABUT SLABS, AND WHEREVER THE PAD SLABS ABUT THE SCALE PAD BASIN.
2. CONTROL JOINTS SHALL BE PLACED BETWEEN ABUTTING SLABS OF EQUAL THICKNESS
3. THE SCALE PAD BASIN CONTROL JOINTS SHALL BE PLACED AS INDICATED WITH CARE TAKEN TO AVOID DAMAGING WATERSTOP JOINT SEALS
4. CAPPED ENDS SHALL BE FORMED TO PROVIDE 4" OF CONCRETE COVER ON VERTICAL FACES. ISOLATION JOINTS SHOULD ALSO BE INCLUDED AT BASE OF VERTICAL FACE BETWEEN CAPPED END AND ADJACENT 4" SLAB.
5. END OF COPING ANGLE RESULTS IN VERTICAL DROP OF 1' 2" FROM SCALE APPROACH TO UNDERLYING TRUCK SCALE FOOTING (SEE DETAIL SHEET V2).
6. ALL SLABS SHALL BE 15-FT X 15-FT WHEREVER POSSIBLE

TOP OF CONCRETE SLAB POINTS

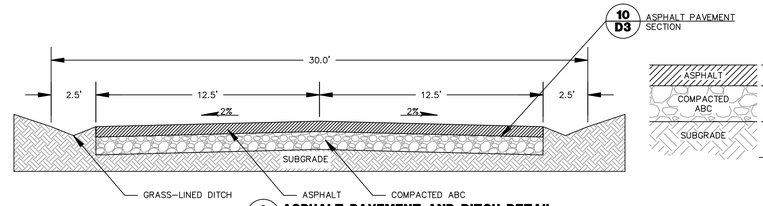
POINT	NORTHING	EASTING	ELEVATION	POINT	NORTHING	EASTING	ELEVATION
1	529040.34	1398779.85	645.57	34	529029.35	1398820.83	645.27
2	529027.35	1398787.35	645.57	35	529016.36	1398828.33	645.27
3	529028.28	1398788.97	646.74	36	529003.36	1398835.82	645.27
4	529018.68	1398792.35	645.57	37	528987.14	1398841.70	645.01
5	529019.62	1398793.97	646.74	38	528990.37	1398843.32	645.27
6	529014.35	1398794.85	645.57	39	528986.99	1398848.78	645.01
7	529001.36	1398802.34	645.57	40	528983.80	1398850.63	645.01
8	528988.37	1398809.84	645.57	41	528977.59	1398847.21	645.01
9	528975.38	1398817.34	645.57	42	528977.38	1398850.82	645.27
10	528962.38	1398824.83	645.57	43	528964.39	1398858.31	645.93
11	528958.05	1398827.33	645.57	44	528955.84	1398863.25	646.26
12	528958.99	1398828.96	646.74	45	528951.39	1398865.81	646.44
13	528949.39	1398832.33	645.57	46	529060.80	1398820.00	645.25
14	528950.33	1398833.95	646.74	47	529049.84	1398826.33	645.12
15	528936.40	1398839.83	646.74	48	529036.84	1398833.82	645.12
16	529047.84	1398792.85	645.42	49	529023.85	1398841.32	645.12
17	529033.91	1398798.72	646.74	50	529056.90	1398838.57	645.12
18	529034.84	1398800.34	645.42	51	529039.02	1398837.59	645.08
19	529025.24	1398803.72	646.74	52	529024.68	1398842.76	645.10
20	529026.18	1398805.34	645.42	53	529010.34	1398847.92	645.13
21	529021.85	1398807.84	645.42	54	528996.00	1398853.08	645.16
22	529008.86	1398815.34	645.42	55	528981.14	1398857.41	645.19
23	528995.87	1398822.83	645.42	56	528966.01	1398861.36	645.90
24	528982.87	1398830.33	645.42	57	529046.36	1398836.70	645.07
25	528981.97	1398832.74	645.01	58	529054.39	1398860.22	645.07
26	528969.88	1398837.83	645.42	59	528997.94	1398880.55	645.07
27	528972.42	1398838.25	645.01	60	528989.47	1398857.03	645.07
28	528964.61	1398838.70	646.74	61	528992.03	1398858.24	644.07
29	528965.55	1398840.32	645.42	62	528994.58	1398859.44	643.07
30	528955.95	1398843.70	646.74	63	528997.14	1398860.65	642.07
31	528943.90	1398852.82	646.59	64	528999.70	1398861.85	641.07
32	529055.33	1398805.84	645.27	65	529001.48	1398862.68	640.38
33	529042.34	1398813.33	645.27	66	528956.89	1398845.32	645.89

TRUCK SCALE FOOTING POINTS

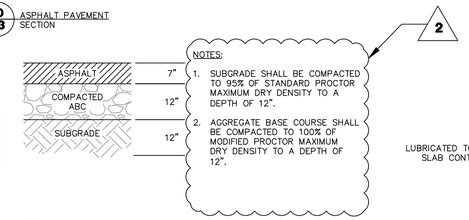
POINT	NORTHING	EASTING
67	529020.61	1398793.43
68	529026.23	1398803.17
69	529023.20	1398804.89
70	529017.58	1398795.16
71	529000.77	1398804.86
72	529006.37	1398814.59
73	529003.34	1398816.34
74	528997.74	1398806.61
75	528980.87	1398816.33
76	528986.46	1398826.08
77	528983.42	1398827.83
78	528977.85	1398818.08
79	528961.07	1398827.77
80	528966.66	1398837.49
81	528963.63	1398839.25
82	528958.05	1398829.52

*ALL TRUCK SCALE FOOTINGS HAVE TOP ELEVATIONS OF APPROXIMATELY 645.57' (BASED ON FOOTING AS-BUILT SURVEY BY DONNIE LAWRENCE & ASSOC. ON 4/21/09

3



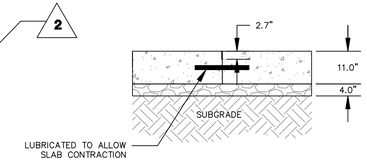
9 D3 ASPHALT PAVEMENT AND DITCH DETAIL
SCALE: 1"=4'



NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. AGGREGATE BASE COURSE SHALL BE COMPACTED TO 100% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".

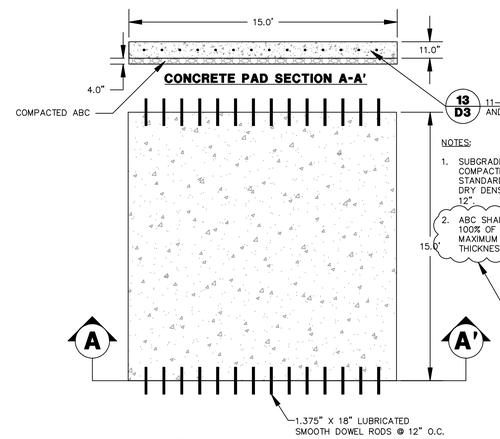
10 D3 ASPHALT PAVEMENT SECTION
SCALE: 1"=2'



NOTES:

1. DOWELS SHALL MEASURE 1-3/8" IN DIAMETER AND SHALL MEASURE 18" IN LENGTH
2. DOWELS SHALL BE SMOOTH AND LUBRICATED TO ALLOW SLAB CONTRACTION AND EXPANSION
3. SAWED OR CAST JOINTS SHALL EXTEND TO A DEPTH EQUAL TO 1/4 THE THICKNESS OF THE SLAB
4. JOINTS SHALL BE SEALED AS INDICATED IN THE SPECIFICATIONS

13 D3 11-INCH SLAB DOWEL AND JOINT DETAIL
SCALE: 1"=2'

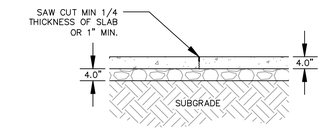


NOTES:

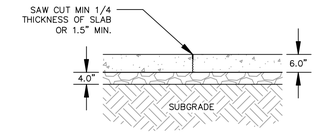
1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. ABC SHALL BE COMPACTED TO 100% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO THICKNESS SPECIFIED

2

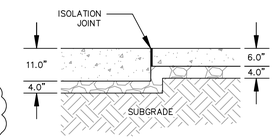
12 D3 11" CONCRETE SLAB DETAIL
SCALE: 1"=4'



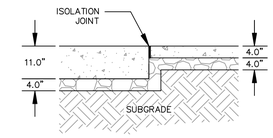
15 D3 4-INCH SLAB AND CONTROL JOINT DETAIL
SCALE: 1"=2'



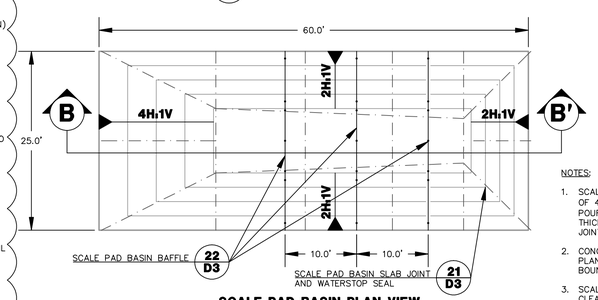
14 D3 6-INCH SLAB AND CONTROL JOINT DETAIL
SCALE: 1"=2'



16 D3 11-INCH TO 6-INCH ISOLATION JOINT DETAIL
SCALE: 1"=2'



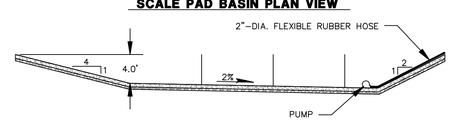
17 D3 11-INCH TO 4-INCH ISOLATION JOINT DETAIL
SCALE: 1"=2'



SCALE PAD BASIN PLAN VIEW

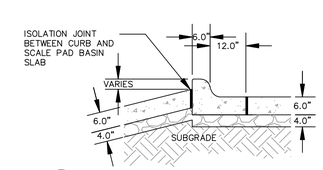
NOTES:

1. SCALE PAD BASIN SHALL CONSIST OF 4" COMPACTED ABC BASE, POURED CONCRETE SLABS OF 6" THICKNESS WITH WATERSTOPPED JOINTS
2. CONCRETE PADS SHALL BE PLANAR WITHIN JOINTED BOUNDARIES
3. SCALE PAD BASIN SHALL BE CLEARED OUT MONTHLY OR WHEN SEDIMENTATION EXCEEDS 6" THICKNESS
4. BAFFLES WILL BE SECURED TO BASIN SLABS WITH CORROSION RESISTANT WIRES STRUNG THROUGH ANCHORED BOLTS

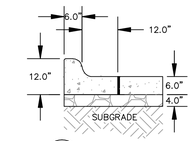


SCALE PAD BASIN SECTION B-B'

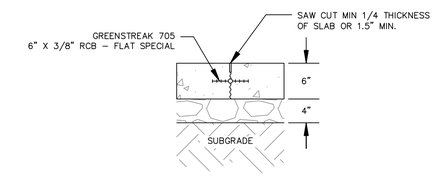
20 D3 SCALE PAD BASIN DETAILS
SCALE: 1"=10'



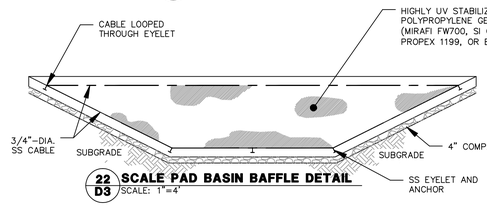
19 D3 CURB ALONG BASIN DETAIL
SCALE: 1" = 2'



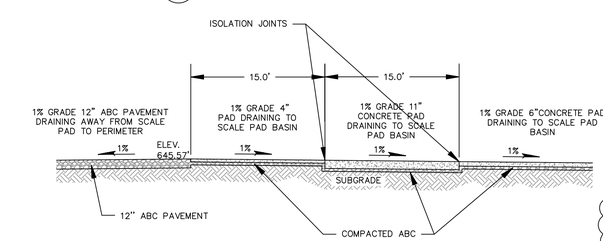
18 D3 CURB DETAIL
SCALE: 1" = 2'



21 D3 SCALE PAD BASIN SLAB JOINT AND WATERSTOP SEAL
SCALE: 1"=1'



22 D3 SCALE PAD BASIN BAFFLE DETAIL
SCALE: 1"=4'

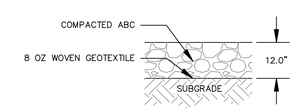


SCALE PAD SECTION C-C'
SCALE: 1"= 8'

NOTES:

1. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY TO A DEPTH OF 12".
2. ABC SHALL BE COMPACTED TO 100% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY TO THICKNESS SPECIFIED

2



23 D3 ABC PAVEMENT
1"=2'

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NORTH CAROLINA PROFESSIONAL SEAL 022134 ENGINEER

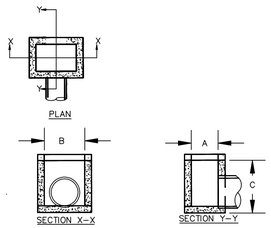
NO.	DATE	DESCRIPTION	BY
3	4-22-09	NOC 12: CONCRETE SLAB ELEVATIONS	
2	3-16-09	NOTICE OF CHANGE 6: AGGREGATE & SUBGRADE COMPACATION	
1	2-18-09	ISSUED FOR CONSTRUCTION	

ACCESS ROAD / ENTRANCE DETAILS I

ELECTRICAL/MECHANICAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: WMH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KZ
PROJECT NUMBER: 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: D3	OF: 19

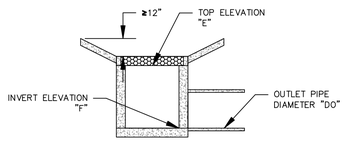
DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\CONSTRUCTION\NOC 12 - CONCRETE SLAB ELEVS\V-W DETAILS 3-4.DWG



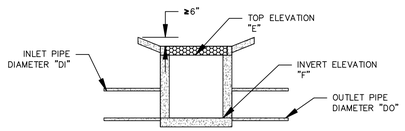
STORM WATER STRUCTURES SCHEDULE								
STRUCTURE NO.	DIMENSIONS			INLET GRATE OPEN AREA	INLET PIPE DIAMETER	OUTLET PIPE DIAMETER	ELEVATIONS	
	SPAN	WIDTH	DEPTH				TOP	INVERT
	A	B	C	OA	DI	DO	E	F
DI–1	4'	4'	4'	470 SQ. IN.	NONE	1–24" RCP	608.0'	604.0'
DI–2	4'	4'	4'	270 SQ. IN.	1–24" RCP	1–24" RCP	605.5'	601.5'
JB–1	4'	4'	TBD	NONE	1–24" RCP	1–18" CMP	TBD	TBD

NOTES:

1. GRATE AND BASIN STRUCTURE SHALL BE SUPPORTED TO ALLOW HS–20 LOADING
2. JB–1 TO BE FIELD LOCATED. EXISTING 18" DIAMETER CMP CULVERT SHALL BE FIELD FITTED TO JUNCTION BOX

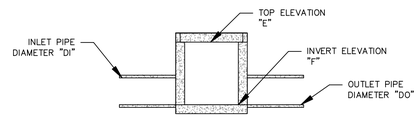


DI-1

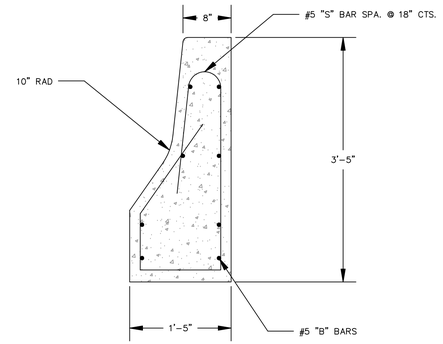


DI-2

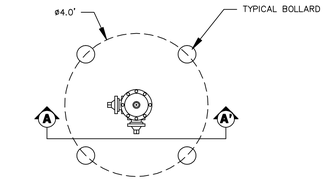
24/D4 DROP INLET DETAIL
N.T.S.



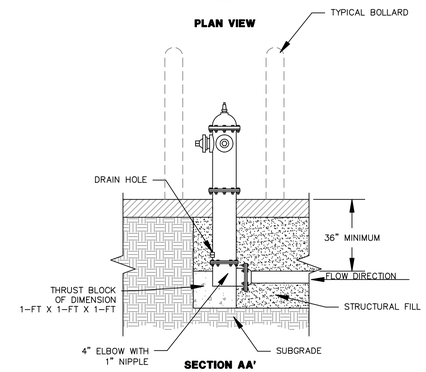
JB-1



31/D4 JERSEY BARRIER (TYP.) DETAIL
SCALE: 1"=1'

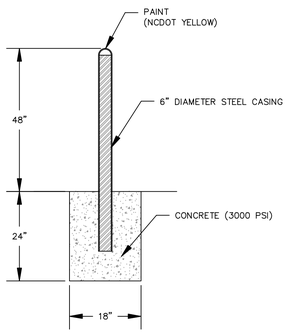


PLAN VIEW

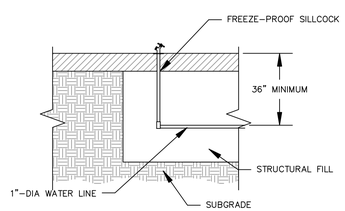


SECTION AA'

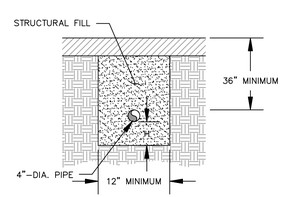
25/D4 DRY BARREL HYDRANT
N.T.S.



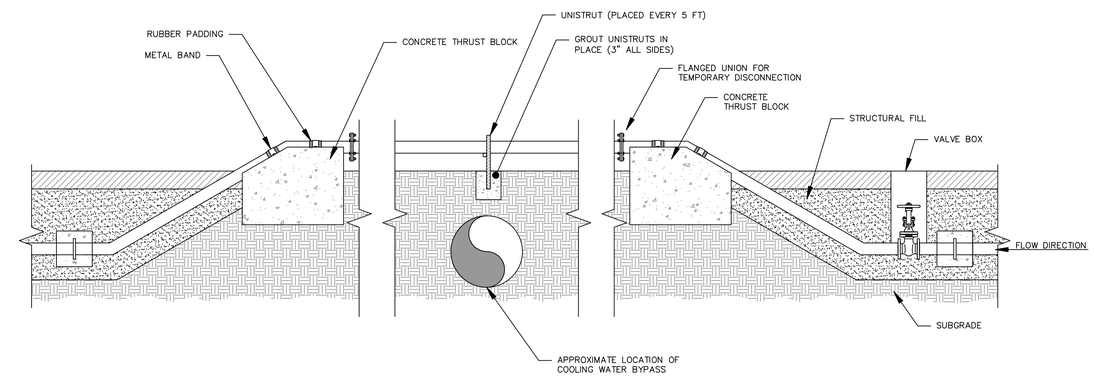
26/D4 BOLLARDS (TYPICAL)
N.T.S.



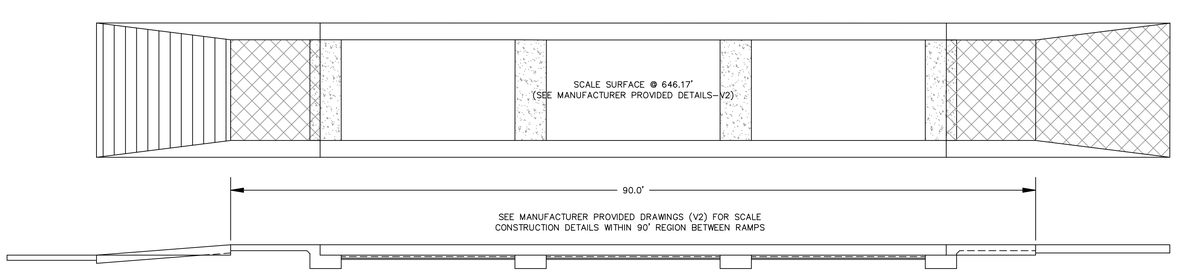
27/D4 1"-DIAMETER WATER LINE
N.T.S.



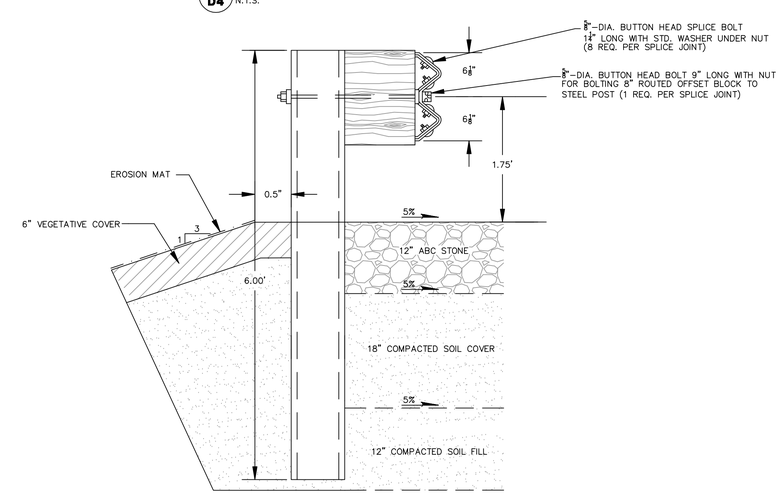
28/D4 WATER LINE TRENCH
N.T.S.



29/D4 ABOVE GROUND WATER LINE TRANSITION DETAIL
N.T.S.



30/D4 SCALE DETAIL
SCALE: 1"=8'



31/D4 GUARDRAIL
N.T.S.

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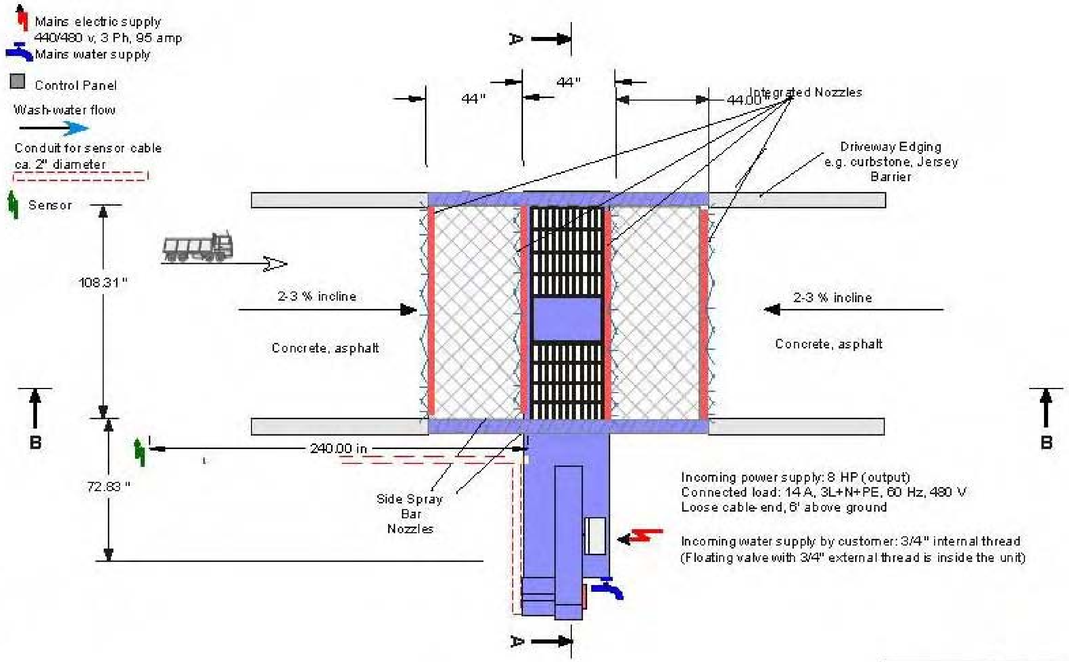
NO.	DATE	DESCRIPTION	BY
1	2–18–09	ISSUED FOR CONSTRUCTION	

ACCESS ROAD / ENTRANCE DETAILS II

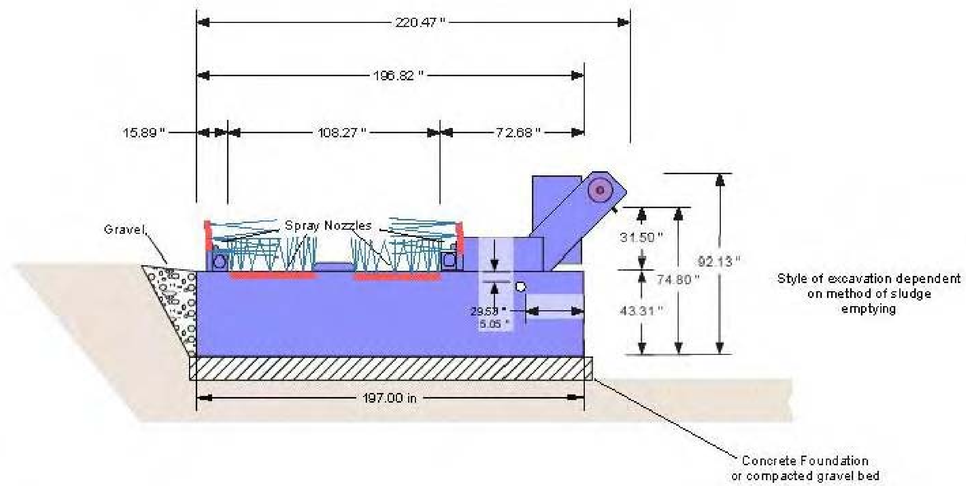
ELECTRICAL/MECHANICAL
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION

DRAWN BY: WMH	CHECKED BY: IKB
DESIGNED BY: WMH	APPROVED BY: KDP
PROJECT NUMBER 1356–06–825	
SCALE: AS SHOWN	DATE: 2–18–09
DRAWING: D4	OF: 19

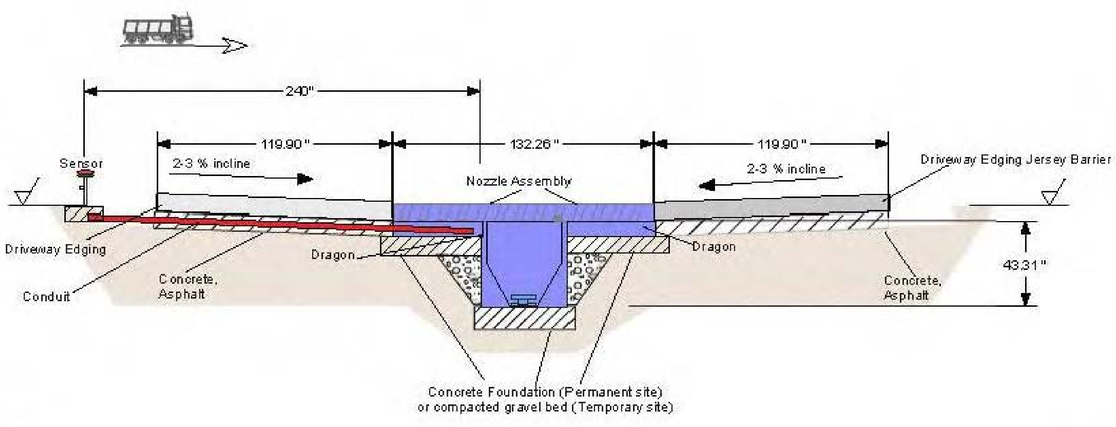
DRAWING PATH: G:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\F1\DETAILS 3-4.DWG



PLAN VIEW

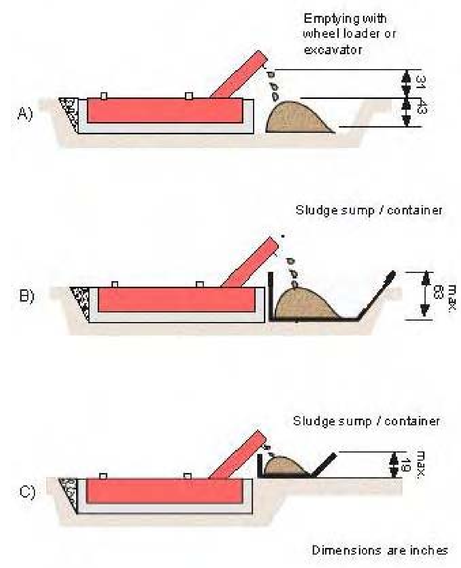


SECTION A - A



SECTION B - B

Sludge-emptying examples



Dimensions are inches

© copyright by FRUTIGER

	V 1.0	bl	1/3
MOBY DICK Dragon C			
Assembly Plan			

	V 1.0	bl	2/3
MOBY DICK Dragon C			
Assembly Plan			

	V 1.0	bl	3/3
MOBY DICK Dragon C			
Assembly Plan			

MOBY DICK Dragon Scraper Conveyor
Installation Dimensions With Concrete Sump
FRUTIGER

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NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

VENDOR SUPPLIED DRAWINGS
WHEEL RINSE

ELECTRICAL/MECHANICAL
DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: ---	CHECKED BY: JKB
DESIGNED BY: ---	APPROVED BY: KDP
PROJECT NUMBER 1356-06-825	
SCALE: N.T.S.	DATE: 2-18-09
DRAWING: V1	OF: 19

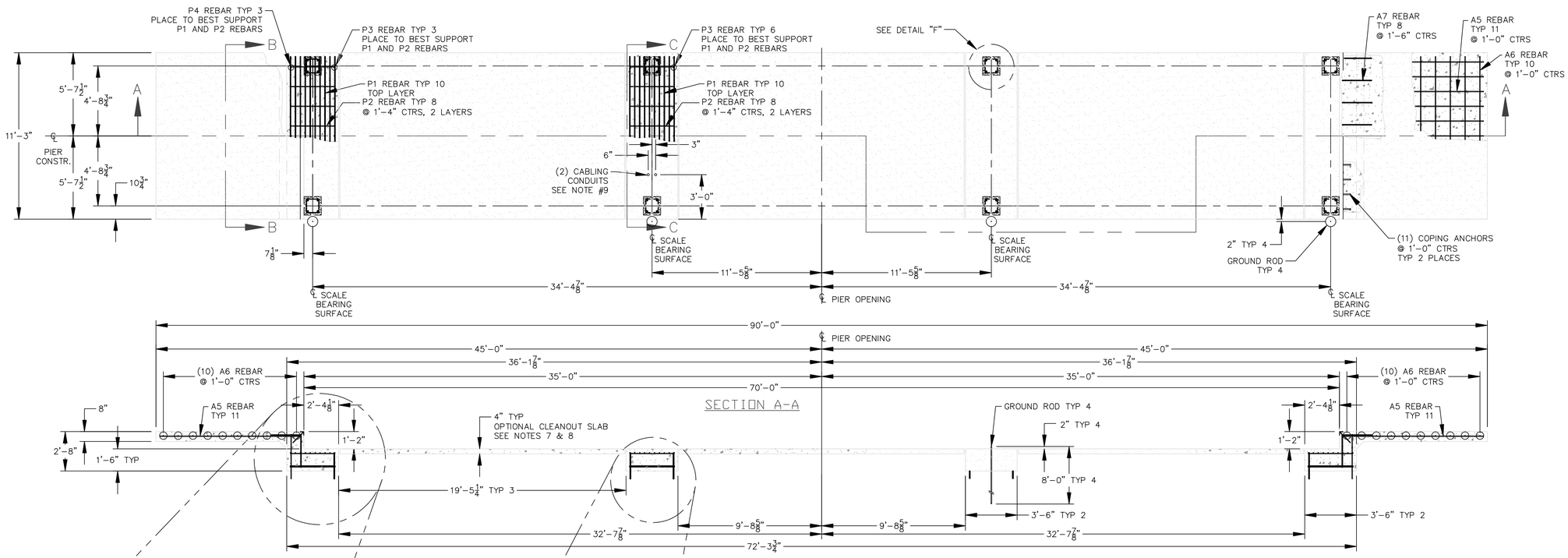
DRAWING PATH: G:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FEV\V1 VENDOR SUPPLIED DRAWING - WHEEL RINSE.DWG

NOTES:

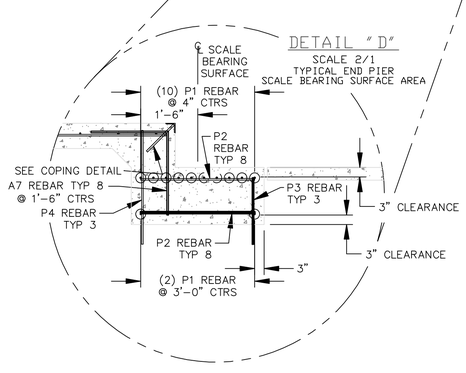
1. MINIMUM SOIL BEARING CAPACITY OF 3,000 POUNDS PER SQUARE FOOT. DUE TO VARYING SOIL CONDITIONS, WEIGH-TRONIX INC. WILL NOT BE RESPONSIBLE FOR STABILITY OF FOUNDATION. IF SOIL BASE IS INADEQUATE, THE CONTRACTOR MUST ADD EXTRA DEPTH, WIDTH AND REIN-FORCING TO THE FOUNDATION AS NECESSARY TO PROVIDE A STABLE BASE.
2. FOUNDATION MUST EXTEND A MINIMUM OF 6' BELOW THE FROST PENETRATION LINE.
3. PIER CONCRETE TO HAVE A 28-DAY COMPRESSIVE STRENGTH 3,500 POUNDS PER SQUARE INCH MINIMUM.
4. SCALE-BEARING SURFACE TO BE LEVEL AND ON THE SAME PLANE.
5. APPROACH-END WALLS ARE TO BE LEVEL AND ON THE SAME PLANE WITHIN 1/8".
6. PROVIDE LEVEL APPROACH SLABS AT EACH END OF SCALE AT LEAST THE WIDTH OF THE SCALE AND 1/2 THE TOTAL LENGTH OF THE SCALE. THE 10'-0" ADJACENT TO THE SCALE PER DETAILS BELOW. THE REMAINING APPROACH MAY SLOPE SLIGHTLY AWAY FROM THE SCALE AND MAY BE CON-STRUCTED OF ASPHALT OR GRAVEL RATHER THAN CONCRETE.
7. WHERE FOUNDATION CONSTRUCTION TECHNIQUES ALLOW, THE SURFACE OF THE OPTIONAL 4" THICK CONCRETE SLAB MUST BE SLOPED DOWN FROM THE LONGITUDINAL CENTERLINE TO EACH SIDE TO PREVENT DIRT AND WATER ACCUMULATION UNDER SCALE.
8. WITH CLEAN-OUT SLAB FLUSH WITH TOP OF PIERS AS SHOWN, NOMINAL SCALE CLEARANCE IS BMS 3 1/2" & BMC 4", IF LOCAL CODE OR CUSTOMER REQUIREMENTS DICTATE ADDI-TIONAL CLEARANCE, LOWER THE CLEAN-OUT SLABS SUFFI-CIENTLY TO PROVIDE REQUIRED CLEARANCES.
9. LOCATION OF CABLING CONDUIT, FOR CONNECTION OF INTER-FACE CABLE TO INDICATOR. RECOMMENDED USING 1" MIN. DIAMETER CONDUIT FOR CABLE PROTECTION FROM SCALE SUMMING BOX AREA INTO SCALE-HOUSE NEAR FINAL SCALE INDICATOR LOCATION. FOR LIGHTNING AND INDUCED CURRENT PROTECTION, THE CONDUIT MUST BE RIGID METAL CONDUIT. SECOND CONDUIT SHOWN IS FOR #4 AWG GROUND WIRE, THIS CONDUIT FROM LOCATION SHOWN TO SCALE HOUSE ELECTRICAL GROUND. MAINTAIN AT LEAST 6' OF DISTANCE BETWEEN DATA LINE CABLE CONDUIT AND THE GROUND WIRE CONDUIT.
10. LOCAL OR STATE REQUIREMENTS SUPERCEDE ANY OR ALL OF THE RECOMMENDATION AND DETAILS SHOWN OR DESCRIBED ON THIS DRAWING.

REVISIONS

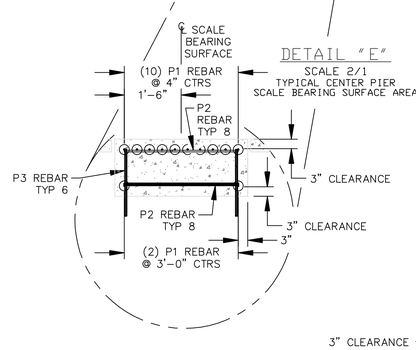
ZONE	LTR	DESCRIPTION	BY	DATE	APPR
	A	RELEASED FOR FIELD CONSTRUCTION	RSA	3 JUN 2004	LAL



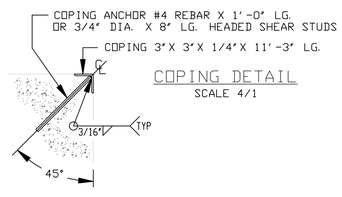
SECTION A-A



DETAIL "D"
SCALE 2/1
TYPICAL END PIER
SCALE BEARING SURFACE AREA

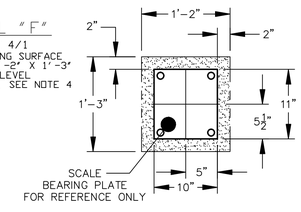


DETAIL "E"
SCALE 2/1
TYPICAL CENTER PIER
SCALE BEARING SURFACE AREA

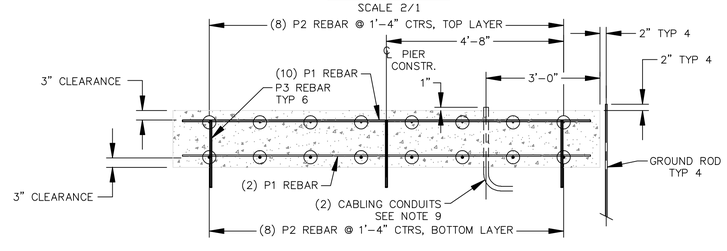


COPING DETAIL
SCALE 4/1

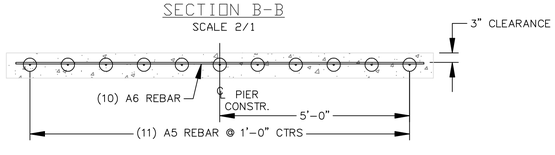
DETAIL "F"
SCALE 4/1
SCALE BEARING SURFACE
AREA SHOWN 1'-2" X 1'-3"
TO BE LEVEL
TYP 8 PLACES, SEE NOTE 4



SECTION C-C
SCALE 2/1



SECTION B-B
SCALE 2/1



NO. 4 GRADE 60 REBAR DATA CHART			
IDENT	LENGTH	SHAPE	QUANTITY
P1	10'-9"	STR	48
P2	3'-0"	STR	64
P3	1'-9"	STR	18
P4	3'-0"	STR	6
A5	9'-6"	STR	22
A6	10'-9"	STR	20
A7	4'-2"	2'-2" 1'-2"	16
COPING ANCHOR	1'-0"	STR	22

LIST OF RAW MATERIALS	
PIER & APPROACH CONCRETE (SEE NOTES 3 & 4)	14.9 CUBIC YARDS
NO. 4 GRADE 60 REBAR	1270'-2" (848.5 lbs)
GROUND RODS 5/8" DIA. X 8'-0" LONG STEEL COPPER OR ZINC PLATED, 4 PC'S	32'-0"
* COPING 3"X 3"X 1/4"X 11'-3" LONG 2 PC'S	22'-6"
OPTIONAL CONCRETE 4" THICK CLEANOUT SLABS	8.1 CUBIC YARDS

* MAY BE PURCHASED FROM WEIGH-TRONIX INC, NOT SUPPLIED WITH SCALE.

APPROVALS: SIGNATURE & DATE
DRAWN Bob Stzenhoefer 3 JUN 2004
MECH. ENG Leon Lammers 3 JUN 2004

TOLERANCE
FRACTIONS ± 1/8"
ANGLES ± 1°

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES, (XXX) DENOTES REFERENCE DATA, [mm] DENOTES METRIC DIMENSIONS

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DO NOT SCALE DRAWING

Avery Weigh-Tronix
1000 ARMSTRONG DRIVE
FAIRMONT, MN 56031
USA

SHALLOW PIER
CONSTRUCTION DRAWING,
BMS/BMC 7011-100T

SIZE D | DRAWING NO. 56389-0011 | REV. A
PLOT SCALE 1"= 3'-9" | DCN 18917 | SHEET 1 OF 1

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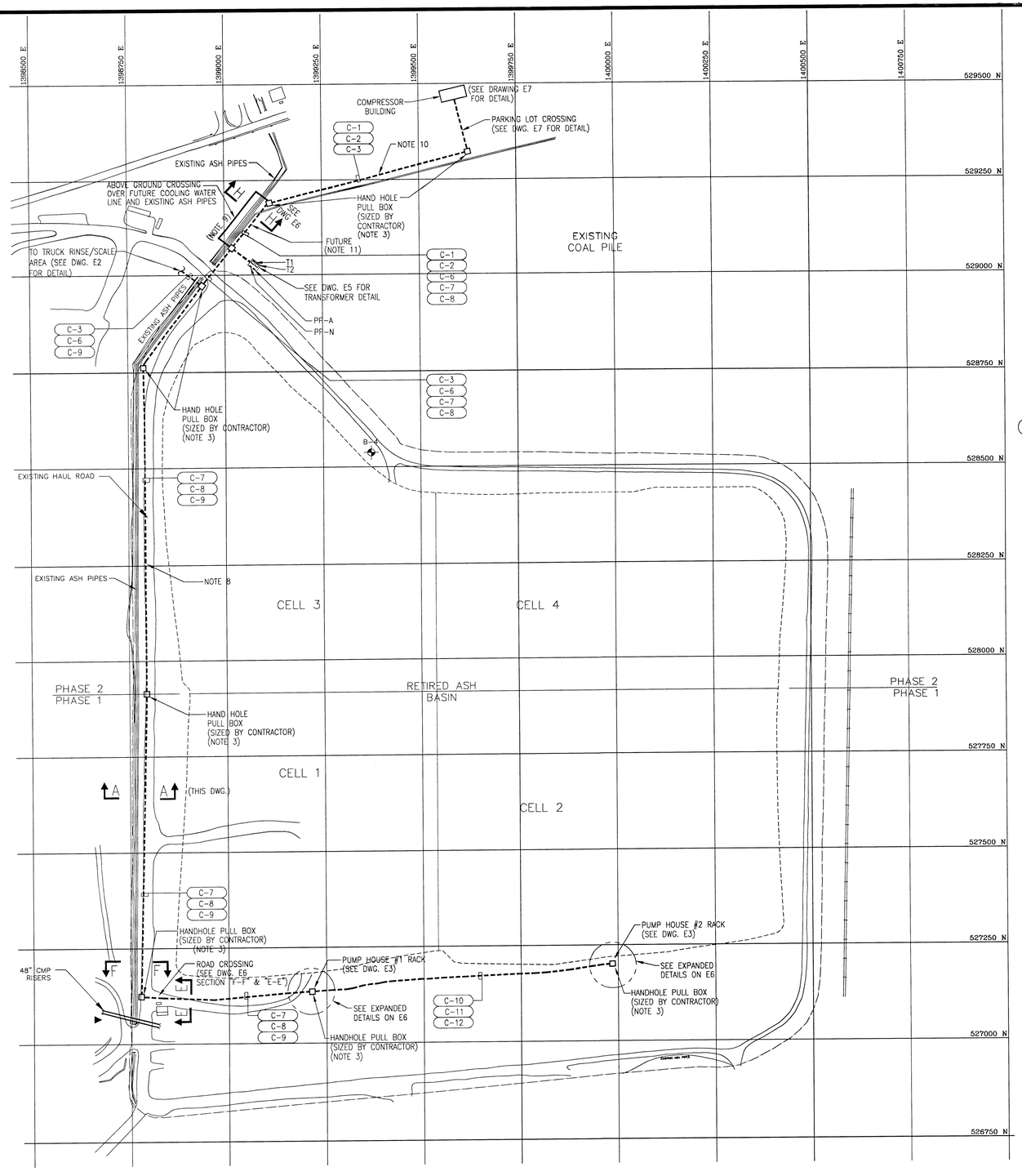
NO.	DATE	DESCRIPTION	BY
1	2-18-09	ISSUED FOR CONSTRUCTION	

VENDOR SUPPLIED DRAWING
TRUCK SCALE

ELECTRICAL/MECHANICAL
DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: ---	CHECKED BY: IKB
DESIGNED BY: ---	APPROVED BY: KTZ
PROJECT NUMBER 1356-06-825	
SCALE: AS SHOWN	DATE: 2-18-09
DRAWING: V2	OF: 19

DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\ELECTRICAL-MECHANICAL\FG\V2 VENDOR SUPPLIED DRAWING - TRUCK SCALE.DWG



NOTES:

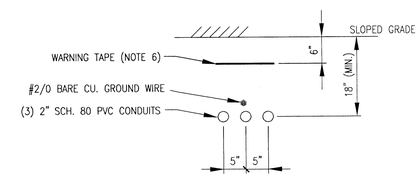
1. ALL INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. CONTRACTOR SHALL DETERMINE ACTUAL CONDUIT/GROUND STUB-UP LOCATIONS.
4. SPARE 2" CONDUIT FOR FUTURE CONTROL/ALARM WIRING INSTALLATION.
5. COORDINATE FIBER OPTIC INSTALLATION/CONNECTIONS WITH OWNER.
6. CONTRACTOR SHALL INSTALL A "CAUTION: BURIED CABLE" WARNING TAPE OVER EACH BURIED CONDUIT BUNDLE OR CONCRETE DUCT BANK.
7. TRENCHING FOR CONDUIT RUN BETWEEN COMPRESSOR BUILDING AND TRANSFORMER SHALL BE CLEARED BY HYDROBLASTING. (APPROX. 2 1/2' DEEP)
8. REFER TO S&ME DWG. (HOLD) FOR EXACT TRENCH LOCATION FOR CONDUIT RUN.
9. CONDUITS C-1, C-2 & C-3 BETWEEN THESE HANDHOLES SHALL BE RUN ABOVE GROUND. THESE CONDUITS SHALL BE RIGID GALVANIZED STEEL BETWEEN THE HANDHOLES AND SHALL BE SUPPORTED FROM THE EXISTING ASH PIPE SUPPORTS (ON THE NORTH SIDE). IF PIPE SUPPORTS ARE GREATER THAN 16 FEET APART, INTERMEDIATE SUPPORTS SHALL BE INSTALLED TO MAINTAIN A MAXIMUM CONDUIT SUPPORT SPACING OF 16 FEET.
10. CONDUIT RUNS NEED TO BE NORTH OF SLUICE LINES AND EXISTING FENCE.
11. AFTER INSTALLATION OF THE COOLING WATER LINE, ABOVE GROUND CONDUITS C-1, C-2, & C-3 SHALL BE MOVED UNDERGROUND. WIRING IN CONDUITS C-1 & C-2 SHALL BE DISCONNECTED AT THE TRANSFORMER, PULLED BACK TO THE HAND HOLE AND RE-PULLED THROUGH THE NEW UNDERGROUND CONDUIT. FIBER OPTIC CABLE IN CONDUIT C-3 SHALL BE EITHER PULLED BACK OR SPLICED IN THE HAND HOLE(S) AS DIRECTED BY THE OWNER.
12. CONDUITS THAT RUN ABOVE GROUND FROM THE HAND HOLES TO THE ASH PIPE SUPPORT SHALL BE SUPPORTED AT 16 FOOT INTERVALS.

REFERENCE DRAWINGS:

E2	TRUCK SCALE AREA POWER PLAN
E3	PUMP HOUSE & TRUCK SCALE EQUIPMENT RACK LAYOUTS
E4	PANEL SCHEDULES
E5	TRANSFORMER DETAIL
E6	UG CONDUIT ROAD CROSSING DETAIL
E7	COMPRESSOR ROOM POWER PLAN

CONDUIT AND CABLE SCHEDULE

CONDUIT NUMBER	CONDUIT SIZE	CABLE DESCRIPTION	FROM	TO
C-1	2"	3-#1/0, 1#6 GND	MCC-CFG, COMPT. 2J	T-1
C-2	2"	3-#1/0, 1#6 GND	MCC-CFG, COMPT. 6H	T-2
C-3	2"	FIBER OPTIC (NOTE 5)	COMP. RM. COMM. PNL.	SCALE HOUSE
C-6	2"	3-#1/0, 1#6 GND	PP-N	PP-TSA-1
C-7	2"	3-#2/0, 1#6 GND	PP-N	ATS-1
C-8	2"	3-#2/0, 1#6 GND	PP-A	ATS-1
C-9	2"	SPARE (NOTE 4)	ATS-1	SCALE HOUSE
C-10	2"	3-#1/0, 1#6 GND	ATS-1	ATS-2
C-11	2"	3-#1/0, 1#6 GND	ATS-1	ATS-2
C-12	2"	SPARE (NOTE 4)	ATS-1	ATS-2



SECTION "A-A"
TYPICAL U/G CONDUITS
3/4"=1'0"

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NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	
D	10/28/08	BID ISSUE - NOT FOR CONSTRUCTION	JMW
C	10/21/08	ADDED CLIENT COMMENTS - ISSUED FOR APPROVAL	JMW
B	9/26/08	INCORPORATE CLIENT COMMENTS	JMW
A	8/29/08	ISSUED FOR COMMENT	JMW

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www.perigonengineering.com

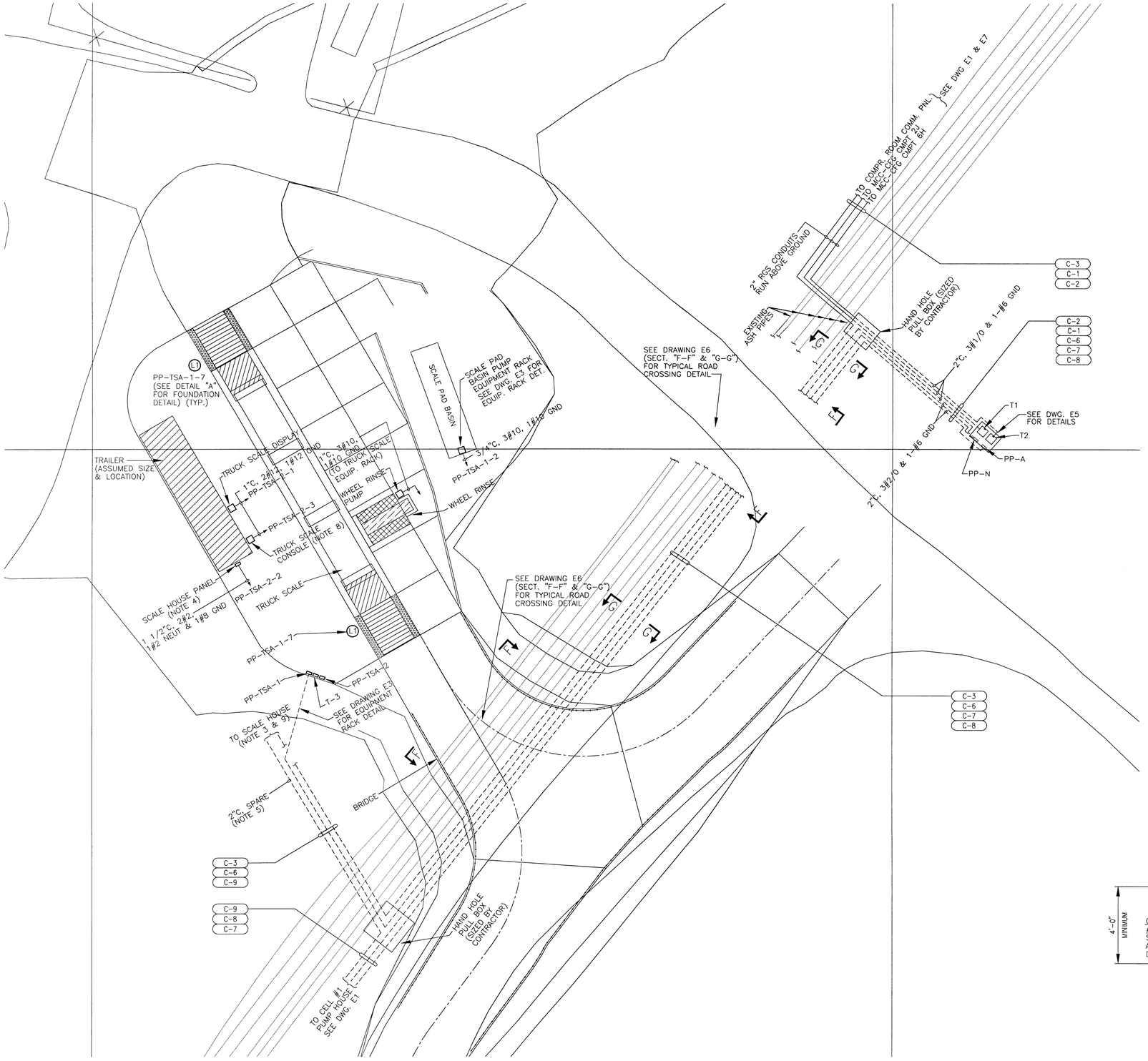
CURRENT PROJECT # 109417 FILENAME: 9417-E-001
CURRENT MISC DETAIL # 5440 PLOT FACTOR: 1
PREVIOUS PROJECT # N/A SHEET SIZE: 24x36

ASH LANDFILL OVERALL POWER PLAN

PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KC	CHECKED BY: DAB
DESIGNED BY: JMW	APPROVED BY: DAB
PROJECT NUMBER: 1356-06-825	
SCALE: 1" = 150'	DATE: 2/6/2009
DRAWING: E1	OF: 7

DRAWING PATH: L:\PROJECTS\PROJECTS\109417\CAD\109417-E-001.DWG



POWER PLAN
SCALE: 1/16" = 1'-0"

NOTES:

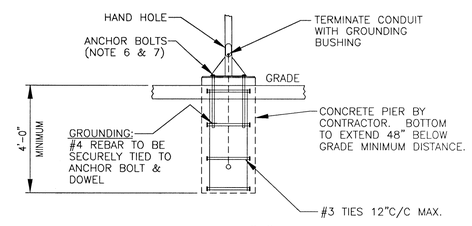
1. ALL INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. COORDINATE WITH OWNER FOR TERMINATION OF COMMUNICATION CONDUITS INSIDE SCALE HOUSE.
4. SCALE HOUSE PANEL LOCATED ON EXTERIOR OF SCALE HOUSE (TRAILER). PANEL FURNISHED WITH TRAILER.
5. SPARE CONDUITS PROVIDED FOR COMMUNICATION CABLES. COORDINATE WITH OWNER FOR INSTALLATION AND CONDUIT FILL.
6. REFER TO POLE VENDOR SPECIFICATIONS FOR ANCHOR BOLT AND BASEPLATE DIMENSIONS.
7. BASE PLATE TEMPLATE, ANCHOR BOLTS AND NUTS CAN BE SHIPPED BEFORE POLE, TO ALLOW PIER TO BE POURED BEFORE POLE IS NEEDED.
8. TRUCK SCALE CONSOLE LOCATED INSIDE SCALE HOUSE.
9. CONDUIT ROUTING LOCATION SHOWN IS APPROXIMATE. CONTRACTOR TO DETERMINE ACTUAL ROUTING IN FIELD.

LEGEND:

(L1) OUTDOOR, 400W METAL HALIDE, 480V POLE MOUNT, WITH PHOTOCELL. LITHONIA CHMD SERIES OR APPROVED EQUAL. FIXTURE TO INCLUDE A COMMERCIAL QUALITY HOT ROLLED CARBON STEEL SQUARE POLE, DARK BRONZE FINISH, 6" SQUARE BY 25' LONG, LITHONIA SSS SERIES OR APPROVED EQUAL.

REFERENCE DRAWINGS:

E1	OVERALL POWER PLAN
E3	PUMP HOUSE & TRUCK SCALE EQUIPMENT RACK LAYOUT
E4	PANEL SCHEDULES
E5	TRANSFORMER DETAIL
E6	UG CONDUIT ROAD CROSSING DETAIL
E7	COMPRESSOR ROOM POWER PLAN



DETAIL "A"
SCALE: 3/8" = 1'-0"
LIGHT POLE FOUNDATION

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022003 DOUGLAS A. BAUGOM 2/12/09

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CURRENT PROJECT # 109417 FILENAME: 9417-E-002
CURRENT MISC DETAIL # 5440 PLOT FACTOR: 1
PREVIOUS PROJECT # N/A SHEET SIZE: 24x36

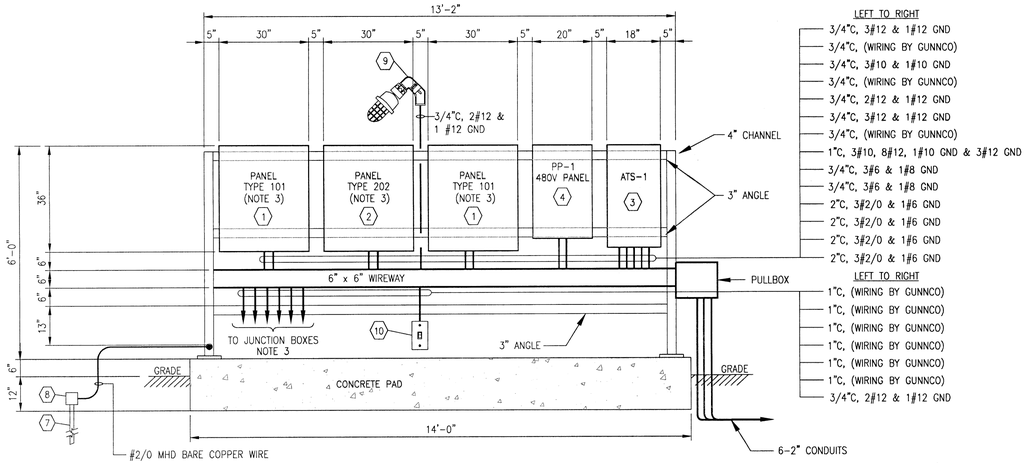
NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	JAW
G	10/26/08	BID ISSUE – NOT FOR CONSTRUCTION	JAW
C	10/21/08	ADDED CLIENT COMMENTS – ISSUED FOR APPROVAL	JAW
B	9/26/08	INCORPORATE CLIENT COMMENTS	
A	8/29/08	ISSUED FOR COMMENT	

TRUCK SCALE AREA POWER PLAN

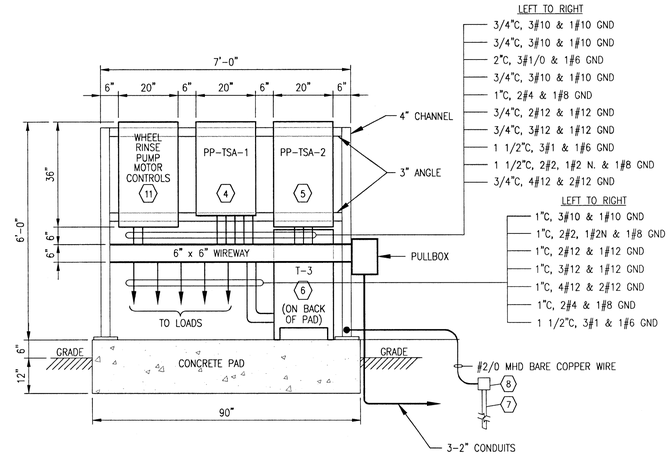
PHASE I RAB ASH LANDFILL
DUKE ENERGY – ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KC	CHECKED BY: DAB
DESIGNED BY: SWM	APPROVED BY: DAB
PROJECT NUMBER 1356-06-825	
SCALE: AS NOTED	DATE: 08/14/08
DRAWING: E2	OF: 7

DRAWING PATH: L:\ENGINEERING\PROJECTS\PHASE I ASH LANDFILL\9417-E-002.DWG



PUMP HOUSE #1
RACK LAYOUT
SCALE: 1/2" = 1'-0"
(SEE DWG. E1)



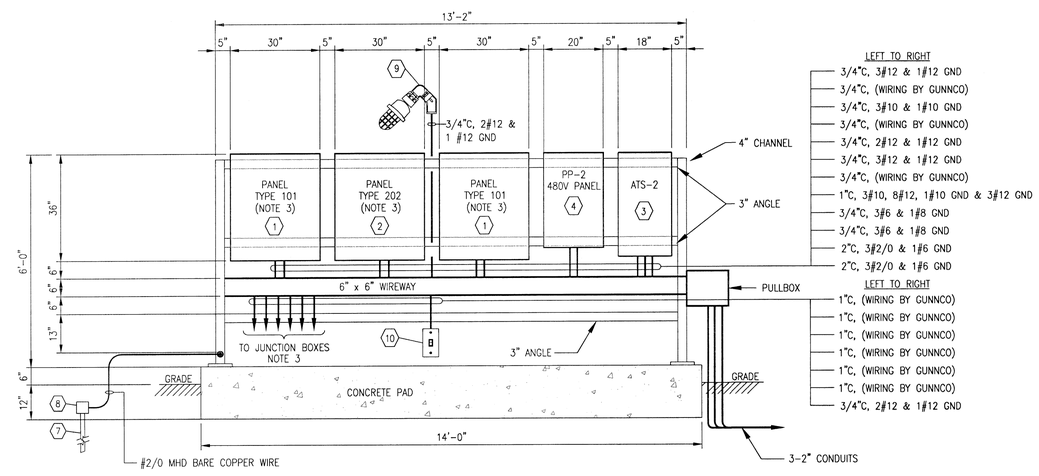
TRUCK SCALE EQUIPMENT RACK LAYOUT
SCALE: 1/2" = 1'-0"

NOTES:

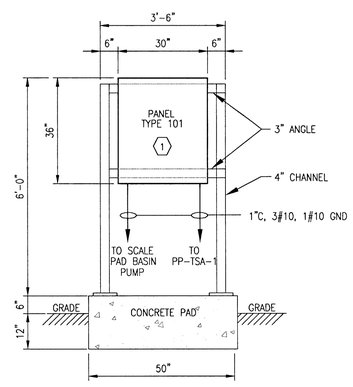
1. ALL INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. PUMP CONTROL PANEL AND PUMP CONNECTIONS TO BE INSTALLED BY PUMP VENDOR.
4. SEE DRAWING E4 FOR PANEL SCHEDULES.
5. ALL GROUNDS OF DEVICES MOUNTED ON PANEL SHALL BE RUN TO A COMMON TERMINATION POINT WHICH IS TIED TO GROUND ROD.
6. ALL RACK METAL SHALL BE STAINLESS STEEL.
7. ALL CONDUIT CONNECTIONS SHALL BE MADE WITH WATERPROOF INSULATED THROAT HUBS.
8. ALL EXPOSED CONDUIT SHALL BE RGS UNLESS INDICATED OTHERWISE.
9. ALL COMPONENT AND JUNCTION BOXES SHALL BE RATED NEMA 3R OR BETTER.
10. ABOVE GROUND CONDUIT SHALL BE RGS. THE JUNCTION BETWEEN RGS AND PVC SHALL BE MADE A MINIMUM OF 6" BELOW GRADE.
11. ALL CONDUIT RUN UNDERGROUND SHALL BE SCHEDULE 80 PVC.
12. ALL WIRING SHALL BE STRANDED COPPER, THWN 75° 600V.

REFERENCE DRAWINGS:

E1	OVERALL POWER PLAN
E2	TRUCK SCALE AREA POWER PLAN
E4	PANEL SCHEDULES
E5	TRANSFORMER DETAIL
E6	UG CONDUIT ROAD CROSSING DETAIL
E7	COMPRESSOR ROOM POWER PLAN



PUMP HOUSE #2
RACK LAYOUT
SCALE: 1/2" = 1'-0"
(SEE DWG. E1)



SCALE BASIN PUMP EQUIPMENT RACK
SCALE: 1/2" = 1'-0"

BILL OF MATERIALS

ITEM	QTY.	DESCRIPTION
1	5	GUNNCO SIDESLOPER 101 SERIES CONTROL PANEL (NOTE 3)
2	2	GUNNCO SIDESLOPER 202 SERIES CONTROL PANEL (NOTE 3)
3	2	70 A AUTOMATIC TRANSFER SWITCH WITH AUXILIARY CONTACTS AND EXTERNAL LED LIGHTS FOR SWITCH POSTITION INDICATION (GREEN=NORMAL, RED=ALTERNATE), NEMA 3R ENCLOSURE. ASCO SERIES D-300 OR APPROVED EQUAL.
4	3	100A, 480V, 3Ø POWER PANEL IN NEMA 3R ENCLOSURE (NOTE 4)
5	1	225A, 240V, 2Ø POWER PANEL IN NEMA 3R ENCLOSURE (NOTE 4)
6	1	480V-120/240V, 25KVA TRANSFORMER SINGLE PHASE, DRY TYPE, NEMA 3R ENCLOSURE
7	3	3/4" DIA. X 10' COPPER CLAD STEEL GROUND ROD
8	3	CAPWELD TYPE "GR" CONNECTOR #2/0 WIRE TO GROUND ROD
9	2	70W HPS OUTDOOR FIXTURE 25' STANCHION MOUNT 480V, W/GLOBE & GUARD CROUSE HINDS VMV SERIES OR EQUAL
10	2	SNAP SWITCH, 2P, 480V, 15A IN A NEMA 3R ENCLOSURE
11	1	WHEEL RINSE PUMP CONTROL PANEL (BY VENDOR)

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CURRENT PROJECT # 109417 FILENAME: 9417-E-003
CURRENT MISC DETAIL # 5440 PLOT FACTOR: 1
PREVIOUS PROJECT # N/A SHEET SIZE: 24x36

NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	JMM
D	10/28/08	BID ISSUE - NOT FOR CONSTRUCTION	JMM
C	10/21/08	ISSUED FOR APPROVAL	JMM
B	9/29/08	INCORPORATE CLIENT COMMENTS	
A	9/29/08	ISSUED FOR COMMENT	

PUMP HOUSE & TRUCK SCALE
EQUIPMENT RACK LAYOUTS

PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KC	CHECKED BY: DAB
DESIGNED BY: SWM	APPROVED BY: DAB
PROJECT NUMBER: 1356-06-825	
SCALE: AS NOTED	DATE: 07/14/08
DRAWING: E3	OF: 7

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NORTH CAROLINA PROFESSIONAL SEAL 022003 ENGINEER DOUGLAS A. BAUCOM 2/12/09

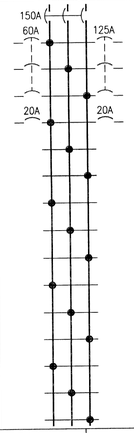
DRAWING: P:\PROJECTS\ENGINEERING\PROJECTS\PHASE I ALLEN\109417-E-003.dwg

PANEL NO. PP-N (NOTE 3)

FED FROM: MCC-CFG COMPT. 2J VIA TRANSFORMER T1 | LOCATION: TRANSFORMER EQUIPMENT RACK

SERVICE: 480V, 3ø, 3 WIRE | MAINS: 250 AMPS WITH 150A MAIN BREAKER | CABINET: SURFACE MOUNTED

IDENTIFICATION	LOAD	NO.	NO.	LOAD	IDENTIFICATION
PP-1 & PP-2	7973	1	2	4585	PANEL PP-TSA-1
	7973	3	4	17,085	
	7973	5	6	16,685	
SPARE		7	8		SPARE
SPACE		9	10		SPACE
SPACE		11	12		SPACE
SPACE		13	14		SPACE
SPACE		15	16		SPACE
SPACE		17	18		SPACE
SPACE		19	20		SPACE
SPACE		21	22		SPACE
SPACE		23	24		SPACE
SPACE		25	26		SPACE
SPACE		27	28		SPACE
SPACE		29	30		SPACE



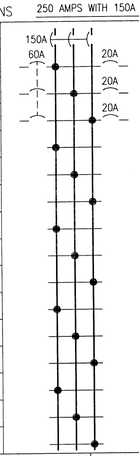
CONN. LOAD: 62,274 | ØA 12,558 | ØB 25,058 | ØC 24,658

PANEL NO. PP-A (NOTE 3)

FED FROM: MCC-CFG COMPT. 6H VIA TRANSFORMER T2 | LOCATION: TRANSFORMER EQUIPMENT RACK

SERVICE: 480V, 3ø, 3 WIRE | MAINS: 250 AMPS WITH 150A MAIN BREAKER | CABINET: SURFACE MOUNTED

IDENTIFICATION	LOAD	NO.	NO.	LOAD	IDENTIFICATION
PP-1 & PP-2	7973	1	2		SPARE
	7973	3	4		SPARE
	7973	5	6		SPARE
SPACE		7	8		SPACE
SPACE		9	10		SPACE
SPACE		11	12		SPACE
SPACE		13	14		SPACE
SPACE		15	16		SPACE
SPACE		17	18		SPACE
SPACE		19	20		SPACE
SPACE		21	22		SPACE
SPACE		23	24		SPACE
SPACE		25	26		SPACE
SPACE		27	28		SPACE
SPACE		29	30		SPACE



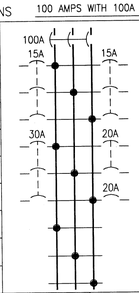
CONN. LOAD: 23,919 | ØA 7973 | ØB 7973 | ØC 7973

PANEL NO. PP-1 (NOTE 4)

FED FROM: ATS-1 | LOCATION: CELL #1 PUMP HOUSE

SERVICE: 480V, 3ø, 3 WIRE | MAINS: 100 AMPS WITH 100A MAIN BREAKER | CABINET: SURFACE MOUNTED

IDENTIFICATION	LOAD	NO.	NO.	LOAD	IDENTIFICATION
PUMP CONTROL PANEL 101 #1	305	1	2	305	PUMP CONTROL PANEL 101 #2
	305	3	4	305	
	305	5	6	305	
PUMP CONTROL PANEL 202	3353	7	8	35	EQ. RACK LIGHT
	3353	9	10	35	
	3353	11	12		SPARE
SPACE		13	14		SPACE
SPACE		15	16		SPACE
SPACE		17	18		SPACE



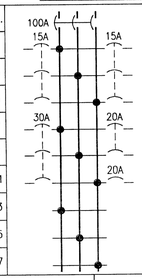
CONN. LOAD: 11,959 | ØA 3998 | ØB 3998 | ØC 3963

PANEL NO. PP-2 (NOTE 4)

FED FROM: ATS-2 | LOCATION: CELL #2 PUMP HOUSE

SERVICE: 480V, 3ø, 3 WIRE | MAINS: 100 AMPS WITH 100A MAIN BREAKER | CABINET: SURFACE MOUNTED

IDENTIFICATION	LOAD	NO.	NO.	LOAD	IDENTIFICATION
PUMP CONTROL PANEL 101 #1	305	1	2	305	PUMP CONTROL PANEL 101 #2
	305	3	4	305	
	305	5	6	305	
PUMP CONTROL PANEL 202	3353	7	8	35	EQ. RACK LIGHT
	3353	9	10	35	
	3353	11	12		SPARE
SPACE		13	14		SPACE
SPACE		15	16		SPACE
SPACE		17	18		SPACE



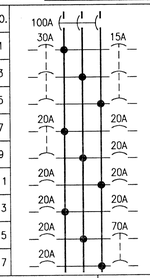
CONN. LOAD: 11,959 | ØA 3998 | ØB 3998 | ØC 3963

PANEL NO. PP-TSA-1 (NOTE 5)

FED FROM: PP-N CKT #2 | LOCATION: TRUCK SCALE AREA

SERVICE: 480V, 3ø, 3 WIRE | MAINS: 100 AMPS WITH 100A MAIN BREAKER | CABINET: SURFACE MOUNTED

IDENTIFICATION	LOAD	NO.	NO.	LOAD	IDENTIFICATION
WHEEL RINSE PUMP MOTOR STARTER	3880	1	2	305	PANEL 101- SCALE PAD BASIN PUMP
	3880	3	4	305	
	3880	5	6	305	
AREA LIGHTING	400	7	8		SPARE
	400	9	10		SPARE
SPARE		11	12		SPARE
SPARE		13	14		SPARE
SPARE		15	16	12,500	TRANSFORMER T-3 (25kVA)
SPARE		17	18	12,500	



CONN. LOAD: 38,355 | ØA 4585 | ØB 17,085 | ØC 16,685

PANEL NO. PP-TSA-2 (NOTE 6)

FED FROM: PANEL PP-TSA-1 CKT#16 VIA TRANSFORMER T-3 | LOCATION: TRUCK SCALE AREA

SERVICE: 240V, 1ø, 3 WIRE | MAINS: 225 AMPS WITH 125A MAIN BREAKER | CABINET: SURFACE MOUNTED

IDENTIFICATION	LOAD	NO.	NO.	LOAD	IDENTIFICATION
TRUCK SCALE EXTERIOR DISPLAY	360	1	2	12,000	TRUCK SCALE HOUSE PANEL
TRUCK SCALE CONSOLE	360	3	4	12,000	
SPARE		5	6		SPARE
SPARE		7	8		SPARE
SPARE		9	10		SPARE
SPACE		11	12		SPACE
SPACE		13	14		SPACE
SPACE		15	16		SPACE
SPACE		17	18		SPACE
SPACE		19	20		SPACE
SPACE		21	22		SPACE
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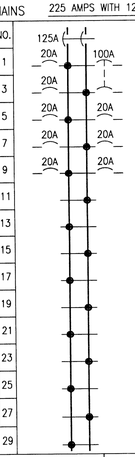
SPACE		27	28		SPACE
SPACE		29	30		SPACE



CONN. LOAD: 24,720 | ØA 12,360 | ØB 12,360

NOTES:

1. ALL INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. PANELS PP-N AND PP-A SHALL BE A 480V, 3Ø, 30 CIRCUITS WITH A 150A MAIN CIRCUIT BREAKER. SQUARE D "NF" SERIES OR APPROVED EQUAL. NEMA 3R ENCLOSURE.
4. PANELS PP-1 AND PP-2 SHALL BE A 480V, 3Ø, 18 CIRCUITS WITH A 100A MAIN CIRCUIT BREAKER. SQUARE D "NF" SERIES OR APPROVED EQUAL. NEMA 3R ENCLOSURE.
5. PANEL PP-TSA-1 SHALL BE A 480V, 3Ø, 18 CIRCUITS WITH A 100A MAIN CIRCUIT BREAKER. SQUARE D "NF" SERIES OR APPROVED EQUAL. NEMA 3R ENCLOSURE.
6. PANEL PP-TSA-2 SHALL BE A 240V, 1Ø, 30 CIRCUITS WITH A 125A MAIN CIRCUIT BREAKER. SQUARE D "NQOD" SERIES OR APPROVED EQUAL. NEMA 3R ENCLOSURE.

REFERENCE DRAWINGS:

E1 OVERALL POWER PLAN
E2 TRUCK SCALE AREA POWER PLAN
E3 PUMP HOUSE & TRUCK SCALE EQUIPMENT RACK LAYOUT
E5 TRANSFORMER DETAIL
E6 UG CONDUIT ROAD CROSSING DETAIL
E7 COMPRESSOR ROOM POWER PLAN

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22003 DOUGLAS A. BAUCOM 2/12/09

NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	JMW
D	10/28/08	BID ISSUE – NOT FOR CONSTRUCTION	JMW
C	10/21/08	ISSUED FOR APPROVAL	JMW
B	9/26/08	INCORPORATE CLIENT COMMENTS	
A	8/29/08	ISSUED FOR COMMENT	

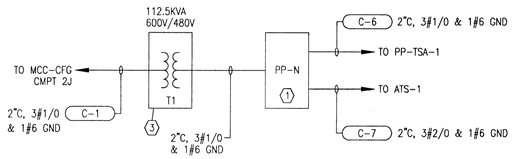
PERIGON — Prepared with AutoCAD® ic2004 by
CHARLOTTE 931 Industrial Drive, Matthews, NC 28105 704/366-3000 www.perigonpower.com
CURRENT PROJECT # 109417 FILENAME: 9417-E-004
CURRENT MISC DIGAL # 5410 PLOT FACTOR: 1
PREVIOUS PROJECT # N/A SHEET SIZE: 24x36

PANEL SCHEDULES

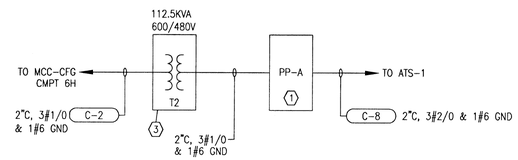
PHASE I RAB ASH LANDFILL
DUKE ENERGY – ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: VC	CHECKED BY: DAB
DESIGNED BY: SWM	APPROVED BY: DAB
PROJECT NUMBER: 1356-06-825	
SCALE: NONE	DATE: 07/14/08
DRAWING: E4	OF: 7

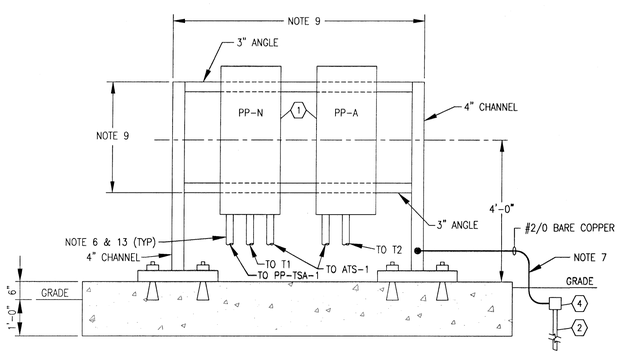
DRAWING PATH: I:\ENGINEERING\PROJECTS\109417-ALLEN\109417-E-0003.dwg



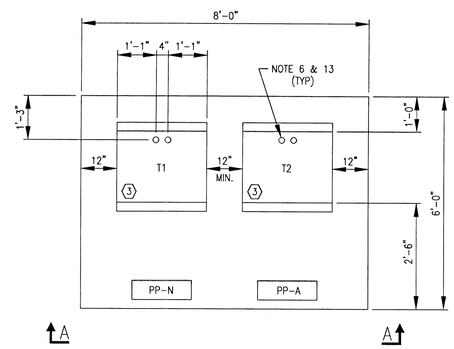
DETAIL 2
PREFERRED FEED RISER DIAGRAM



DETAIL 3
ALTERNATE FEED RISER DIAGRAM



SECTION A-A
POWER DISTRIBUTION PANEL
SCALE: 1/2" = 1'-0"



DETAIL 1
TRANSFORMER PAD
SCALE: 1/2" = 1'-0"

BILL OF MATERIALS		
ITEM	QTY.	DESCRIPTION
1	2	250A, 150A MAIN, 480V, 3ø POWER PANEL IN NEMA 3R ENCLOSURE (NOTE 10)
2	1	3/4" DIA. X 10' COPPER CLAD STEEL GROUND ROD
3	2	600V TO 480V, 3-ø 112.5kVA TRANSFORMER ENCLOSURE SHALL BE NEMA 3R RATED
4	1	CADWELD TYE "GR" CONNECTOR #2/0 WIRE TO VERTICAL GROUND ROD

NOTES:

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2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. ALL CONDUIT CONNECTIONS SHALL BE MADE WITH WATERPROOF INSULATED THROAT HUBS.
4. ALL EXPOSED CONDUIT SHALL BE RGS UNLESS INDICATED OTHERWISE.
5. ALL COMPONENT AND JUNCTION BOXES SHALL BE RATED NEMA 3R OR BETTER.
6. ABOVE GROUND CONDUIT SHALL BE RGS. THE JUNCTION BETWEEN RGS AND PVC SHALL BE MADE A MINIMUM OF 6" BELOW GRADE.
7. ALL GROUNDS OF DEVICES MOUNTED ON PANEL SHALL BE RUN TO A COMMON TERMINATION POINT WHICH IS TIED TO GROUND ROD.
8. ALL RACK METAL SHALL BE STAINLESS STEEL.
9. DIMENSIONS OF EQUIPMENT RACK CHANNELS SHALL BE VERIFIED WITH ACTUAL EQUIPMENT TO BE USED.
10. SEE DWG. #E4 FOR PANEL SCHEDULES.
11. PVC SCH 80 CONDUIT RUN UNDERGROUND.
12. ALL WIRING SHALL BE STRANDED COPPER, THWN 75° 600V.
13. CONDUITS SHALL STUB UP 6" ABOVE FINISHED GRADE. EACH CONDUIT SHALL BE CAPPED OR PLUGGED PRIOR TO CONCRETE POURING.

REFERENCE DRAWINGS:

E1	OVERALL POWER PLAN
E2	TRUCK SCALE AREA POWER PLAN
E3	PUMP HOUSE & TRUCK SCALE EQUIPMENT RACK LAYOUT
E4	PANEL SCHEDULES
E6	UG CONDUIT ROAD CROSSING DETAIL
E7	COMPRESSOR ROOM POWER PLAN

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022003 DOUGLAS A. BAUCOM
2/12/09

NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	JWM
D	10/28/08	BID ISSUE - NOT FOR CONSTRUCTION	JWM
C	10/21/08	ISSUED FOR APPROVAL	JWM
B	9/26/08	INCORPORATE CLIENT COMMENTS	
A	8/29/08	ISSUED FOR COMMENT	

Prepared with AutoCAD 2004 by PERIGON
DANBURY, CT 06810 | 931 Mountain Road, Wallingford, NC 28165 | (704) 265-2000
www.perigonnow.com
CURRENT PROJECT # 109417 | FILENAME: 9417-E-005
CURRENT MISC. DETAIL # 5440 | DWG REVISION: 1
PREVIOUS PROJECT # N/A | SHEET SIZE: 24x36

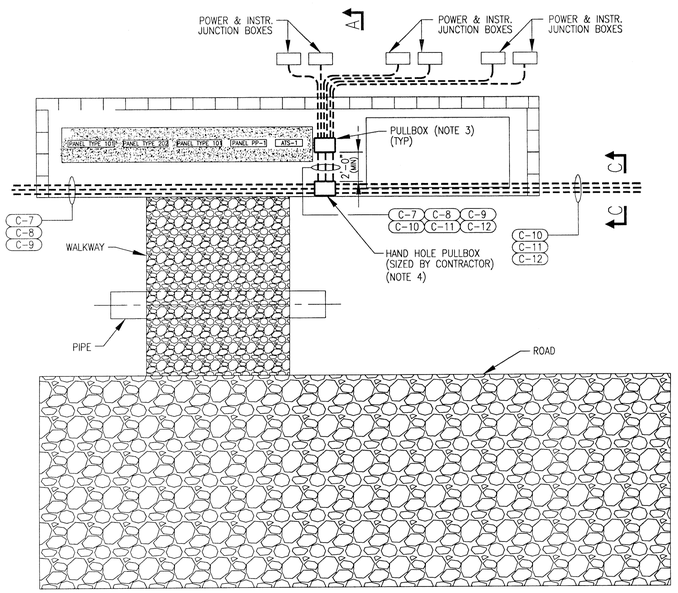
THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY DOUGLAS A. BAUCOM, REGISTRATION NUMBER 22003, ON 2/12/09, FOR REVISION 0. THIS MEDIA SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

TRANSFORMER DETAILS

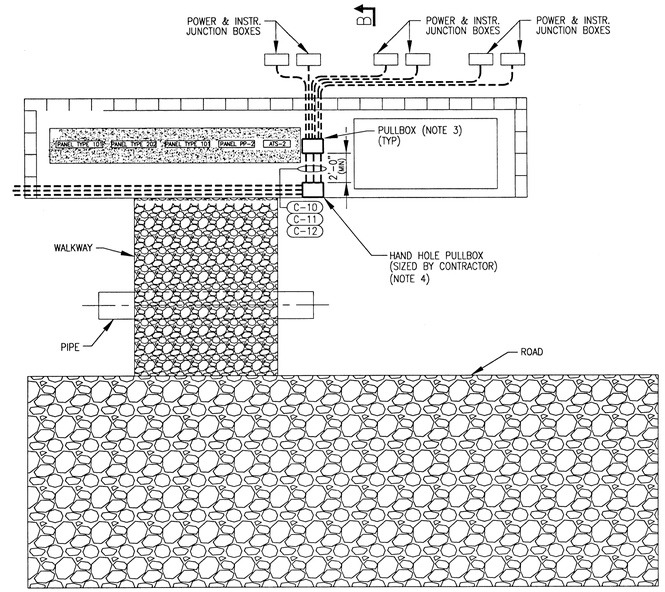
PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KC	CHECKED BY: DAB
DESIGNED BY: SWM	APPROVED BY: DAB
PROJECT NUMBER: 1356-06-825	
SCALE: AS NOTED	DATE: 07/28/08
DRAWING: E5	OF: 7

DRAWING PATH: I:\ENGINEERING\PROJECTS\109417\ELEC\109417-E-005.DWG



PLAN–PUMP HOUSE #1
SCALE: 1/4" = 1'-0"
REF. DWG. E1



PLAN–PUMP HOUSE #2
SCALE: 1/4" = 1'-0"
REF. DWG. E1

NOTES:

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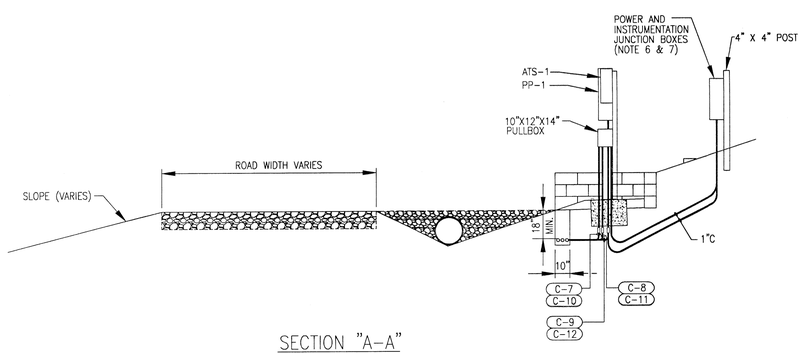
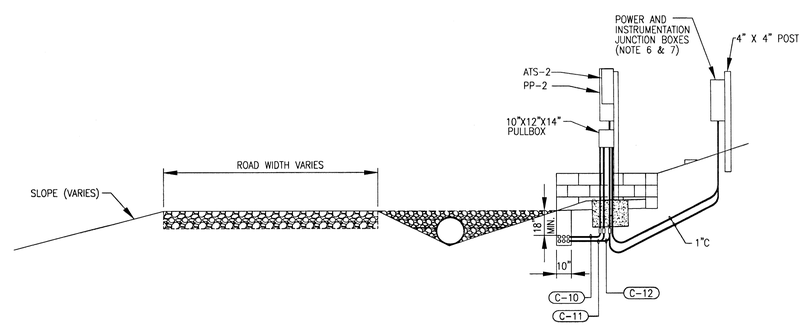
2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. CONTRACTOR SHALL DETERMINE ACTUAL CONDUIT/GROUND STUB-UP LOCATIONS.
4. CONSTRUCTION TO DETERMINE ELEVATION AND DIMENSIONS BASED ON ACTUAL UNDERGROUND CONDUIT ROUTING ON SLOPED BERM.
5. GROUND WIRES SHALL BE CADWELDED TOGETHER IN HAND HOLES.
6. CONTRACTOR SHALL INSTALL NEMA 3R POWER AND INSTRUMENT JUNCTION BOXES AT EACH PIPE RISER (TOTAL OF 6 PER PUMP STATION). ALL JB'S SHALL BE 8"X6"X4" EXCEPT THE POWER JB FOR THE 202 PANEL WHICH SHALL BE 10"X8"X4". REFER TO CIVIL DRAWINGS D4, D5, AND D6 FOR RISER LOCATION.
7. GUNNCO (PUMP VENDOR) TO PROVIDE WIRING FROM PUMPS, THROUGH JUNCTION BOXES, TO CONTROL PANELS. GUNNCO TO PROVIDE CONDUITS FROM PUMPS TO JUNCTION BOXES.

REFERENCE DRAWINGS:

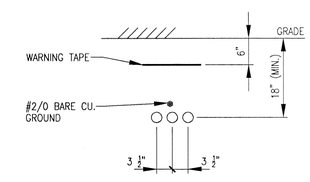
E1	OVERALL POWER PLAN
E2	TRUCK SCALE AREA POWER PLAN
E3	PUMP HOUSE & TRUCK SCALE EQUIPMENT RACK LAYOUT
E4	PANEL SCHEDULES
E5	TRANSFORMER DETAIL
E7	COMPRESSOR ROOM POWER PLAN
D4	LCS/LDS DETAILS II
D5	LCS/LDS DETAILS III
D6	LCS/LDS DETAILS IV



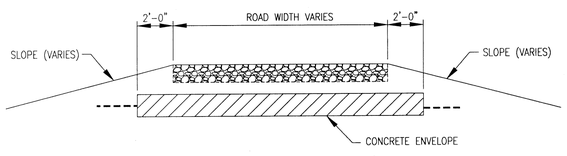
SECTION "A–A"
SCALE: 1/4" = 1'-0"



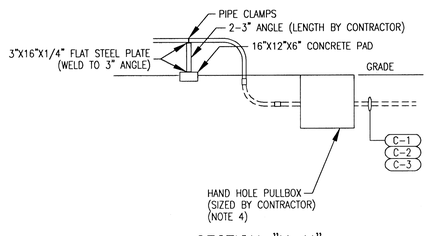
SECTION "B–B"
SCALE: 1/4" = 1'-0"



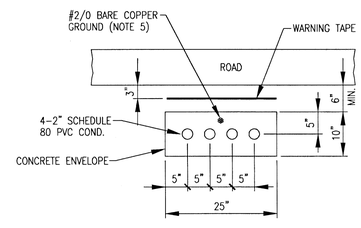
SECTION "C–C"
SCALE: 3/4" = 1'-0"



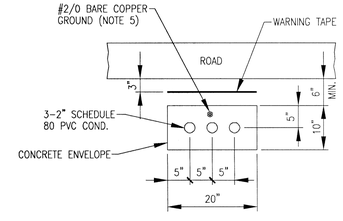
SECTION "F–F"
SCALE: 1/4" = 1'-0"
CONDUITS UNDER ROAD



SECTION "H–H"
SCALE: 1/4" = 1'-0"
CONDUIT TRANSITION TO ABOVE GROUND



SECTION "G–G"
CONDUITS UNDER ROAD
SCALE: 3/4" = 1'-0"



SECTION "E–E"
CONDUITS UNDER ROAD
SCALE: 3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 022003 ENGINEER DOUGLAS A. BAUCOM
2/16/09

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REGISTRATION NUMBER 22003
ON 2/12/09, FOR REVISION 0
THIS MEDIA SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

Prepared with AutoCAD 2004 by
PERIGON
CHARLOTTE 931 Industrial Drive, Matthews, NC 28105 (704) 846-2000
www.perigonsvg.com
CURRENT PROJECT # 109417 FILENAME: 9417-E-006
CURRENT MSC DETAIL # 5440 PLOT FACTOR: 1
PREVIOUS PROJECT # N/A SHEET SIZE: 24x36

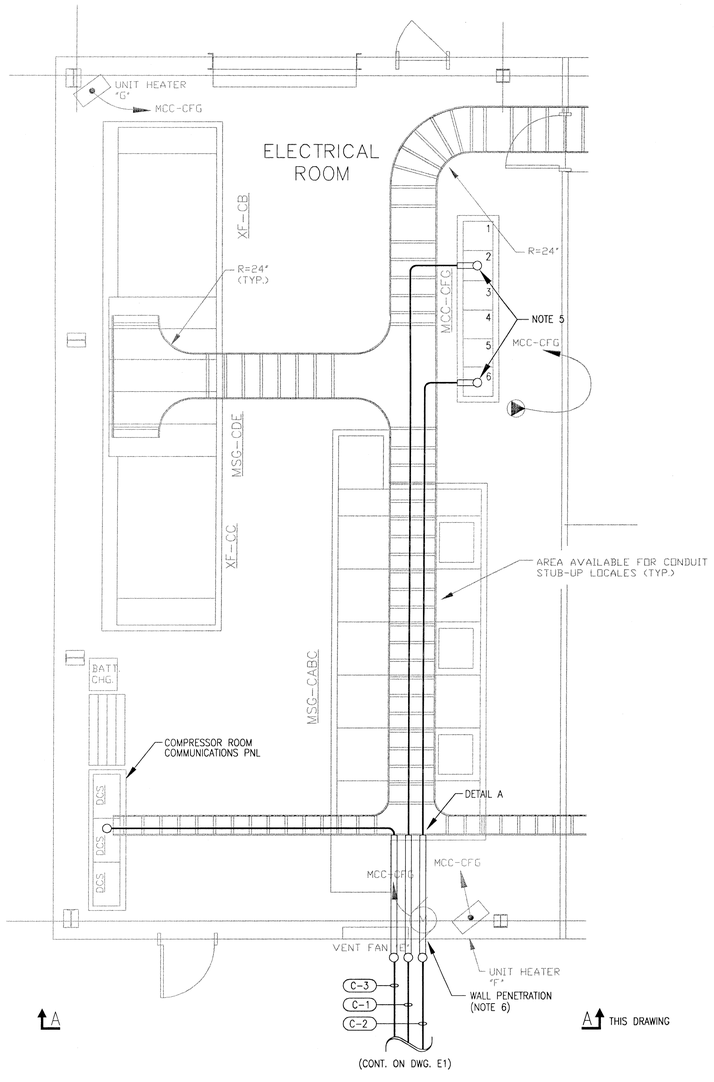
NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	JMW
D	10/28/08	BID ISSUE - NOT FOR CONSTRUCTION	JMW
C	10/21/08	ISSUED FOR APPROVAL	JMW
B	9/26/08	INCORPORATE CLIENT COMMENTS	
A	8/29/08	ISSUED FOR COMMENT	

UNDERGROUND CONDUIT
ROAD CROSSING DETAILS

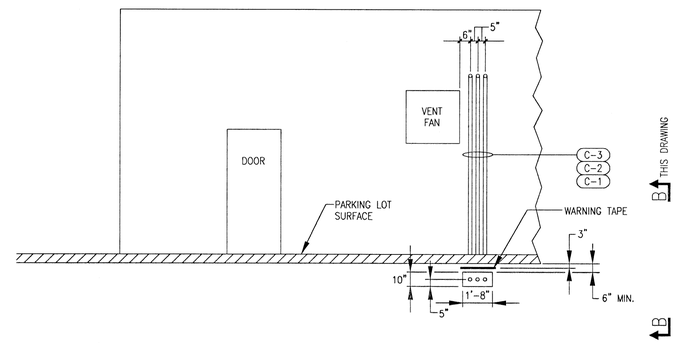
PHASE I RAB ASH LANDFILL
DUKE ENERGY – ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KC	CHECKED BY: DAB
DESIGNED BY: JMW	APPROVED BY: DAB
PROJECT NUMBER 1356-06-825	
SCALE: AS NOTED	DATE: 8/19/08
DRAWING: E6	OF: 7

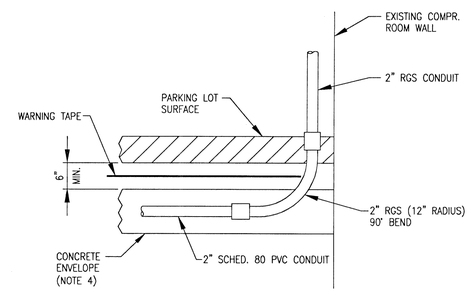
DRAWING PATH: V:\DOCUMENTS\PROJECTS\9417-E-007.DWG



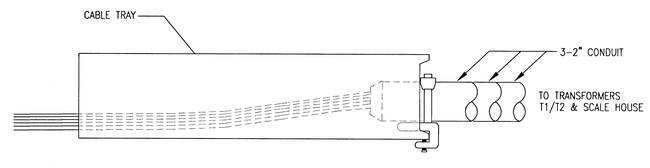
COMPRESSOR ROOM POWER PLAN
SCALE: 1/4" = 1'-0"



SECTION "A-A"
SCALE: 1/4" = 1'-0"



SECTION "B-B"
SCALE: 3/4" = 1'-0"



DETAIL A
CABLE TRAY TO CONDUIT TRANSITION
(N.T.S.)

NOTES:

1. ALL INSTALLATIONS SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE SUITABLE FOR THEIR APPLICATION PER THE LISTING INSTRUCTIONS OF A NATIONALLY RECOGNIZED AND APPROVED TESTING LABORATORY.
3. ALL CONDUIT TO BE RIGID GALVANIZED STEEL UNLESS OTHERWISE NOTED.
4. COORDINATE WITH OWNER FOR LOCATION OF EXISTING CONDUIT BETWEEN BUILDING AND GENERATOR TO AVOID CONFLICT.
5. CONTRACTOR TO INSTALL NEW 150A BREAKERS IN COMPARTMENTS 2J AND 6H.
6. CONTRACTOR TO SEAL WALL PENETRATIONS WITH WEATHER PROOFING SEALANT.

REFERENCE DRAWINGS:

A-680-F	ELECTRICAL PLAN – POWER COMPRESSOR BUILDING (DUKE DWG.)
A-680-C	600V SINGLE LINE DIAGRAM
E1	ASH LANDFILL OVERALL POWER PLAN
E2	TRUCK SCALE AREA POWER PLAN
E3	PUMP HOUSE & TRUCK SCALE EQUIPMENT RACK LAYOUT
E4	PANEL SCHEDULES
E5	TRANSFORMER DETAIL
E6	UG CONDUIT ROAD CROSSING DETAIL

Duke Energy ©

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NORTH CAROLINA PROFESSIONAL SEAL 022003 ENGINEER DOUGLAS A. BAUCOM
2/12/09

NO.	DATE	DESCRIPTION	BY
0	2/12/09	ISSUED FOR CONSTRUCTION	JMW
D	10/28/08	BID ISSUE – NOT FOR CONSTRUCTION	JMW
C	10/21/08	ISSUED FOR APPROVAL	JMW
B	9/26/08	INCORPORATE CLIENT COMMENTS	
A	8/29/08	ISSUED FOR COMMENT	

Prepared with AutoCAD 2004 by PERIGON
CHARLOTTE 931 Industrial Drive, Matthews, NC 28105 (704) 246-2000
www.perigonsvg.com
CURRENT PROJECT # 109417 FILENAME: 9417-E-007
CURRENT MISC DETAIL # 5440 PLOT FACTOR: 1
PREVIOUS PROJECT # N/A SHEET SIZE: 24x36

THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY DOUGLAS A. BAUCOM, REGISTRATION NUMBER 22003, ON 2/12/09, FOR REVISION 0. THIS MEDIA SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.

ASH LANDFILL PROJECT
COMPRESSOR ROOM POWER PLAN

PHASE I RAB ASH LANDFILL
DUKE ENERGY – ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: KC	CHECKED BY: DAB
DESIGNED BY: JMW	APPROVED BY: DAB
PROJECT NUMBER 1356-06-825	
SCALE: AS NOTED	DATE: 8/20/08
DRAWING: E7	OF: 7

DRAWING PATH: J:\DRAWINGS\ACTIVE PROJECTS\ASPHALT FILES\109417-E-007.DWG

Field Density Test Results

Summary of Density Test Results

Report Date: June 30, 2009

Project Name: Allen Steam Stat. Ash Landfill

Project No.: 1356-06-825EM

Client: Duke Energy Corporation, Post Office Box 1006 (EC10Q), 526 South Church Street, Charlotte, N. C. 28201-1006

Test		In-Place Density Test			Check Plug Data		Reference Standard				Compaction		Location	Elevation or Stone Depth
No.	Date	Type	Dry Density	Moisture Content	Dry Density	Moisture Content	Type	Ref. Curve	MDD	Optimum Moisture Content	Percent Specified	Percent In-Place		
1	04/23/09	D6938	**148.9**	**4.0**			D 698	QARY	151.1	5.5	95	**99**	Adj. to Scale ent. sta. 4+25	SG
2	04/23/09	D6938	**151.0**	**4.5**			D 698	QARY	151.1	5.5	95	**100**	Center of Intersection sta. 3+15	SG
3	04/23/09	D6938	**147.7**	**2.8**			D 698	QARY	151.1	5.5	95	**98**	75'N of intersection sta. 2+50	SG
4	04/23/09	D6938	**150.8**	**2.6**			D 698	QARY	151.1	5.5	95	**100**	150'NE of intersection	SG
5	04/23/09	D6938	**150.5**	**3.1**			D 698	QARY	151.1	5.5	95	**100**	50'S of edge of paved Roadway sta. 0+50	SG
6	04/23/09	D6938	**147.6**	**4.5**			D 698	QARY	151.1	5.5	95	**98**	11" slab wash out	SG
7	04/23/09	D6938	**150.9**	**3.6**			D 698	QARY	151.1	5.5	95	**100**	11" slab wash out	SG
8	04/27/09	D 2937	**95.3**	**19.4**	85.5	15.9	D 698	60	94.5	27.0	95	**100+**	Middle of Pipe East Side 10' East	-7
9	04/27/09	D 2937	**95.3**	**22.5**			D 698	60	94.5	27.0	95	**100+**	Retest of Test 385	-7
10	04/27/09	D 2937	**94.2**	**25.2**			D 698	60	94.5	27.0	95	**100**	Middle of Pipe West Side 10' West	-8
11	04/27/09	D 2937	**95.3**	**19.4**	89.8	19.8	D 698	CTP1	95.0	25.0	95	**100**	Ref. S.E. Corner of Pipe 15' North 10' East	-7
12	04/27/09	D 2937	**94.3**	**20.3**			D 698	CTP1	95.0	25.0	95	**99**	Ref. S. W. Corner 20' North 10' West	-7
13	04/27/09	D 2937	**93.6**	**20.6**			D 698	CTP1	95.0	25.0	95	**98**	Ref. S. E. Corner 30' North 10' East	-4
14	04/27/09	D6938	**140.1**	**2.9**			D 698	QARY	151.1	5.5	90	**93**	Middle of Pipe West Side	-9
15	04/27/09	D6938	**147.6**	**3.5**			D 698	QARY	151.0	5.5	90	**98**	Middle of Pipe East Side	-7
16	04/27/09	D6938	**147.9**	**4.9**			D 698	QARY	151.1	5.5	90	**98**	Retest of Test 391	-9
17	04/27/09	D6938	**138.1**	**4.5**			D 698	QARY	151.1	5.5	90	**91**	Middle of Pipe East Side	-6
18	04/27/09	D6938	**143.8**	**3.8**			D 698	QARY	151.1	5.5	90	**95**	Retest of Test 394	-6
19	04/27/09	D6938	**142.8**	**3.2**			D 698	QARY	151.1	5.5	90	**95**	Ref. S. W. Corner of Pipe 15' North	-8

* = Failed Specified Compaction, ** = Failed Specified Moisture Content

All Test Locations and Elevations are Approximate

Notes:

References: ASTM D6938: Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth), ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort, ASTM D 2937: Density of Soil In Place by the Drive Cylinder Method

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

Summary of Density Test Results

Report Date: June 30, 2009

Project No.: 1356-06-825EM

Project Name: Allen Steam Stat. Ash Landfill

Client: Duke Energy Corporation, Post Office Box 1006 (EC10Q), 526 South Church Street, Charlotte, N. C. 28201-1006

Test		In-Place Density Test			Check Plug Data		Reference Standard				Compaction		Location	Elevation or Stone Depth
No.	Date	Type	Dry Density	Moisture Content	Dry Density	Moisture Content	Type	Ref. Curve	MDD	Optimum Moisture Content	Percent Specified	Percent In-Place		
20	04/27/09	D6938	**148.1**	**3.5**			D 698	QARY	151.1	5.5	90	**98**	Ref. S. E. Corner of Pipe 27' North 10' East	-5
21	04/27/09	D6938	**145.0**	**5.6**			D 698	QARY	151.1	5.5	90	**96**	Ref. S. W. Corner of Pipe 25'N 10'W	-7
22	04/27/09	D6938	**147.9**	**3.7**			D 698	QARY	151.1	5.5	90	**98**	Ref. S. E. Corner 30' North 10' East	-4
23	04/28/09	D 2937	**86.0**	**31.5**	82.8	32.4	D 698	60	84.5	34.5	95	**100+**	Ref. SW corner of Pipe 45'N 10'W	-6
24	04/28/09	D 2937	**97.2**	**21.9**	91.1	18.4	D 698	CTP1	96.0	23.0	95	**100+**	Ref. SW corner of Pipe 60'N 15'W	-5
25	04/28/09	D 2937	**93.8**	**21.5**	90.4	19.2	D 698	CTP2	94.6	24.4	95	**99**	Ref. SW corner of Pipe 50'N 15'W	-4
26	04/28/09	D6938	**144.6**	**4.2**			D 698	QARY	151.1	5.5	90	**96**	Ref. SW corner of Pipe 30'N	-6
27	04/28/09	D6938	**138.1**	**3.5**			D 698	QARY	151.1	5.5	90	**91**	Ref. SW corner of Pipe 45'N	-5
28	04/28/09	D6938	**146.9**	**4.7**			D 698	QARY	151.1	5.5	90	**97**	Ref. SW corner of Pipe 50'N	-4
29	04/28/09	D6938	**151.2**	**5.1**			D 698	QARY	151.1	5.5	90	**100**	Ref. SW corner of Pipe 35'N	-3
30	04/28/09	D6938	**143.9**	**3.7**			D 698	QARY	151.1	5.5	90	**95**	Ref. SE corner of Pipe 15'N	-3
31	04/28/09	D 2937	**98.7**	**20.9**	98.4	18.1	D 698	60	102.0	21.5	95	**97**	Southside of Bridge in Roadway	-3
32	04/28/09	D 2937	**91.3**	**25.3**	92.5	23.1	D 698	60	96.0	26.0	95	**95**	Northside of Scale approach from Asphalt	SG
33	04/28/09	D 2937	**99.9**	**21.2**			D 698	60	102.0	21.5	95	**98**	S. side of Bridge Roadway	-2
34	04/29/09	D 2937	**98.0**	**24.4**	91.8	20.5	D 698	CSL9	96.3	25.0	95	**100+**	Roadway S. side of Pipe	-1
35	04/29/09	D 2937	**98.7**	**25.0**			D 698	CSL9	96.3	25.0	95	**100+**	Roadway S. Side of Pipe	SG
36	04/29/09	D 2937	**92.1**	**19.7**	90.1	20.1	D 698	CTP2	94.5	24.4	95	**97**	Ref. SW End of Pipe 30'N 15'W	-3
37	04/29/09	D 2937	**94.2**	**20.1**	95.9	17.1	D 698	CTP2	99.0	22.5	95	**95**	Ref. SE End of Pipe 50'N 15'E	-2
38	04/29/09	D 2937	**96.6**	**20.9**			D 698	CTP2	99.0	22.5	95	**98**	Ref. SW End of Pipe 45'N 15'W	-2

* = Failed Specified Compaction, ** = Failed Specified Moisture Content

All Test Locations and Elevations are Approximate

Notes:

References: ASTM D6938: Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth), ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort, ASTM D 2937: Density of Soil In Place by the Drive Cylinder Method

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.
Name (Technical Responsibility)

Signature

Staff Professional
Position

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

Summary of Density Test Results

Report Date: June 30, 2009

Project No.: 1356-06-825EM

Project Name: Allen Steam Stat. Ash Landfill

Client: Duke Energy Corporation, Post Office Box 1006 (EC10Q), 526 South Church Street, Charlotte, N. C. 28201-1006

Test		In-Place Density Test			Check Plug Data		Reference Standard				Compaction		Location	Elevation or Stone Depth
No.	Date	Type	Dry Density	Moisture Content	Dry Density	Moisture Content	Type	Ref. Curve	MDD	Optimum Moisture Content	Percent Specified	Percent In-Place		
39	04/29/09	D 2937	**95.0**	**25.7**	87.4	23.4	D 698	TP-9	95.0	26.3	95	**100**	Ref. SE corner of Pipe 35'N 15'W	-1
40	04/29/09	D6938	**143.9**	**3.1**			D 698	QARY	151.1	5.5	90	**95**	Scale Approach	SG
41	04/29/09	D6938	**144.5**	**4.3**			D 698	QARY	151.1	5.5	90	**96**	Ref. SE End of Pipe 30'N	-5
42	04/29/09	D6938	**150.2**	**4.9**			D 698	QARY	151.1	5.5	90	**99**	Ref. SW End of Pipe 30'N	-5
43	04/29/09	D6938	**143.8**	**4.9**			D 698	QARY	151.1	5.5	90	**95**	REf. SW End of Pipe 50'N	-4
44	04/29/09	D6938	**146.2**	**5.0**			D 698	QARY	151.1	5.5	90	**97**	Ref. SE End of Pipe 50'N	-4
45	04/29/09	D6938	**150.9**	**4.8**			D 698	QARY	151.1	5.5	90	**100**	Ref. SE End of Pipe 25'N	-3
46	04/29/09	D6938	**149.7**	**4.1**			D 698	QARY	151.1	5.5	90	**99**	Ref. SW corner of Pipe 25'N	-3
47	04/29/09	D6938	**146.5**	**5.0**			D 698	QARY	151.1	5.5	90	**97**	Ref. SE corner of Pipe 45'N	-2
48	04/29/09	D6938	**142.7**	**2.9**			D 698	QARY	151.1	5.5	90	**94**	Ref. SW corner of Pipe 45'N	-2
49	04/30/09	D 2937	**93.9**	**27.4**	79.6	24.5	D 698	CSL1	92.0	29.0	95	**100+**	Ref. SW corner of Pipe 50'N 45'W	-2
50	04/30/09	D 2937	**91.3**	**29.8**	88.3	29.6	D 698	CSL1	90.5	30.5	95	**100+**	Center of Pipe 20' E	-1
51	04/30/09	D 2937	**89.5**	**30.0**			D 698	CSL1	90.5	30.5	95	**99**	Center of Pipe Bridge 30'W	-1
52	04/30/09	D6938	**145.5**	**3.9**			D 698	QARY	151.1	5.5	90	**96**	Ref. SE corner of Pipe 45'N	-4
53	04/30/09	D6938	**148.6**	**3.9**			D 698	QARY	151.1	5.5	90	**98**	Ref. SW corner of Pipe 45'N	-4
54	04/30/09	D6938	**142.9**	**4.3**			D 698	QARY	151.1	5.5	90	**95**	Ref. NW corner of Pipe 45'S	-3
55	04/30/09	D6938	**149.1**	**3.3**			D 698	QARY	151.1	5.5	90	**99**	Ref. NE corner of Pipe 45'S	
56	04/30/09	D6938	**143.8**	**3.2**			D 698	QARY	151.1	5.5	90	**95**	Ref. North End of Pipe Center of Pipe 20'S	-2
57	04/30/09	D6938	**150.2**	**4.7**			D 698	QARY	151.1		90	**99**	Ref. S End of Pipe Center of Pipe 20'N	-2

* = Failed Specified Compaction, ** = Failed Specified Moisture Content

All Test Locations and Elevations are Approximate

Notes:

References: ASTM D6938: Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth), ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort, ASTM D 2937: Density of Soil In Place by the Drive Cylinder Method

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.

Name (Technical Responsibility)

Signature

Staff Professional

Position

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

Summary of Density Test Results

Report Date: June 30, 2009

Project No.: 1356-06-825EM

Project Name: Allen Steam Stat. Ash Landfill

Client: Duke Energy Corporation, Post Office Box 1006 (EC10Q), 526 South Church Street, Charlotte, N. C. 28201-1006

Test		In-Place Density Test			Check Plug Data		Reference Standard				Compaction		Location	Elevation or Stone Depth
No.	Date	Type	Dry Density	Moisture Content	Dry Density	Moisture Content	Type	Ref. Curve	MDD	Optimum Moisture Content	Percent Specified	Percent In-Place		
58	05/01/09	D6938	**146.7**	**3.4**			D 698	QARY	151.1	5.5	90	**97**	Ref North End of Pipe Center of Pipe 20's	-1
59	05/01/09	D6938	**141.8**	**4.4**			D 698	QARY	151.1	5.5	90	**94**	Ref. South End of Pipe Center of Pipe 20'N	-1
60	05/01/09	D6938	**145.7**	**4.0**			D 698	QARY	151.1	5.5	90	**96**	Retest of Test #39	-1
61	05/04/09	D6938	**142.1**	**2.3**			D 698	QARY	151.1	5.5	100	**94 ***	Ref. East End of Pipe Bridge 25'W 30'N	SG
62	05/04/09	D6938	**144.7**	**2.8**			D 698	QARY	151.1	5.5	100	**96 ***	Ref. West End of Pipe Bridge 30'N 25'E	SG
63	05/04/09	D6938	**144.4**	**2.2**			D 698	QARY	151.1	5.5	100	**96 ***	Ref. Sta. 0+50 WBL Middle	SG
64	05/04/09	D6938	**145.5**	**3.3**			D 698	QARY	151.1	5.5	100	**96 ***	Ref. Sta. 1+00 EBL	SG
65	05/04/09	D6938	**150.0**	**2.0**			D 698	QARY	151.1	5.5	100	**99 ***	Ref. Sta. 1+50 WBL	SG
66	05/04/09	D6938	**148.2**	**2.6**			D 698	QARY	151.1	5.5	100	**98 ***	Ref. Sta. 2+00 EBL	SG
67	05/06/09	D6938	**150.6**	**4.9**			D 698	QARY	151.1	5.5	98	**100**	Ramp S End of Scale	SG
68	05/06/09	D6938	**147.0**	**4.1**			D 698	QARY	151.1	5.5	98	**97 ***	Ramp S End of Scale	SG
69	05/14/09	D6938	**150.0**	**4.6**			D 698		151.1	5.5	98	**99**	Outbound Lane of Tire Wash South End	SG
70	06/01/09	D 2937	**92.5**	**29.7**	89.6	24.6	D 698	CSL4	92.5	27.5	95	**100**	150'E off the SW corner of Cell 1 Anchor Trench	SG
71	06/01/09	D 2937	**91.4**	**28.5**			D 698	CSL4	92.5	27.5	95	**99**	200'W off the SW corner of Cell 1 Anchor Trench	SG
72	06/10/09	D 2937	**91.0**	**24.5**	89.2	20.8	D 698	S-21	95.0	25.0	95	**96**	Forcemain 20'S of Vault Stubin Rdwy.	-1
73	06/11/09	D 2937	**92.6**	**25.1**	89.1	19.3	D 698	S-1	95.1	24.1	95	**97**	Forcemain 150'E of 90 degree turn @ Cell 1	SG
74	06/12/09	D 2937	**94.0**	**26.1**	91.9	20.3	D 698	S-21	95.4	24.5	95	**99**	Forcemain 300'E of 90 degree turn @ Cell 1	-1
75	06/15/09	D 2937	**87.1**	**32.6**	84.6	28.8	D 698	CSL1	89.5	34.5	95	**97**	Forcemain 400'E of 90 degree bend @ Cell	SG
76	06/16/09	D 2937	**91.5**	**26.5**	91.2	21.1	D 698	S-21	95.0	25.0	95	**96**	Forcemain 500'E of 90 degree bend @ Cell 1	-1

* = Failed Specified Compaction, ** = Failed Specified Moisture Content

All Test Locations and Elevations are Approximate

Notes:

References: ASTM D6938: Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth), ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort, ASTM D 2937: Density of Soil In Place by the Drive Cylinder Method

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.
Name (Technical Responsibility)

Signature

Staff Professional
Position

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Summary of Density Test Results

Report Date: July 07, 2009

Project Name: Allen Steam Stat. Ash Landfill

Project No.: 1356-06-825EM

Client: Duke Energy Corporation, Post Office Box 1006 (EC10Q), 526 South Church Street, Charlotte, N. C. 28201-1006

Test		In-Place Density Test			Check Plug Data		Reference Standard				Compaction		Location	Elevation or Stone Depth
No.	Date	Type	Dry Density	Moisture Content	Dry Density	Moisture Content	Type	Ref. Curve	MDD	Optimum Moisture Content	Percent Specified	Percent In-Place		
77	06/30/09	D 2937	**86.4**	**30.2**	84.1	27.4	D 698	S-18	89.5	31.5	95	**97**	80' West of Cell 2 stub out 6 inch Forcemain	-1.5'
78	06/30/09	D 2937	**84.8**	**29.0**			D 698	S-18	89.5	31.5	95	**95**	100' East of Cell 2 Stub Out 6 inch Forcemain	-1'
79	07/01/09	D 2937	**86.5**	**28.5**	85.5	26.8	D 698	S-18	89.8	30.2	95	**96**	240' East of Cell 2 Stub Out 6 inch Forcemain	-1'
80	07/01/09	D 2937	**87.2**	**30.0**			D 698	S-18	89.8	30.2	95	**97**	60' W of Phase II T. 6 inch Forcemain	-1'

* = Failed Specified Compaction. ** = Failed Specified Moisture Content

All Test Locations and Elevations are Approximate

Notes:

References: ASTM D 2937: Density of Soil In Place by the Drive Cylinder Method. ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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Field Density Reference Curves

AGGREGATE BASE COURSE DENSITY

Quarry Code	Quarry Name	Quarry Owner	Density (pcf)	Density (kg/cu.m.)	Optimum Moist. (%)	Date	Lab Number	Inspector Name
0101	Pineville Quarry	Vulcan Materials	151.1	2420.6	5.5	10/15/2008	749213	Adair, M.

Your search yielded 1 quarries.

You can perform another search. Use the drop down boxes to select the company and/or quarry submitting the sample. To see the results of all tests, click on the "Search" button without specifying a company or quarry.

Vulcan Materials and/or

Pineville Quarry

Search

Please direct any inquiries on this table to the Soils Engineer, T(919) 733-3242.

Moisture - Density Report

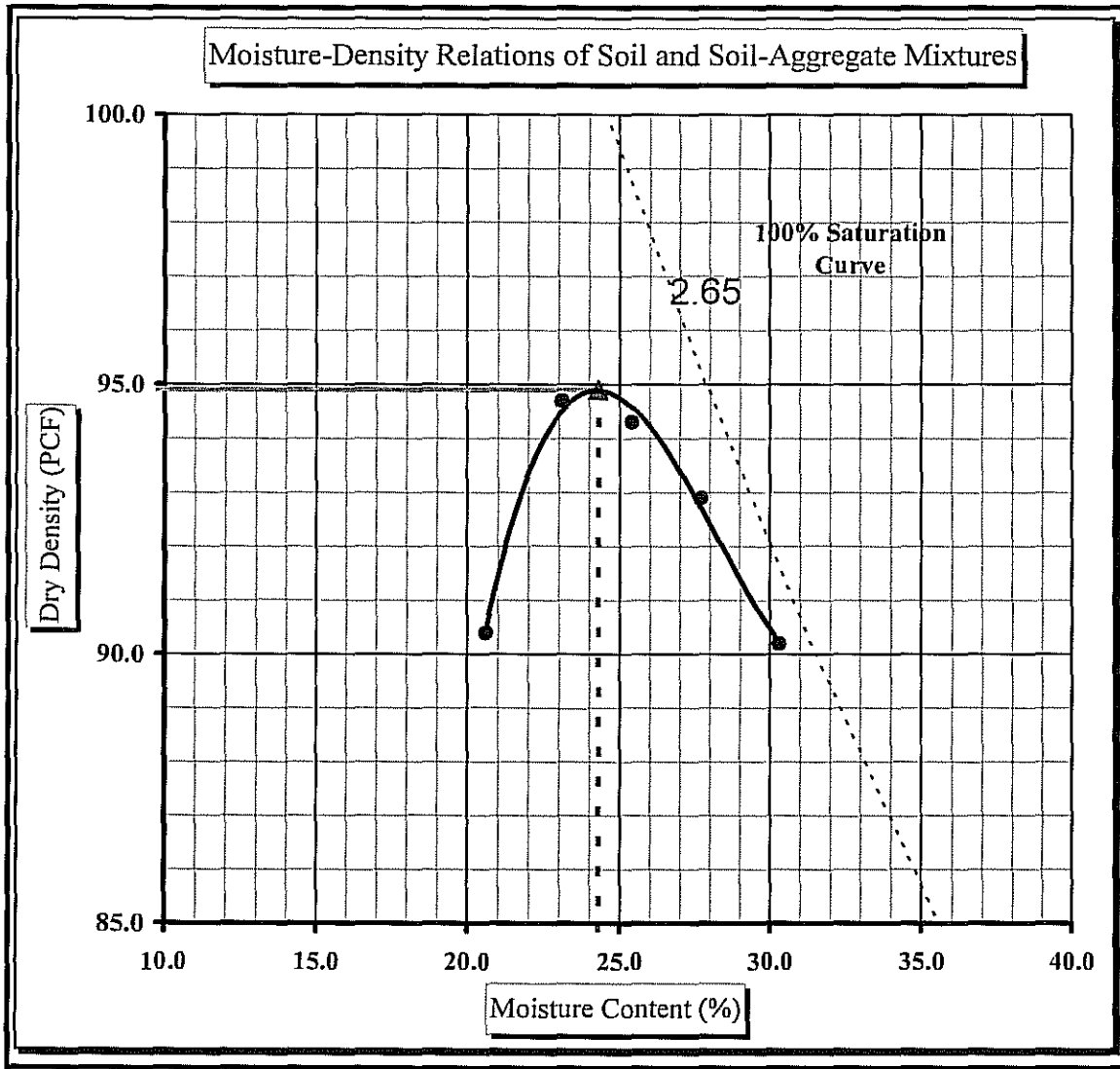
S&ME

S&ME Project #:	**1356-06-825 Phase 09**	Report Date:	January 5, 2009
Project Name:	**Allen Steam Station RAB Ash Landfill**	Test Date(s):	1/2-5/09
Client Name:	Duke Energy		
Project Address:	CTP-1 (KB)		

Boring #:	1	Sample #:	~~S-1~~	Sample Date:	December 29, 2008
Location:	Compacted Soil Liner TP	Offset:		Depth:	Bulk
Sample Description:	Orange Red Brown Clayey Silt w/Coarse to Fine Sand (MH)				

Maximum Dry Density **94.9** **PCF.** **Optimum Moisture Content** **24.3** **%**

Method A



Soil Properties

Natural Moisture Content:	
Liquid Limit:	71
Plastic Limit:	37
Plastic Index:	34
Specific Gravity:	

% Passing

3/4"	
1/2"	
3/8"	
#4	100

Oversize Fraction

Bulk Sp. Gravity
% Moisture
Oversize Fraction
MDD
Opt. MC

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐
Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐
Mechanical Hammer ☒ Manual Hammer ☐ Moist Preparation ☐ Dry Preparation ☒

References:
ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 422: Particle Size Analysis of Soils
ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils
ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

Technical Responsibility: Ken Daly _____ Project Engineer
Signature

Moisture - Density Report

S&ME

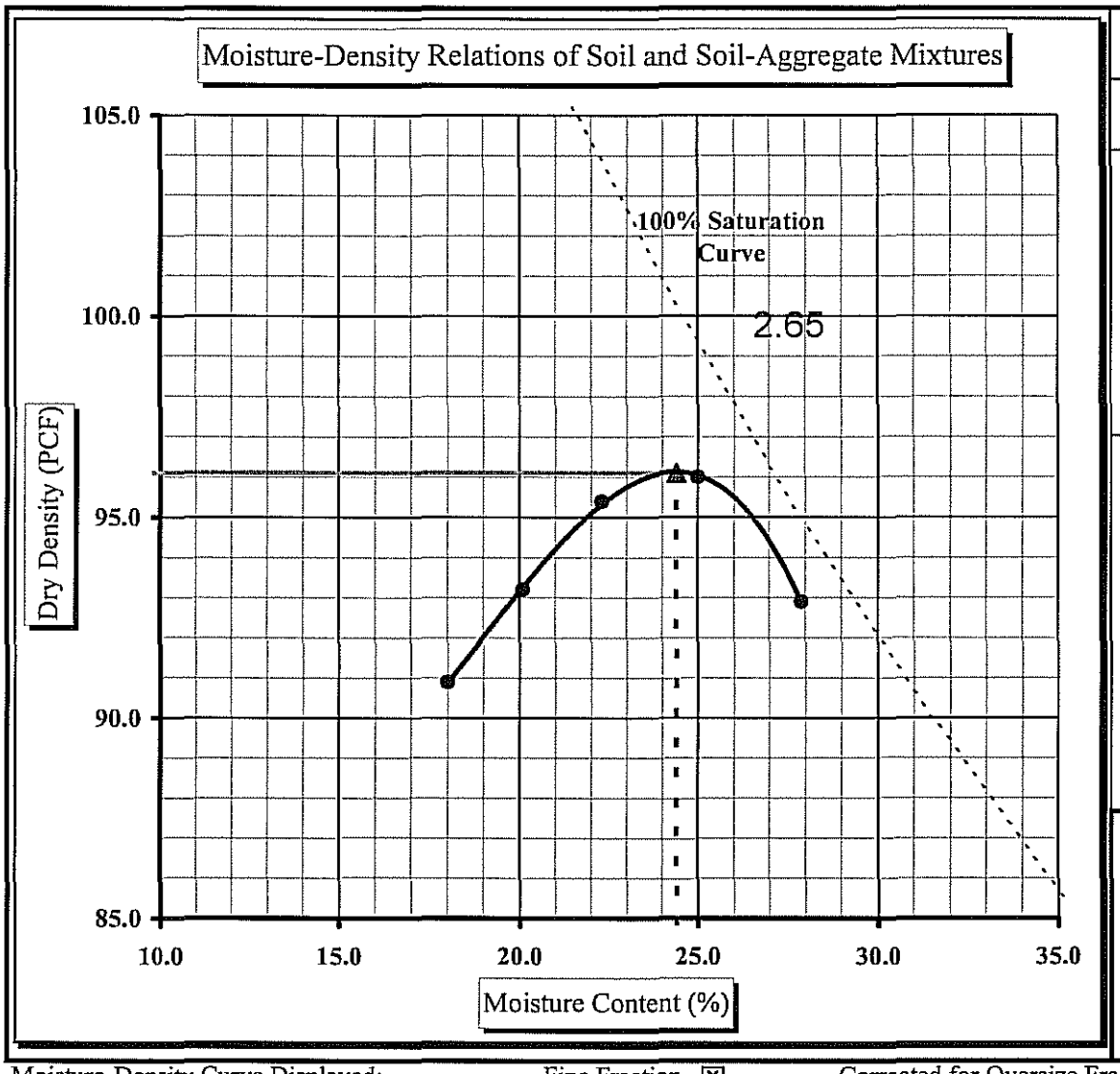
S&ME Project #:	**1356-06-825 Phase 09**	Report Date:	January 5, 2009
Project Name:	**Allen Steam Station RAB Ash Landfill**	Test Date(s):	1/2-5/09
Client Name:	Duke Energy		
Project Address:			

CTP-2 (KB)

Boring #:	2	Sample #:	~~S-2~~	Sample Date:	December 29, 2008
Location:	Compacted Soil Liner TP	Offset:		Depth:	Bulk
Sample Description:	Orange Red Brown Clayey Silt w/Medium to Fine Sand (MH)				

Maximum Dry Density **96.1** **PCF.** **Optimum Moisture Content** **24.4** **%**

ASTM D 698 Method A



Soil Properties

Natural Moisture Content:	
Liquid Limit:	72
Plastic Limit:	44
Plastic Index:	28
Specific Gravity:	

% Passing	
3/4"	
1/2"	
3/8"	
#4	100

Oversize Fraction

Bulk Sp. Gravity
% Moisture
Oversize Fraction
MDD
Opt. MC

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐
Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐
Mechanical Hammer ☒ Manual Hammer ☐ Moist Preparation ☐ Dry Preparation ☒

References: ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort
ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 422: Particle Size Analysis of Soils
ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils
ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

Technical Responsibility: Ken Daly _____ Project Engineer
Signature

Form No. TR-D698-2
Revision No. : 0
Revision Date: 11/21/07

Moisture - Density Report

S&ME

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

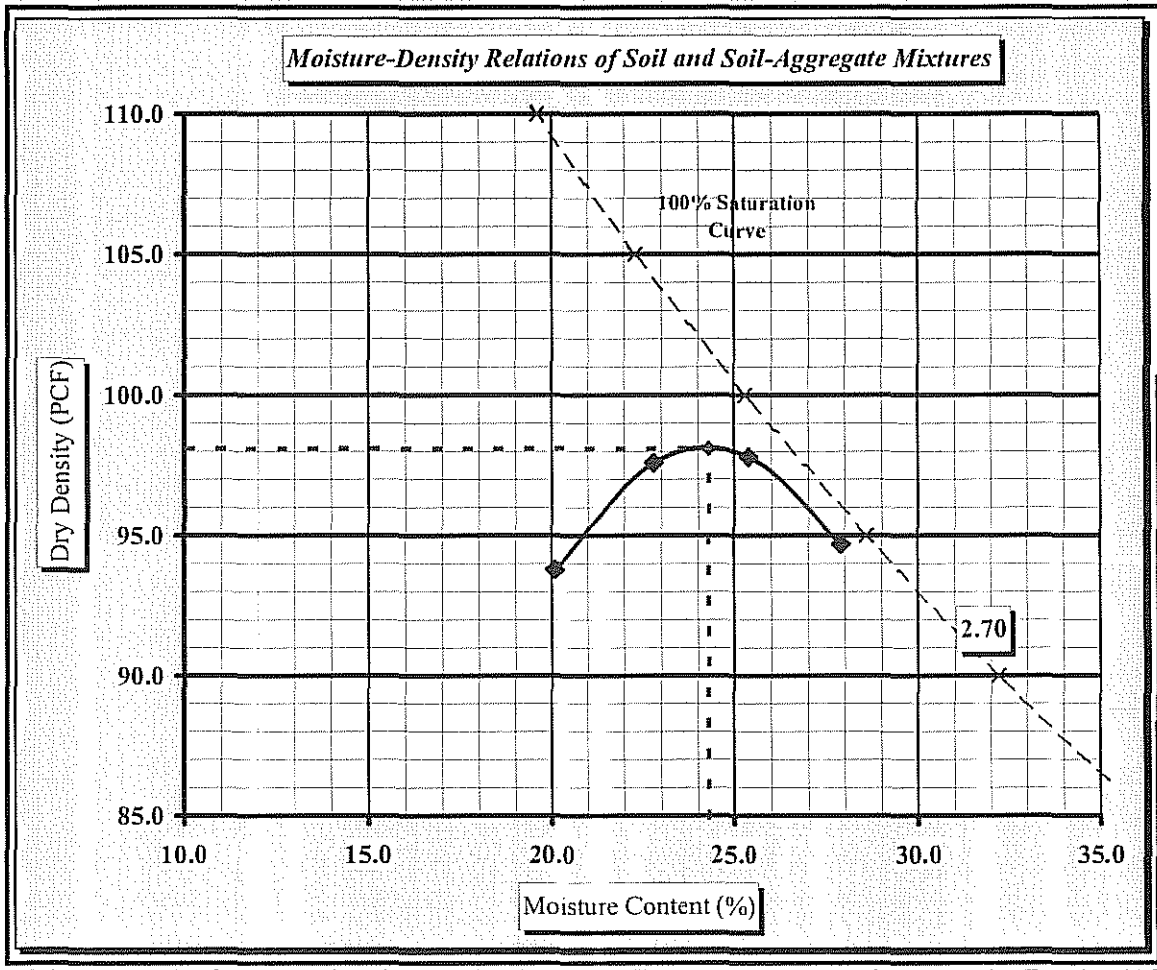
S&ME Project #:	**1356-06-825 Ph. 9**	Report Date:	3/31/09
Project Name:	Allen Retired Ash Basin (RAB) Ash Landfill	Test Date(s):	3/26-31/09
Client Name:	Duke Energy		
Client Address:			

Location:	Compacted soil liner	Sample #:	CSL-9	Sample Date:	3/25/2009
	(In place) (F-7)	Offset:		Depth:	1st Lift

Sample Description: Red Orange Silty Clay (CH) with Fine to Medium Sand and Mica

Maximum Dry Density 98.1 PCF. **Optimum Moisture Content 24.3%**

ASTM D 698 -- Method A



Soil Properties

Natural Moisture Content	**25.6%**
Specific Gravity of Soil	
Liquid Limit	**71**
Plastic Limit	**33**
Plastic Index	**38**

% Passing

3/4"	
3/8"	
#4	98.7%

Oversize Fraction

Bulk Gravity	
% Moisture	
% Oversize	#DIV/0!
MDD	**#DIV/0!**
Opt. MC	**#DIV/0!**

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐

Mechanical Rammer ☒ Manual Rammer ☐ Moist Preparation ☐ Dry Preparation ☒

References / Comments / Deviations:

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Kyle Baucom			
Technical Responsibility	*Signature*	*Position*	*Date*

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Moisture - Density Report

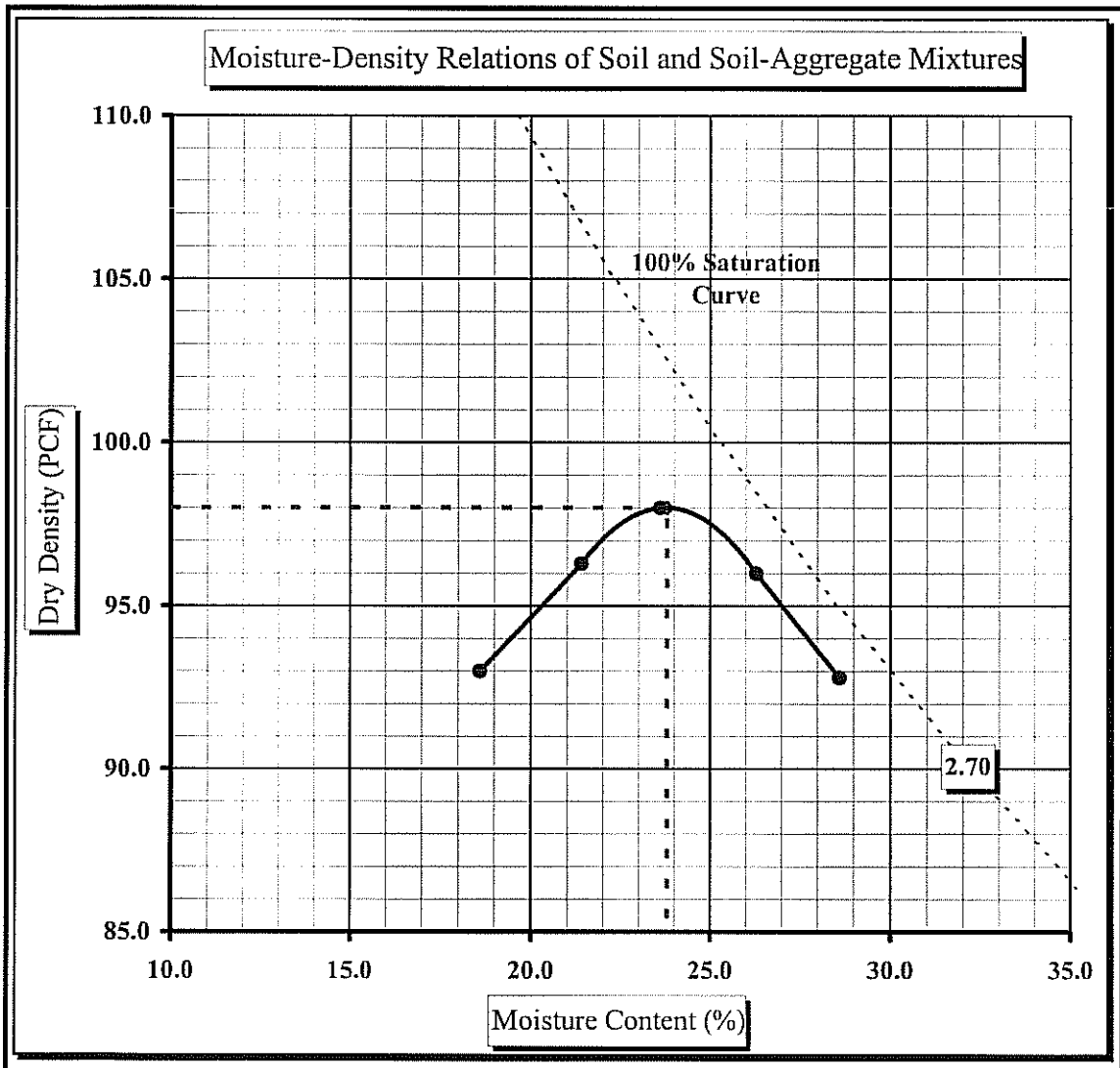
S&ME

S&ME Project #:	**1356-06-825**	Report Date:	November 5, 2008
Project Name:	**Plant Allen RAB Ash Landfill**	Test Date(s):	10/30/08-11/5/08
Client Name:	Duke Energy		
Client Address:			

Boring #:		Sample #:	TP-9	Sample Date:	October 21, 2008
Location:	Plant Allen Borrow Area	Offset:		Depth:	0-8'
Sample Description:	Red Brown Silty Clay (MH) with Fine to Medium Sand and Mica				

Maximum Dry Density **98.0** **PCF.** **Optimum Moisture Content** **23.8** **%**

ASTM D 698 Method A



Soil Properties

Natural Moisture Content:	21.2%
Liquid Limit:	68
Plastic Limit:	36
Plastic Index:	32
Specific Gravity:	

% Passing	
3/4"	
1/2"	
3/8"	
#4	100

Oversize Fraction

Bulk Sp. Gravity
% Moisture
Oversize Fraction
MDD
Opt. MC

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐
Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐
Mechanical Hammer ☒ Manual Hammer ☐ Moist Preparation ☐ Dry Preparation ☒

References: ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort
ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 422: Particle Size Analysis of Soils
ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils
ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

Technical Responsibility: Ken Daly _____ 0
Signature

Form No. TR-D698-2
Revision No. : 0
Revision Date: 11/21/07

Moisture - Density Report

S&ME

Quality Assurance

S&ME, Inc. ~ 9751 Southern Pine Boulevard ~ Charlotte, NC 28273

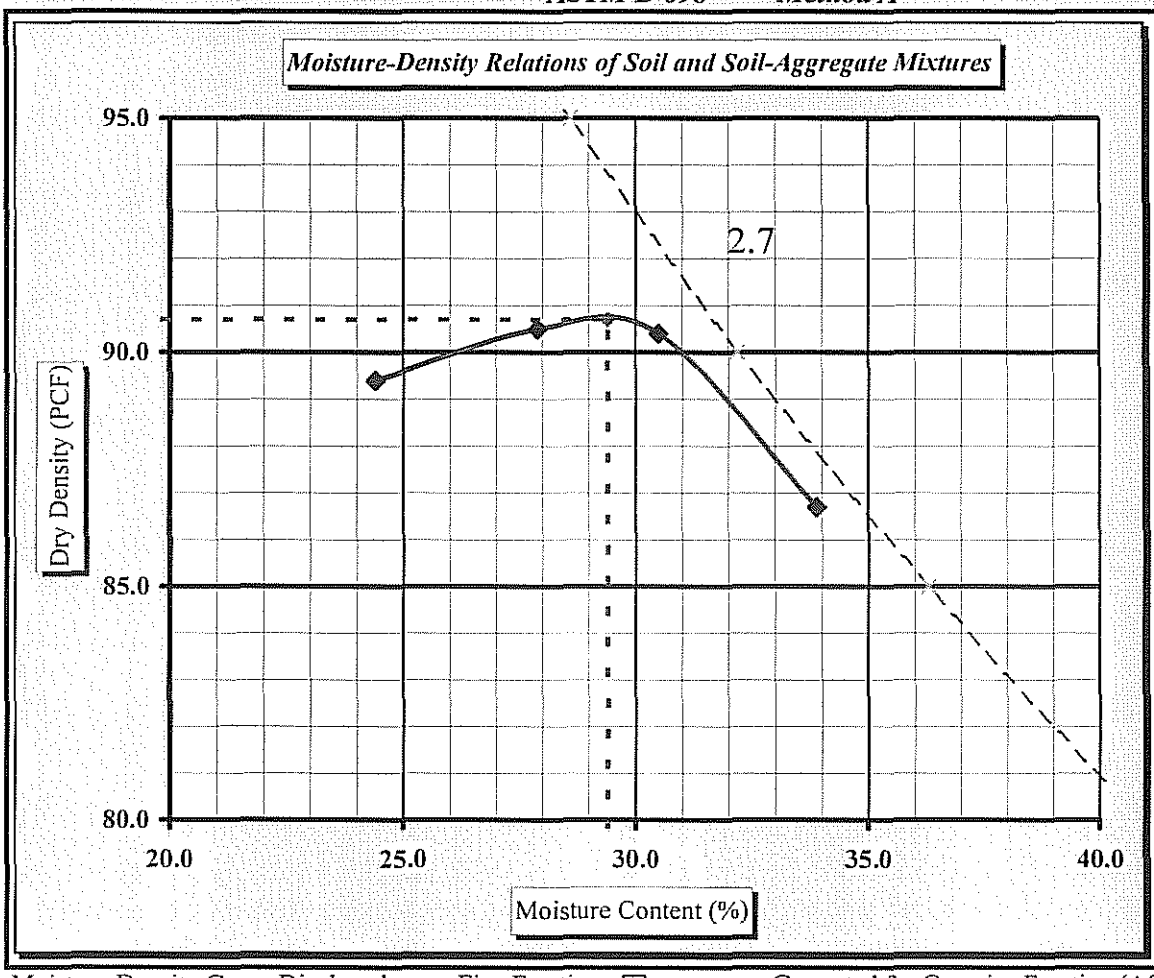
S&ME Project #:	**1356-06-825 Phase 9**	Report Date:	3/13/09
Project Name:	Allen Retired Ash Basin (RAB) Ash Landfill	Test Date(s):	3/12-13/09
Client Name:	Duke Energy		
Client Address:			

Boring #:		Sample #:	CSL-1	Sample Date:	3/11/2009
Location:	1st Lift	Offset:		Depth:	

Sample Description: Red Orange Brown Clayey Silt w/Coarse to Fine to Medium Sand (MH)

Maximum Dry Density 90.7 PCF. **Optimum Moisture Content 29.4%**

ASTM D 698 -- Method A



Soil Properties

Natural Moisture Content	**27.3%**
Specific Gravity of Soil	
Liquid Limit	**69**
Plastic Limit	**34**
Plastic Index	**35**

% Passing

3/4"	100.0%
3/8"	100.0%
#4	99.9%
#10	99.1%
#40	88.7%
#60	84.8%
#200	80.1%

Oversize Fraction

Bulk Gravity	
% Moisture	
% Oversize	#DIV/0!
MDD	**#DIV/0!**
Opt. MC	**#DIV/0!**

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☐

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐

Mechanical Rammer ☒ Manual Rammer ☐ Moist Preparation ☒ Dry Preparation ☐

References / Comments / Deviations:

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Kyle Baucom		Staff Professional	
Technical Responsibility	*Signature*	*Position*	*Date*

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Asphalt Density Test Results

S&ME

Summary of Asphalt Density Test Results

Page No. 1
Report Date: June 30, 2009
Project No.: 1356-06-825

Project Name: Duke Allen Steam Station Ash. LF
Client: Duke Energy Corporation

Test				In-Place Density Test		Reference Standard		Compaction			Thickness			Location	Elevation
No.	Date	Date Paved	Mix Type	Type ASTM	Density PCF	Type ASTM	Target Density PCF	Percent Specified	Percent In-Place		Percent Specified	Percent In-Place			
1	4/24/09	4/24/09	RI19.OC	D2950	149.5	D2041	162.5	92	92		N/A	N/A		Sta. 0+50 WBL middle	Binder
2	4/24/09	4/24/09	RI19.OC	D2950	151.2	D2041	162.5	92	93		N/A	N/A		Sta. 1+00 WBL middle	Binder
3	4/24/09	4/24/09	RI19.OC	D2950	156.1	D2041	162.5	92	96		N/A	N/A		Sta. 1+50 WBL middle	Binder
4	4/24/09	4/24/09	RI19.OC	D2950	152.8	D2041	162.5	92	94		N/A	N/A		Sta. 2+00 WBL middle	Binder
5	4/24/09	4/24/09	RI19.OC	D2950	149.0	D2041	162.5	92	92		N/A	N/A		Sta. 2+50 WBL middle	Binder
6	4/24/09	4/24/09	RI19.OC	D2950	152.2	D2041	162.5	92	94		N/A	N/A		Sta. 3+00 WBL middle	Binder
7	4/24/09	4/24/09	RI19.OC	D2950	150.8	D2041	162.5	92	93		N/A	N/A		Sta. 3+50 WBL middle	Binder
8	4/24/09	4/24/09	RI19.OC	D2950	150.9	D2041	162.5	92	93		N/A	N/A		Sta. 4+00 WBL middle	Binder
9	4/24/09	4/24/09	RI19.OC	D2950	150.0	D2041	162.5	92	92		N/A	N/A		Sta. 4+50 WBL middle	Binder
10	4/24/09	4/24/09	RI19.OC	D2950	149.3	D2041	162.5	92	92		N/A	N/A		Sta. 0+25 EBL middle	Binder
11	4/24/09	4/24/09	RI19.OC	D2950	150.1	D2041	162.5	92	92		N/A	N/A		Sta. 0+75 EBL middle	Binder
12	4/24/09	4/24/09	RI19.OC	D2950	150.5	D2041	162.5	92	93		N/A	N/A		Sta. 1+25 EBL middle	Binder
13	4/24/09	4/24/09	RI19.OC	D2950	151.8	D2041	162.5	92	93		N/A	N/A		Sta. 1+75 EBL middle	Binder
14	4/24/09	4/24/09	RI19.OC	D2950	149.4	D2041	162.5	92	92		N/A	N/A		Sta. 2+25 EBL middle	Binder
15	4/24/09	4/24/09	RI19.OC	D2950	151.2	D2041	162.5	92	93		N/A	N/A		Sta. 2+75 EBL middle	Binder
16	4/24/09	4/24/09	RI19.OC	D2950	150.2	D2041	162.5	92	92		N/A	N/A		Sta. 3+25 EBL middle	Binder
17	4/24/09	4/24/09	RI19.OC	D2950	152.3	D2041	162.5	92	94		N/A	N/A		Sta. 3+75 EBL middle	Binder
18	4/24/09	4/24/09	RI19.OC	D2950	149.8	D2041	162.5	92	92		N/A	N/A		Sta. 4+00 EBL middle 30' S	Binder
19	4/24/09	4/24/09	RI19.OC	D2950	154.1	D2041	162.5	92	95		N/A	N/A		Sta. 4+45 EBL middle 45'S	Binder
20	4/24/09	4/24/09	RI19.OC	D2950	149.8	D2041	162.5	92	92		N/A	N/A		Sta. 4+45 EBL middle	Binder

* Failed Specified % Compaction ** Failed Specified Thickness All Test Locations and Elevations are Approximate

Notes: Thickness measurements beyond S&ME's scope of services for this project. Referenced "Target Density" based on information provided by .....

References: ASTM D 2950: Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods.

Distribution: Mark LaGrand/Earnhardt, Ted Manes/Duke Energy

Kyle Baucom
Name (Technical Responsibility)

Signature

Project Engineer
Position

S&ME

Summary of Asphalt Density Test Results

Project Name: Duke Allen Steam Station Ash. LF
Client: Duke Energy Corporation

Report Date: June 30, 2009
Project No.: 1356-06-825

Test		Date Paved	Mix Type	In-Place Density Test		Reference Standard		Compaction		Thickness		Location	Elevation
No.	Date			Type ASTM	Density PCF	Type ASTM	Target Density PCF	Percent Specified	Percent In-Place	Percent Specified	Percent In-Place		
21	4/25/09	4/25/09	RS12.5C	D2950	152.1	D2041	160.4	92	95	N/A	N/A	Sta. 4+45 EBL 45' South	Surface
22	4/25/09	4/25/09	RS12.5C	D2950	153.6	D2041	160.4	92	96	N/A	N/A	Sta. 4+00 EBL middle 25' South	Surface
23	4/25/09	4/25/09	RS12.5C	D2950	163.5	D2041	160.4	92	102	N/A	N/A	Sta. 4+50 EBL middle	Surface
24	4/25/09	4/25/09	RS12.5C	D2950	154.6	D2041	160.4	92	96	N/A	N/A	Sta. 4+00 EBL middle	Surface
25	4/25/09	4/25/09	RS12.5C	D2950	147.7	D2041	160.4	92	92	N/A	N/A	Sta. 3+50 EBL middle	Surface
26	4/25/09	4/25/09	RS12.5C	D2950	158.6	D2041	160.4	92	99	N/A	N/A	Sta. 3+00 EBL middle	Surface
27	4/25/09	4/25/09	RS12.5C	D2950	147.9	D2041	160.4	92	92	N/A	N/A	Sta. 2+50 EBL middle	Surface
28	4/25/09	4/25/09	RS12.5C	D2950	149.1	D2041	160.4	92	93	N/A	N/A	Sta. 2+00 EBL middle	Surface
29	4/25/09	4/25/09	RS12.5C	D2950	147.2	D2041	160.4	92	92	N/A	N/A	Sta. 4+25 WBL middle	Surface
30	4/25/09	4/25/09	RS12.5C	D2950	149.9	D2041	160.4	92	93	N/A	N/A	Sta. 3+75 WBL middle	Surface
31	4/25/09	4/25/09	RS12.5C	D2950	148.6	D2041	160.4	92	93	N/A	N/A	Sta. 3+25 WBL middle	Surface
32	4/25/09	4/25/09	RS12.5C	D2950	149.7	D2041	160.4	92	93	N/A	N/A	Sta. 2+75 WBL middle	Surface
33	4/25/09	4/25/09	RS12.5C	D2950	149.8	D2041	160.4	92	93	N/A	N/A	Sta. 2+25 WBL middle	Surface
34	4/25/09	4/25/09	RS12.5C	D2950	149.3	D2041	160.4	92	93	N/A	N/A	Sta. 1+75 WBL middle	Surface
35	4/25/09	4/25/09	RS12.5C	D2950	150.9	D2041	160.4	92	94	N/A	N/A	Sta. 1+25 WBL middle	Surface
36	4/25/09	4/25/09	RS12.5C	D2950	152.6	D2041	160.4	92	95	N/A	N/A	Sta. 0+75 WBL middle	Surface
37	4/25/09	4/25/09	RS12.5C	D2950	150.6	D2041	160.4	92	94	N/A	N/A	Sta. 0+25 WBL middle	Surface
38	4/25/09	4/25/09	RS12.5C	D2950	147.2	D2041	160.4	92	92	N/A	N/A	Sta. 1+50 EBL middle	Surface
39	4/25/09	4/25/09	RS12.5C	D2950	152.0	D2041	160.4	92	95	N/A	N/A	Sta. 1+00 EBL middle	Surface
40	4/25/09	4/25/09	RS12.5C	D2950	157.9	D2041	160.4	92	98	N/A	N/A	Sta. 0+50 EBL middle	Surface

* Failed Specified % Compaction ** Failed Specified Thickness

All Test Locations and Elevations are Approximate

Notes: Thickness measurements beyond S&ME's scope of services for this project. Referenced "Target Density" based on information provided by .....

References: ASTM D 2950: Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods.

Distribution: Mark LaGrand/Earnhardt, Ted Manes/Duke Energy

Kyle Baucom
Name (Technical Responsibility)

Signature

Project Engineer
Position

Concrete Test Reports

CONCRETE TEST REPORT

03/12/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45376

FIELD INFORMATION	FIELD TEST DATA		
Date Sampled: 02/11/2009	Mix Design No.: 40625 - .		
Sampled By: BH/JM	Admixture:		
Date Received in Lab: 02/12/2009	Design Compressive Strength: 4,000 psi based on 28 days of age		
Concrete Supplier: SCM #30	Test specimens fabricated in general accordance with ASTM C-31		
Truck No.: 9503	Slump: ASTM C143	Field:	4 1/2
Ticket No.: 63443		Specified:	
Time Batched: 09:52	Air Content: ASTM C231	Field:	4.0%
Time Sampled: 10:30		Specified:	%
Size of Load: 9.0 CY	Temperature: ASTM C1064	Concrete:	
Water Added on Site: 0 gal		Air:	
Authorized by:	Fresh Unit Weight: ASTM C138		149.5 pcf

CONCRETE PLACEMENT LOCATION

Formed Footing for Bridge East Side of Flow Pipes

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	02/18/2009	1F/6L	6.00	28.27	115,360	1.00	4,080	Columnar
2	7	02/18/2009	1F/6L	6.00	28.27	113,820	1.00	4,030	Cone & Split
3	28	03/11/2009	1F/27L	6.00	28.27	138,760	1.00	4,910	Columnar
4	28	03/11/2009	1F/27L	6.00	28.27	138,720	1.00	4,910	Columnar
5	56	04/08/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

CONCRETE TEST REPORT

03/20/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45457

FIELD INFORMATION	FIELD TEST DATA		
Date Sampled: 02/19/2009	Mix Design No.: 40625. - .		
Sampled By: A. Fincher	Admixture: Air Entrained		
Date Received in Lab: 02/20/2009	Design Compressive Strength: 4,000 psi based on 28 days of age		
Concrete Supplier: SCM	Test specimens fabricated in general accordance with ASTM C-31		
Truck No.: 3505	Slump: ASTM C143	Field:	3 1/2
Ticket No.: 22049		Specified:	
Time Batched: 12:34	Air Content: ASTM C231	Field:	3.8%
Time Sampled: 12:50		Specified:	%
Size of Load: 8.0 CY	Temperature: ASTM C1064	Concrete:	60 F
Water Added on Site: 5 gal		Air:	50 F
Authorized by:	Fresh Unit Weight: ASTM C138		150.8 pcf

CONCRETE PLACEMENT LOCATION

West side footing for Bridge

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	02/26/2009	1F/6L	6.00	28.27	114,510	1.00	4,050	Cone & Split
2	7	02/26/2009	1F/6L	6.00	28.27	123,460	1.00	4,370	Cone & Split
3	28	03/19/2009	1F/27L	6.00	28.27	143,020	1.00	5,060	Cone & Split
4	28	03/19/2009	1F/27L	6.00	28.27	142,610	1.00	5,040	Cone & Split
5	56	04/16/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

CONCRETE TEST REPORT

05/08/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45852

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 04/10/2009	Mix Design No.: 409 P - .
Sampled By: J.McCutcheon	Admixture:
Date Received in Lab: 04/11/2009	Design Compressive Strength: 4,000 psi based on 28 days of age
Concrete Supplier: Thomas #5	Test specimens fabricated in general accordance with ASTM C-31
Truck No.: M245	Slump: ASTM C143 — Field: 4 3/4 — Specified:
Ticket No.: 4732	
Time Batched: 09:31	Air Content: ASTM C231 — Field: 5.8% — Specified: %
Time Sampled: 10:00	
Size of Load: 6.0 CY	Temperature: ASTM C1064 — Concrete: 73 F — Air: 64 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 143.6 pcf

CONCRETE PLACEMENT LOCATION

Footings for Scales

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	04/17/2009	1F/6L	6.00	28.27	92,640	1.00	3,280	Columnar
2	7	04/17/2009	1F/6L	6.00	28.27	92,190	1.00	3,260	Columnar
3	28	05/08/2009	1F/27L	6.00	28.27	119,010	1.00	4,210	Columnar
4	28	05/08/2009	1F/27L	6.00	28.27	124,250	1.00	4,400	Columnar
5	56	06/05/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

CONCRETE TEST REPORT

06/19/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45948

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 04/24/2009	Mix Design No.: 409
Sampled By: J.McCutcheon	Admixture:
Date Received in Lab: 04/25/2009	Design Compressive Strength: 4,000 psi based on 28 days of age
Concrete Supplier: Thomas #514	Test specimens fabricated in general accordance with ASTM C-31
Truck No.: 2698	Slump: ASTM C143 — Field: 3 3/4
Ticket No.: 5987	Specified:
Time Batched: 08:18	Air Content: ASTM C231 — Field: 4.8%
Time Sampled: 09:25	Specified: %
Size of Load: 8.0 CY	Temperature: ASTM C1064 — Concrete: 75 F
Water Added on Site: 0 gal	Air: 67 F
Authorized by:	Fresh Unit Weight: ASTM C138

CONCRETE PLACEMENT LOCATION

(2) 11" Slabs for Tire Washout

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/01/2009	1F/6L	6.00	28.27	86,820	1.00	3,070	Columnar
2	7	05/01/2009	1F/6L	6.00	28.27	81,740	1.00	2,890	Columnar
3	28	05/22/2009	1F/27L	6.00	28.27	107,430	1.00	3,800 *	Cone & Split
4	28	05/22/2009	1F/27L	6.00	28.27	95,220	1.00	3,370 *	Columnar
5	56	06/19/2009	1F/55L	6.00	28.27	111,370	1.00	3,940 *	Cone & Split

Notes: F = Field Cured, L = Lab Cured

* = Less than design strength

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

CONCRETE TEST REPORT

05/28/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45976

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 04/28/2009	Mix Design No.: 409 . - 4000 AE
Sampled By: J.McCutcheon	Admixture:
Date Received in Lab: 04/29/2009	Design Compressive Strength: 4,000 psi based on 28 days of age
Concrete Supplier: Thomas #514	Test specimens fabricated in general accordance with ASTM C-31
Truck No.: 2697	Slump: ASTM C143 — Field: 3 — Specified:
Ticket No.: 6441	
Time Batched: 12:35	Air Content: ASTM C231 — Field: 3.5% — Specified: %
Time Sampled: 01:25	
Size of Load: 8.0 CY	Temperature: ASTM C1064 — Concrete: 82 F — Air: 80 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 144.2 pcf

CONCRETE PLACEMENT LOCATION

3rd Slab 11" for the Wash Area

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/05/2009	1F/6L	6.00	28.27	124,760	1.00	4,410	Cone & Split
2	7	05/05/2009	1F/6L	6.00	28.27	132,640	1.00	4,690	Cone & Split
3	28	05/26/2009	1F/27L	6.00	28.27	158,760	1.00	5,620	Cone & Split
4	28	05/26/2009	1F/27L	6.00	28.27	135,050	1.00	4,780	Cone & Split
5	56	06/23/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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CONCRETE TEST REPORT

05/29/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45977

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 04/29/2009	Mix Design No.: 409 . - 4000 AE Admixture: Design Compressive Strength: 4,000 psi based on 28 days of age
Sampled By: J.McCutcheon	
Date Received in Lab: 04/30/2009	Test specimens fabricated in general accordance with ASTM C-31
Concrete Supplier: Thomas #514	
Truck No.: MX14	Slump: ASTM C143 — Field: 4 1/2 — Specified:
Ticket No.: 6530	
Time Batched: 08:05	Air Content: ASTM C231 — Field: 3.4% — Specified: %
Time Sampled: 08:40	
Size of Load: 8.0 CY	Temperature: ASTM C1064 — Concrete: 70 F — Air: 74 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 146.9 pcf

CONCRETE PLACEMENT LOCATION

1st Slab Seal Area Adj. Asphalt Paving

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/06/2009	1F/6L	6.00	28.27	126,380	1.00	4,470	Cone & Split
2	7	05/06/2009	1F/6L	6.00	28.27	129,210	1.00	4,570	Cone & Split
3	29	05/28/2009	1F/28L	6.00	28.27	145,210	1.00	5,140	Columnar
4	29	05/28/2009	1F/28L	6.00	28.27	146,790	1.00	5,190	Columnar
5	56	06/24/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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CONCRETE TEST REPORT

05/29/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45993

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 04/30/2009 Sampled By: E. Alexander Date Received in Lab: 05/01/2009 Concrete Supplier: Thomas #514 Truck No.: 2693 Ticket No.: 000549 Time Batched: 07:27 Time Sampled: 08:25 Size of Load: 9.0 CY Water Added on Site: 0 gal Authorized by:	Mix Design No.: 409 . - . Admixture: Design Compressive Strength: 4,000 psi based on 28 days of age
	Test specimens fabricated in general accordance with ASTM C-31
	Slump: ASTM C143 — Field: 5 1/4 — Specified:
	Air Content: ASTM C231 — Field: 3.3% — Specified: %
	Temperature: ASTM C1064 — Concrete: 75 F — Air: 65 F
	Fresh Unit Weight: ASTM C138 — 143.2 pcf

CONCRETE PLACEMENT LOCATION
Scale approach Ramp

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/07/2009	1F/6L	6.00	28.27	133,710	1.00	4,730	Cone & Split
2	7	05/07/2009	1F/6L	6.00	28.27	131,130	1.00	4,640	Cone & Split
3	29	05/29/2009	1F/28L	6.00	28.27	160,370	1.00	5,670	Columnar
4	29	05/29/2009	1F/28L	6.00	28.27	160,170	1.00	5,670	Columnar
5	56	06/25/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments: Set 1 of 2

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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CONCRETE TEST REPORT

05/29/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45994

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 04/30/2009 Sampled By: E. Alexander Date Received in Lab: 05/01/2009 Concrete Supplier: Thomas #514 Truck No.: 2707 Ticket No.: 001560 Time Batched: 12:18 Time Sampled: 01:10 Size of Load: 8.0 CY Water Added on Site: 0 gal Authorized by:	Mix Design No.: 409 - 1 - 4000 Admixture: Design Compressive Strength: 4,000 psi based on 28 days of age Test specimens fabricated in general accordance with ASTM C-31 Slump: ASTM C143 — Field: 4 — Specified: Air Content: ASTM C231 — Field: 1.2% — Specified: % Temperature: ASTM C1064 — Concrete: 80 F — Air: 86 F Fresh Unit Weight: ASTM C138 — 146.4 pcf

CONCRETE PLACEMENT LOCATION
Tire Wash Station Footing

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
6	7	05/07/2009	1F/6L	6.00	28.27	136,430	1.00	4,830	Cone & Split
7	7	05/07/2009	1F/6L	6.00	28.27	137,630	1.00	4,870	Cone & Split
8	29	05/29/2009	1F/28L	6.00	28.27	160,660	1.00	5,680	Columnar
9	29	05/29/2009	1F/28L	6.00	28.27	166,200	1.00	5,880	Cone & Shear
10	56	06/25/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments: Set 2 of 2

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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CONCRETE TEST REPORT

06/04/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 46027

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 05/07/2009	Mix Design No.: 409 . - 4000 AE Admixture: Design Compressive Strength: 4,000 psi based on 28 days of age
Sampled By: J. Addis	
Date Received in Lab: 05/08/2009	Test specimens fabricated in general accordance with ASTM C-31
Concrete Supplier: Thomas #514	
Truck No.: 21	Slump: ASTM C143 — Field: 5 — Specified:
Ticket No.: 7245	
Time Batched: 09:36	Air Content: ASTM C231 — Field: 3.3% — Specified: %
Time Sampled: 10:15	
Size of Load: 6.0 CY	Temperature: ASTM C1064 — Concrete: 77 F — Air: 71 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 145.6 pcf

CONCRETE PLACEMENT LOCATION

South Scale End. Depart Slab & Dragon Wing Slabs forTire Wash

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/14/2009	1F/6L	6.00	28.27	128,060	1.00	4,530	Columnar
2	7	05/14/2009	1F/6L	6.00	28.27	125,350	1.00	4,430	Columnar
3	28	06/04/2009	1F/27L	6.00	28.27	152,620	1.00	5,400	Columnar
4	28	06/04/2009	1F/27L	6.00	28.27	155,770	1.00	5,510	Cone & Split
5	56	07/02/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

CONCRETE TEST REPORT

06/01/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 45998

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 05/01/2009	Mix Design No.: 409 . - .
Sampled By: E. Alexander	Admixture:
Date Received in Lab: 05/05/2009	Design Compressive Strength: 4,000 psi based on 28 days of age
Concrete Supplier: Thomas #514	Test specimens fabricated in general accordance with ASTM C-31
Truck No.: 2707	Slump: ASTM C143 — Field: 2 3/4 — Specified:
Ticket No.: 001566	
Time Batched: 07:30	Air Content: ASTM C231 — Field: 2.6% — Specified: %
Time Sampled: :	
Size of Load: 6.0 CY	Temperature: ASTM C1064 — Concrete: 78 F — Air: 68 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 145.8 pcf

CONCRETE PLACEMENT LOCATION
Slab East of Approach Ramp

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/08/2009	4F/3L	6.00	28.27	152,140	1.00	5,380	Columnar
2	7	05/08/2009	4F/3L	6.00	28.27	151,860	1.00	5,370	Columnar
3	29	05/30/2009	4F/25L	6.00	28.27	194,030	1.00	6,860	Cone & Split
4	29	05/30/2009	4F/25L	6.00	28.27	193,200	1.00	6,830	Cone & Split
5	56	06/26/2009	4F/52L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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CONCRETE TEST REPORT

06/09/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 46052

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 05/12/2009	Mix Design No.: 409 PC - .
Sampled By: E. Alexander	Admixture:
Date Received in Lab: 05/13/2009	Design Compressive Strength: 4,000 psi based on 28 days of age
Concrete Supplier: Thomas #514	Test specimens fabricated in general accordance with ASTM C-31
Truck No.: MX22	Slump: ASTM C143 — Field: 3 — Specified:
Ticket No.: 001644	
Time Batched: 08:53	Air Content: ASTM C231 — Field: 3.8% — Specified: %
Time Sampled: 09:30	
Size of Load: 9.0 CY	Temperature: ASTM C1064 — Concrete: 71 F — Air: 62 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 142.1 pcf

CONCRETE PLACEMENT LOCATION

South End Ramp S.O.G.

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/19/2009	1F/6L	6.00	28.27	128,290	1.00	4,540	Cone & Split
2	7	05/19/2009	1F/6L	6.00	28.27	123,630	1.00	4,370	Cone & Split
3	28	06/09/2009	1F/27L	6.00	28.27	159,270	1.00	5,630	Cone & Shear
4	28	06/09/2009	1F/27L	6.00	28.27	162,840	1.00	5,760	Cone & Shear
5	56	07/07/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME. Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

CONCRETE TEST REPORT

06/11/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 46064

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 05/14/2009	Mix Design No.: 409 . - .
Sampled By: J. Addis	Admixture:
Date Received in Lab: 05/15/2009	Design Compressive Strength: 4,000 psi based on 28 days of age
Concrete Supplier: Thomas	Test specimens fabricated in general accordance with ASTM C-31
Truck No.: 2693	Slump: ASTM C143 — Field: 4 1/2 — Specified:
Ticket No.: 7949	
Time Batched: 12:20	Air Content: ASTM C231 — Field: 4.0% — Specified: %
Time Sampled: 01:00	
Size of Load: 9.0 CY	Temperature: ASTM C1064 — Concrete: 81 F — Air: 75 F
Water Added on Site: 0 gal	
Authorized by:	Fresh Unit Weight: ASTM C138 — 146.6 pcf

CONCRETE PLACEMENT LOCATION

11 inch slab #8 and apron around tire wash

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/21/2009	1F/6L	6.00	28.27	132,720	1.00	4,690	Cone & Split
2	7	05/21/2009	1F/6L	6.00	28.27	129,870	1.00	4,590	Columnar
3	28	06/11/2009	1F/27L	6.00	28.27	161,300	1.00	5,710	Cone & Split
4	28	06/11/2009	1F/27L	6.00	28.27	158,550	1.00	5,610	Cone & Split
5	56	07/09/2009	1F/55L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

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CONCRETE TEST REPORT

06/12/2009

Project Name: Duke Allen Steam Stat. Ash. LF
Client: Duke Energy Corporation

S&ME Project No. 1356-06-825
Laboratory No. 46074

FIELD INFORMATION	FIELD TEST DATA
Date Sampled: 05/15/2009 Sampled By: J. Addis Date Received in Lab: 05/17/2009 Concrete Supplier: Thomas #514 Truck No.: 2707 Ticket No.: 8080 Time Batched: 08:25 Time Sampled: 09:05 Size of Load: 9.0 CY Water Added on Site: 5 gal Authorized by:	Mix Design No.: 409 . - . Admixture: Design Compressive Strength: 4,000 psi based on 28 days of age Test specimens fabricated in general accordance with ASTM C-31 Slump: ASTM C143 — Field: 3 1/2 — Specified: Air Content: ASTM C231 — Field: 3.7% — Specified: % Temperature: ASTM C1064 — Concrete: 80 F — Air: 70 F Fresh Unit Weight: ASTM C138 — 145.8 pcf

CONCRETE PLACEMENT LOCATION

Slab #7

LABORATORY COMPRESSIVE STRENGTH TEST RESULTS
(6+/-0.02" x 12" Cylinder tested in accordance with ASTM C39 unless otherwise noted)

CYL. NO.	Age (Days)	Date Tested	Type Curing	Diameter (inches)	Area (sq.in.)	Load (lbs)	L/D Factor	Strength (psi)	Fracture Type
1	7	05/22/2009	2F/5L	6.00	28.27	137,840	1.00	4,880	Cone & Split
2	7	05/22/2009	2F/5L	6.00	28.27	129,570	1.00	4,580	Cone & Split
3	28	06/12/2009	2F/26L	6.00	28.27	157,700	1.00	5,580	Cone & Split
4	28	06/12/2009	2F/26L	6.00	28.27	161,080	1.00	5,700	Cone & Split
5	56	07/10/2009	2F/54L	6.00	28.27	HOLD	1.00		

Notes: F = Field Cured, L = Lab Cured

Comments:

Distribution: Mark LaGrand/Earnhardt(EMAIL), Ted Manes/Duke Energy(EMAIL)

Kyle Baucom/S&ME, Inc.		Staff Professional
Name (Technical Responsibility)	*Signature*	*Position*

S&ME, Inc. 9751 So. Pine Blvd., Charlotte, NC 28273 (704) 523-4726 Fax (704) 525-3953

Pump Submittal

GunnCo

Pump & Control, Inc.
P.O. Box 3022 Cumming, GA 30028
125 E Enterprise Drive, Cumming, GA 30040
Phone: 770-889-7114 Fax: 770-889-2754

TRANSMITTAL

Date: 02/24/09
Project: Allen Steam Station - Ash Landfill
GunnCo Job #: 2237

TO: Crowder Construction Company
1990 New Cut Road
Spartanburg, SC 29303

Attention: Mr. Brad Hughey

Attached is a Adobe pdf copy of GunnCo Sidesloper™ leachate pumping system engineering submittals for the Allen Steam Station Ash Landfill Project for your review.

Please advise if paper copies are required.

Please return a approved copy or fax cover and any notes/changes. Production of equipment will only start after submittal approval.

I trust you will find the submittal in order and urge you to give me a call with any questions or if you need additional information.

Best regards,

Andre Steyn
GunnCo Pump & Control, Inc.

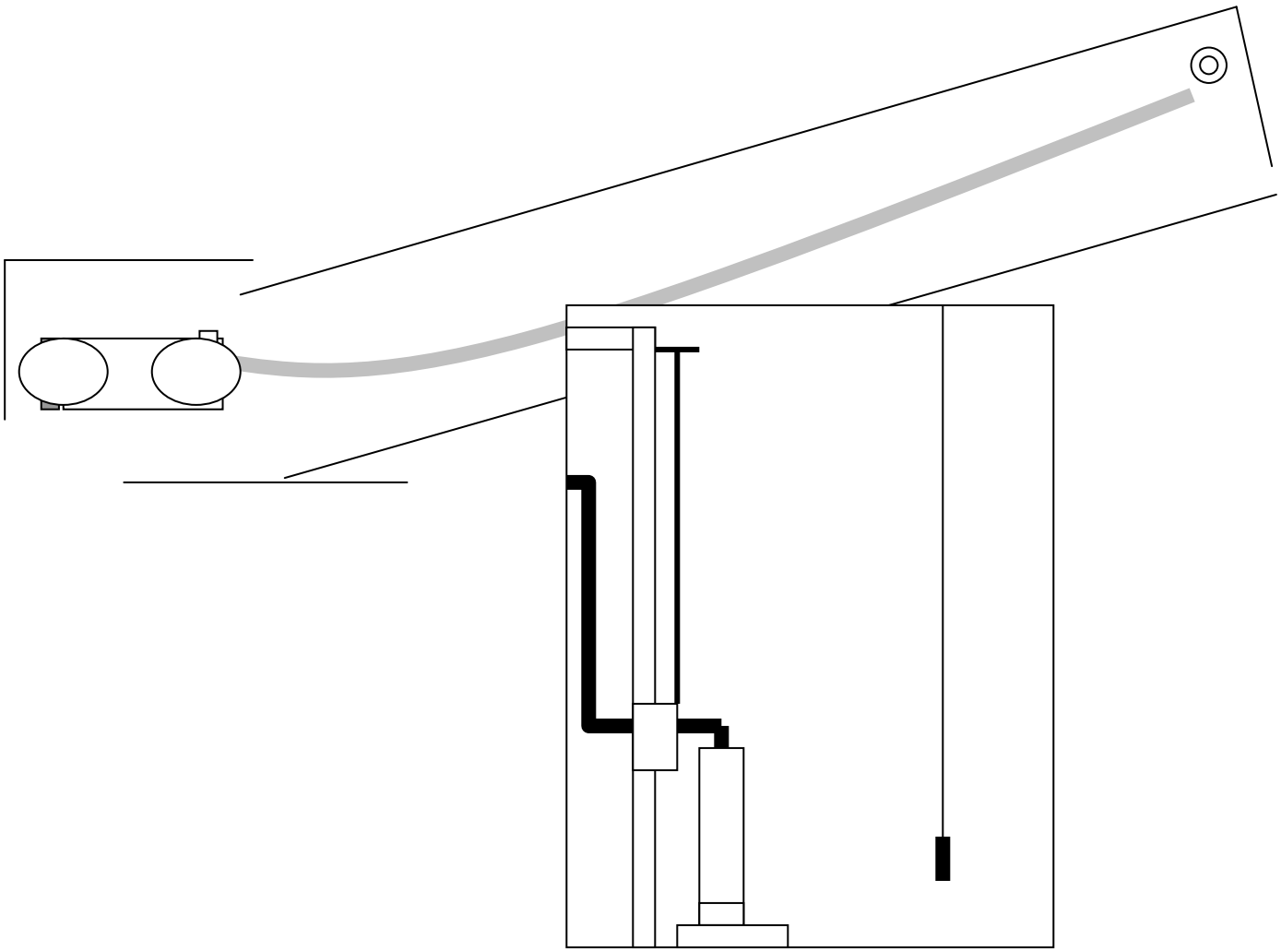
GunnCo Pump & Control, Inc.

Sideslopper™ Pump

Submittals

Allen Steam Station Ash Landfill
Contractor: Crowder Construction

GunnCo Reference # 2237



GunnCo Pump & Control Inc.
Sidesloper™ Leachate Pumping System

Project: Allen Steam Station Ash Landfill
GunnCo Project Reference # 2237

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GunnCo Pump & Control Inc.

*Sideslope*r™ Leachate Pumping System

Contact Information
For technical questions, replacement parts, or service contact GunnCo.

Mailing address: P.O. Box 3022
Cumming, GA 30028

Shipping address: 125-G Enterprise Drive
Cumming, GA 30040

Phone: 770-889-7114
Fax # : 770-889-2754
e-mail: andre@gunnco.com
Emergency #: 404-316-3131

www.gunnco.com www.landfillpumps.com

GunnCo *Sidesloper* Leachate Pumping System

Project Equipment List GunnCo Project Reference #2237

Allen Steam Station Ash Landfill

Submersible Leachate Pumps Cell A

Main Leachate Pumps:

1 x GunnCo model P2K 25.3 pumps with 1.5" hose in the pump riser, Our offer includes for 1.5" discharge hose and exit fittings and will terminate at the top of the riser with a GunnCo 1.5 inch exit fitting.
1 x GunnCo model P2K 230.2 pumps with 3" hose in the pump riser, Our offer includes for 3" discharge hose and exit fittings and will terminate at the top of the riser with a GunnCo 3 inch exit fitting
1 x Duplex Control Panel GC 201 to run pumps in either hand or auto with the small pump being the first to run and the large pump as backup if the small pump does not keep up.

Leak Detection Pumps:

2 x GunnCo model P2K 25.3 pumps with 1.5" hose in the pump riser, Our offer includes for 1.5" discharge hose and exit fittings and will terminate at the top of the riser with a GunnCo 1.5 inch exit fitting.
2 x Simplex Control panel – one for each leak detection pump.

Operations and Maintenance books.

System start-up, installation supervision and training.

Submersible Leachate Pumps Cell B

Main Leachate Pumps:

1 x GunnCo model P2K 25.3 pumps with 1.5” hose in the pump riser, Our offer includes for 1.5” discharge hose and exit fittings and will terminate at the top of the riser with a GunnCo 1.5 inch exit fitting.
1 x GunnCo model P2K 230.2 pumps with 3” hose in the pump riser, Our offer includes for 3” discharge hose and exit fittings and will terminate at the top of the riser with a GunnCo 3 inch
1 x Duplex Control Panel GC 201 to run pumps in either hand or auto with the small pump being the first to run and the large pump as backup if the small pump does not keep up.

Leak Detection Pumps:

2 x GunnCo model P2K 25.3 pumps with 1.5” hose in the pump riser, Our offer includes for 1.5” discharge hose and exit fittings and will terminate at the top of the riser with a GunnCo 1.5 inch exit fitting.
2 x Simplex Control panel – one for each leak detection pump.

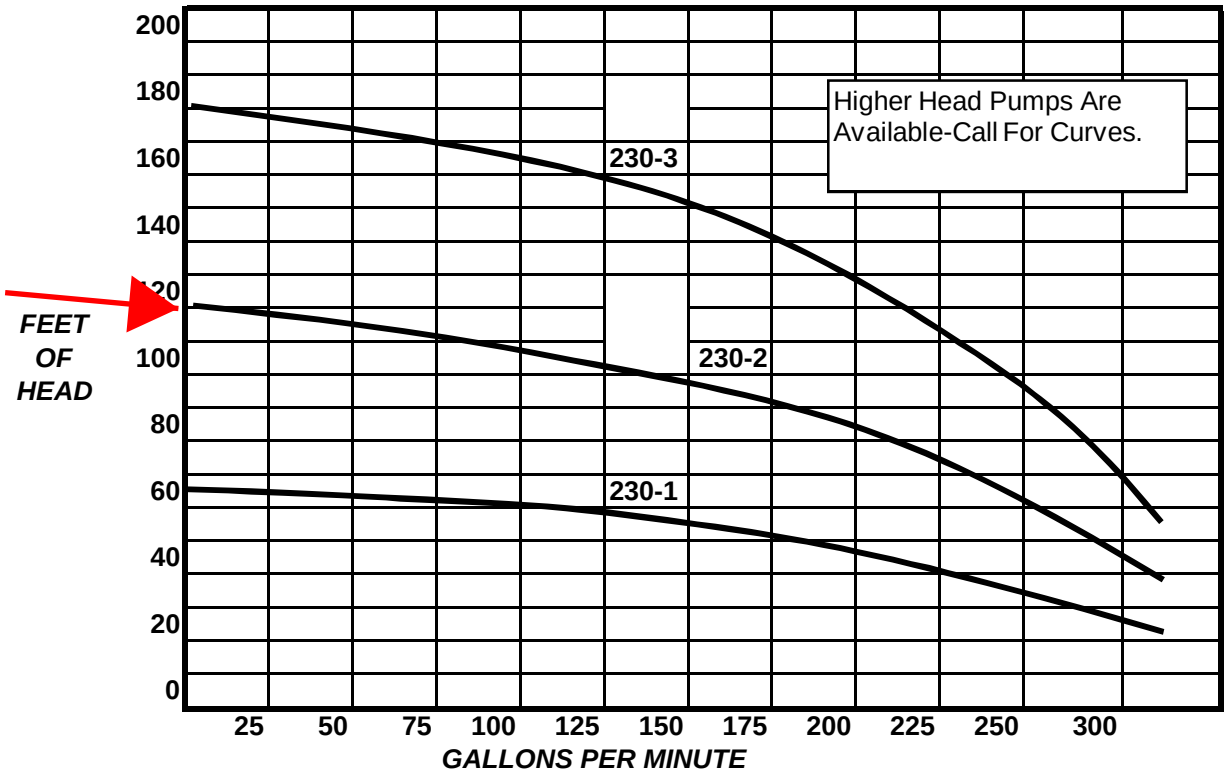
Operations and Maintenance books.

System start-up, installation supervision and training.

GunnCo .....Sidesloper ™ Pump

230 GALLONS PER MINUTE NOMINAL FLOW PUMP *P2K-230*

MULTI-STAGE TURBINE SIDE SLOPE EXTRACTION PUMP



PUMP	MODEL	H.P.	* "L"
P2K	230-1	5.0	55"
P2K	230-2	7.5	60"
P2K	230-3	10.0	55"

* "L" Represents maximum length Consult GunnCo for actual "L" dimension.

All pumps include wheeled carrier and are designed for application in 24" SDR 11 to 22 HDPE pipe.

Pumps may be ordered for use in 18" or other custom pipe sizes.

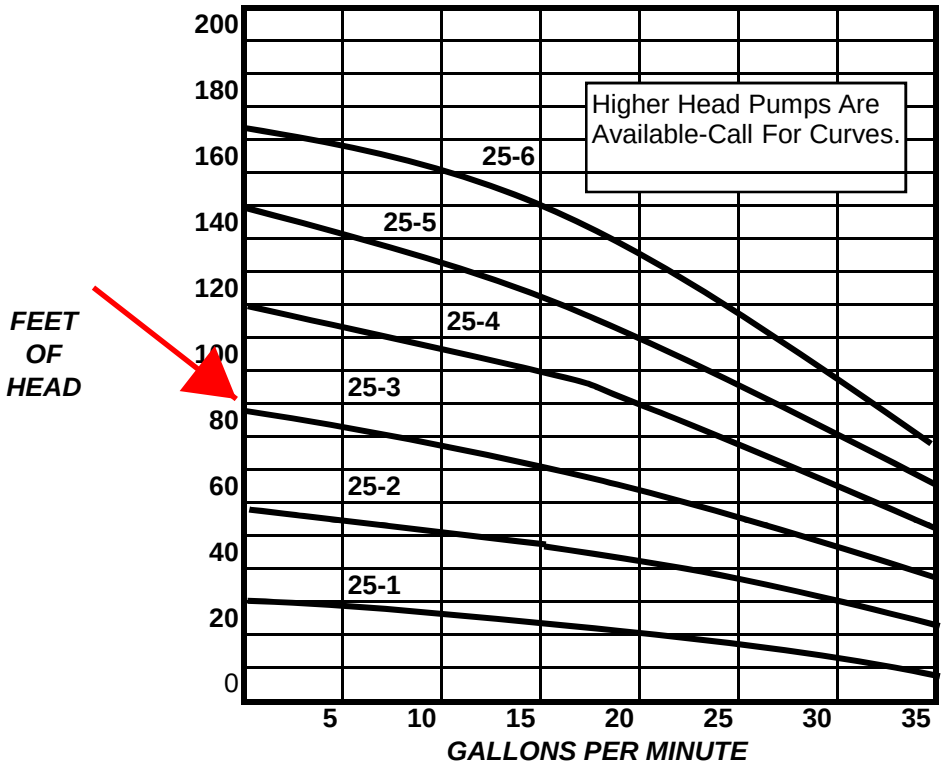
Pump construction is 304 stainless steel with bearings and seals of Teflon materials.

GunnCo .....Sidesloper TM Pump

25 GALLONS PER MINUTE NOMINAL FLOW PUMP

P2K-25

MULTI-STAGE TURBINE SIDE SLOPE EXTRACTION PUMP



PUMP	MODEL	H.P.	"L"
P2K	25-1	0.5	24"
P2K	25-2	0.5	24"
P2K	25-3	0.5	24"
P2K	25-4	0.75	24"
P2K	25-5	1.0	24"
P2K	25-6	1.0	24"

All pumps include wheeled carrier and are designed for application in 18" SDR 11 to 17 HDPE pipe.

Pumps may be ordered for use in 12" or 24" pipe sizes

Pump construction is 304 stainless steel with bearings and seals of Teflon materials.

Nominal 16 GPM rated pumps are available upon request.

MATERIALS OF CONSTRUCTION

Leachate Pump

Pump Model P2K 230.2

Check Valve Housing	304 Stainless Steel
Check Valve	304 Stainless Steel
Diffuser Chamber	304 Stainless Steel
Impeller	304 Stainless Steel
Suction Interconnector	304 Stainless Steel
Inlet Screen	304 Stainless Steel
Pump Shaft	431 Stainless Steel
Straps	304 Stainless Steel
Priming Inducer	304 Stainless Steel
Coupling	329/431 Stainless Steel
Check Valve Seat	Teflon/316 Stainless Steel
Top Bearing	Teflon/316 Stainless Steel
Impeller Seal Ring	Teflon/316 Stainless Steel
Intermediate Bearings	Teflon/316 Stainless Steel
Shaft Washer	LCP (Vectra®)
Split Cone	304 Stainless Steel
Split Cone Nut	304 Stainless Steel

MATERIALS OF CONSTRUCTION

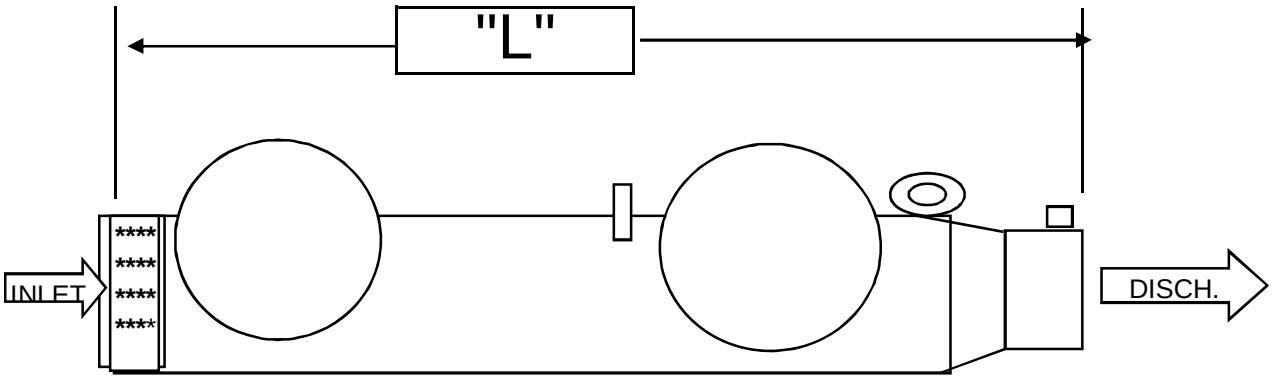
Leachate and Leak Detection Pumps

Pump Model P2K 25.3

Check Valve Housing	304 Stainless Steel
Check Valve	304 Stainless Steel
Diffuser Chamber	304 Stainless Steel
Impeller	304 Stainless Steel
Suction Interconnector	304 Stainless Steel
Inlet Screen	304 Stainless Steel
Pump Shaft	431 Stainless Steel
Straps	304 Stainless Steel
Priming Inducer	304 Stainless Steel
Coupling	329/431 Stainless Steel
Check Valve Seat	Teflon/316 Stainless Steel
Top Bearing	Teflon/316 Stainless Steel
Impeller Seal Ring	Teflon/316 Stainless Steel
Intermediate Bearings	Teflon/316 Stainless Steel
Shaft Washer	LCP (Vectra®)
Split Cone	304 Stainless Steel
Split Cone Nut	304 Stainless Steel

GunnCo.....*Sidesloper* TM *Pump*

Dimensional Data and Weights P2K Models



Pump Model	"L" Max.	Discharge Size	Est. Weight	Pull Cable	
P2K-16 (ALL)	24"	*1.25"	50 pounds max.	1/8"	18" RISER
P2K-25 (ALL)	24"	1.5"	50 pounds max.	1/8"	
P2K-40-1/2/3	24"	2.0"	50 pounds max.	1/8"	
P2K-40-4/5	36"	2.0"	60 pound max.	1/8"	
P2K-40-6/7	42"	2.0"	60 pound max.	1/8"	
P2K-60-1/2/3/4	36"	2.0"	60 pound max.	1/8"	
P2K-60-5	42"	2.0"	90 pound max.	3/16	
P2K-60-6 & 7	58"	2.0"	100 pound max.	3/16"	
P2K-60-8 & 9	63"	2.0"	100 pound max.	3/16	
P2K-75-1/2	36"	2.0"	60 pound max.	3/16	
P2K-75-3	36"	2.0"	60 pound max.	3/16"	
P2K-75-4/5	42"	2.0"	90 pound max.	3/16	
P2K-75-8	60"	2.0"	100 pound max.	3/16	
P2K-85-1	36"	3.0"	75 pound max.	3/16"	24" RISER
P2K-85-2	46"	3.0"	100 pound max.	3/16"	
P2K-85-3/4	55"	3.0"	130 pound max.	3/16"	
P2K-150-1	36"	3.0"	90 pound max.	3/16"	
P2K-150-2	55"	3.0"	110 pound max.	3/16"	
P2K-150-3	60"	3.0"	140 pound max.	3/16"	
P2K-230-1	55"	3.0"	100 pound max.	3/16"	
P2K-230-2	60"	3.0"	160 pound max.	3/16"	
P2K-230-3	55"	3.0"	200 pound max.	3/16"	
P2K-150-4	60	3.0	160 Pounds Max.	1/4"	

* Select 1.5" Discharge Hose.

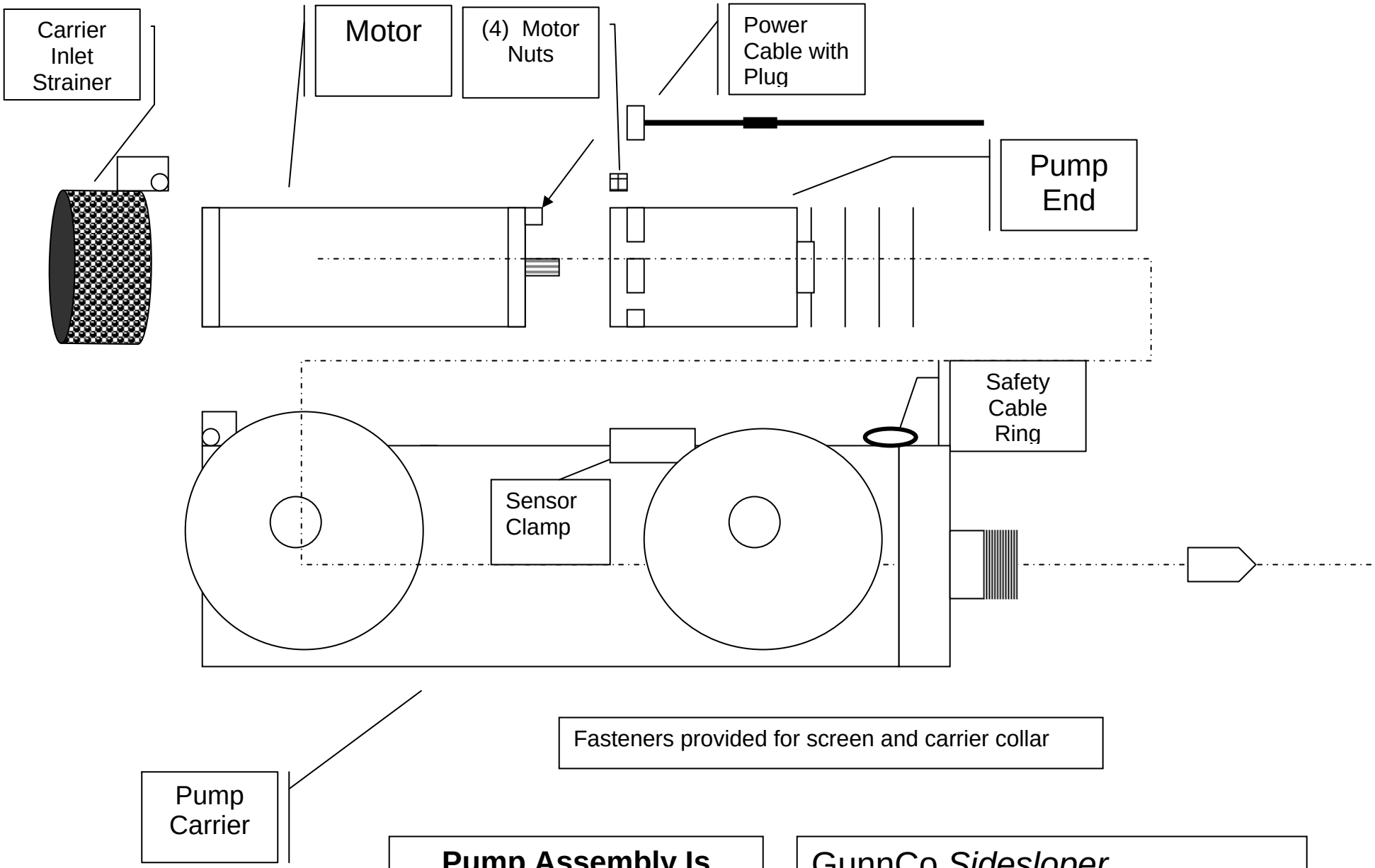
"L" Dimensions are maximum and may vary depending upon voltage and project requirements.

1/8" Pull Cable has 1760# breaking strength rating.

3/16" Pull Cable has 3700# breaking strength rating.

Optional 1/4" Pull Cable with 6400# breaking strength rating available.

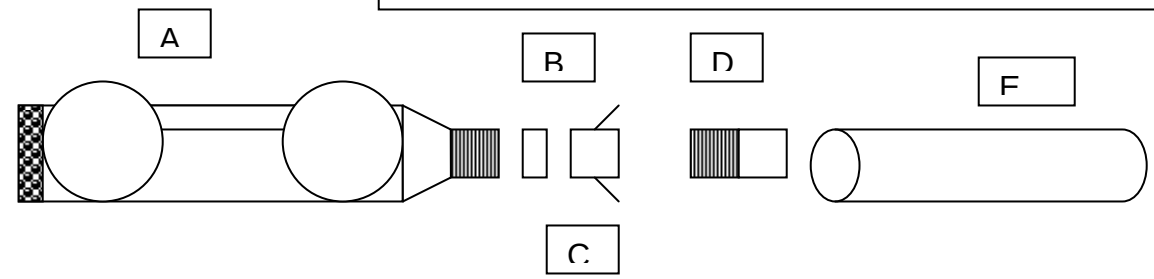
Data Subject To Change



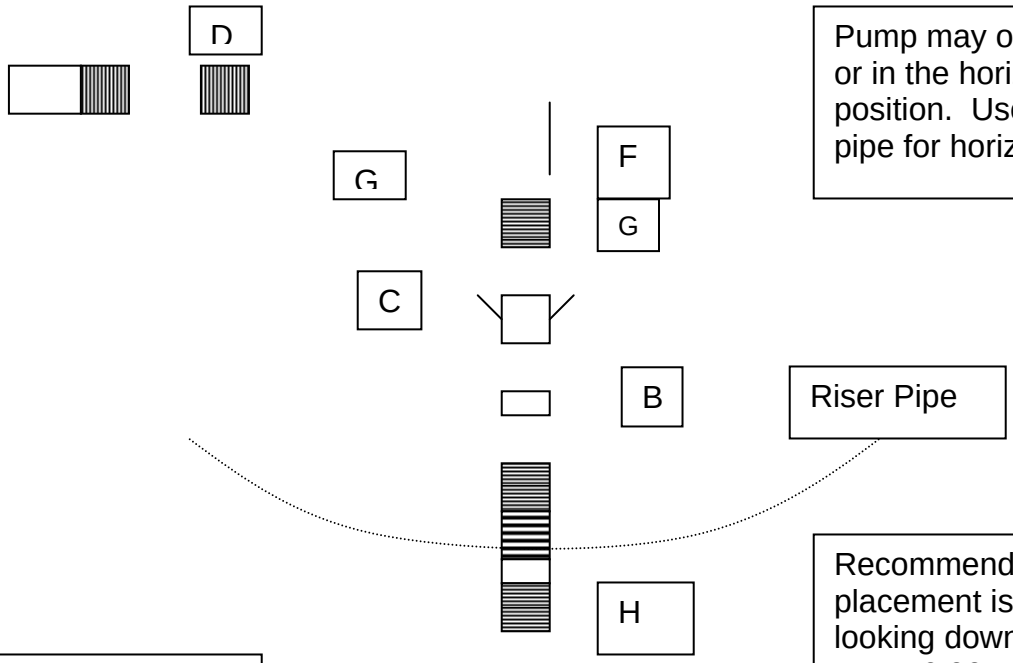
Pump Assembly Is Shipped Pre-Assembled

GunnCo *Sidesloper*
Model P2K Pump Assembly
Protected by U.S. Patent MBG 1.5.2K

Typical Sidesloper Layout Assembly – 1.5”, 2” and 3” detailed by components.



Pump may operate at the slope or in the horizontal discharge position. Use multi-miter riser pipe for horizontal operation.



Recommended exit nipple placement is at 3:00 or 9:00 looking down pipe. Exit may be set at 6:00 or 12:00 if required.

2.0 M-NPT To Valve Assembly

ITEM	QUANTITY	DESCRIPTION
A	1	Pump Assembly
B	2	Quick Coupler Type A SS
C	2	Quick Coupler Type D SS
D	2	SS Hose Shanks
E	60’	Hose
F	1	Elbow 90
G	3	Close Nipple SS
H	1	Exit Nipple

GunnCo Sidesloper 062006

Troubleshooting

PROBLEM	CAUSE	CORRECTION
Pump does not produce flow or enough flow	Pump is rotating in the wrong direction (three phase pump only).	Reverse two legs of motor leads and re-try.
	Pump is under sized for application.	Check pump size against actual system requirements.
	Pump is clogged.	Check pump inlet screen or for debris (sludge) in sump.
	Valve closed or hose/pipe pinched or collapsed. Leaking or disconnected hose or pipe.	Inspect hose/piping and be sure all valves are opened.
	Pump has excessive wear or internal clogging or damage	Service Pump-inspect discharge port & impeller.
Pump will not start	Not enough liquid in well to start pump	Check Level/Switch pump controller to "H" position
	No power at motor	Check incoming power/phase monitor and fuses.
	Power on but pump will not start-Contactor will not pull in	Check contactor coil-test in "H" Replace Motor Starter
	Defective power cable/wiring	Test/inspect wiring
	Motor locked up	Inspect Pump Inlet & Check Impeller
Tripped overload, breaker, or blown fuses	Motor locked up	Check Pump/Rebuild if Required
	Short Circuit in cable or wiring	Inspect cable/wiring-replace as required.
	Blown transformer fuses	Test/replace transformer
	Low voltage or phase loss	Test incoming power (auto reset)
	New Fuses Blown	Confirm correct size fuses

GunnCo *Sidesloper* ™

MODEL P2K MOTOR DATA 7.5HP, 3/460V/60

HORSE POWER	**:**	**7.5 hp**
PHASE	**:**	**3**
VOLTS	**:**	**460 volts**
FREQUENCY	**:**	**60 Hz**
SERVICE FACTOR	**:**	**1.15**
FULL LOAD AMPS	**:**	**10.9 amps**
AMPS @ SF	**:**	**12.3 amps**

Line to line Resistance	**:**	**2.4 – 2.9 ohms**
Locked rotor amps	**:**	**198.0 amps**

GunnCo *Sidesloper* ™

MODEL P2K MOTOR DATA 0.5HP, 3/460V/60

HORSE POWER	**:**	**0.5 hp**
PHASE	**:**	**3**
VOLTS	**:**	**460 volts**
FREQUENCY	**:**	**60 Hz**
SERVICE FACTOR	**:**	**1.15**
FULL LOAD AMPS	**:**	**1.2 amps**
AMPS @ SF	**:**	**1.5 amps**

Line to line Resistance	**:**	**38.4 – 44.1 ohms**
Locked rotor amps	**:**	**7.6 amps**

Applications

These motors are built for dependable operation in 6” diameter or larger water wells.

Basic Features

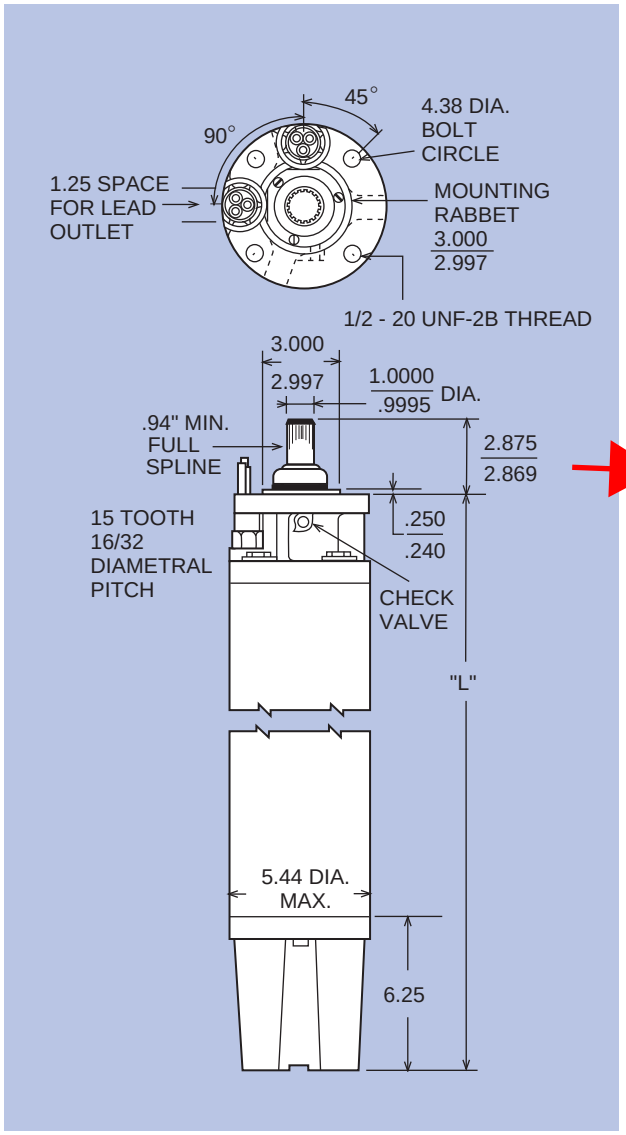
- Full 3450 RPM, 60 Hz Design Point
- Maximum Temperature Winding Wire NEMA Class 200
- Double Flange Design
- Stainless Steel Splined Shaft
- Hermetically-sealed Stator
- Resin Encapsulated Windings
- Stainless Steel Shell
- Epoxy Coated End Frames
- Filter Check Valve
- Kingsbury-type Water-lubricated Thrust Bearing
- Pressure-equalizing Diaphragm
- 3-Lead & 6-Lead (Wye-delta) Configurations
- Pre-filled with Temperature-resistant Fill Solution
- Sand Fighting Slinger
- Removable Water Bloc™ Lead
- Copper Bar Rotor
- Carbon Ceramic Rotating Face Seal
- Franklin-manufactured Control Boxes Available for Single-Phase Motors
- Worldwide Availability

Special Options

- Sand Fighter Models with special Silicon Carbide based sealing system available for applications with sand or other abrasives.
- 316 SS Construction available. All 316 SS motors include Sand Fighter sealing system and Subtrol Heat Sensor for use with SubMonitor protective devices.
- NiResist Construction available. All NiResist motors include a Sand Fighter sealing system and Subtrol Heat Sensor for use with SubMonitor protective devices.
- SubMonitor Motor Protection — A field proven and contractor friendly premium motor protection system. It protects the motor against overload, underload, overheating, and rapid cycling. The use of SubMonitor can also extend the motor warranty (see SubMonitor literature for details).

NOTE: Motor must be manufactured with Subtrol Heat Sensor.

6-Inch Dimensions and Weights



3-Lead Single-phase Motors

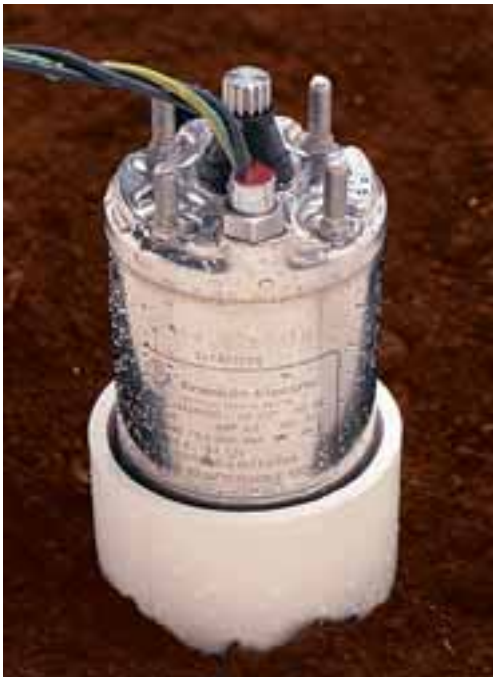
HP	KW	"L" (inches)	SHIPPING WEIGHT LBS	SHIPPING WEIGHT KG	MOTOR CARTON SIZE (in inches)
5	3.7	25.4	110	50	7.5 x 10.75 x 34.5
7.5	5.5	28.0	123	56	7.5 x 10.75 x 34.5
10	7.5	30.6	141	64	7.5 x 10.75 x 37
15	11	33.1	154	70	7.5 x 10.75 x 42.25

3-Lead Three-phase Motors

HP	KW	"L" (inches)	SHIPPING WEIGHT LBS	SHIPPING WEIGHT KG	MOTOR CARTON SIZE (in inches)
5	3.7	22.9	101	46	7.5 x 10.75 x 34.5
7.5	5.5	24.2	108	49	7.5 x 10.75 x 34.5
10	7.5	25.4	116	53	7.5 x 10.75 x 34.5
15	11	28.0	129	59	7.5 x 10.75 x 34.5
20	15	30.6	145	66	7.5 x 10.75 x 37
25	18.5	33.1	156	71	7.5 x 10.75 x 42.25
30	22	35.7	174	79	7.5 x 10.75 x 42.25
40	30	40.8	202	92	7.5 x 10.75 x 47.25
50	37	55.3	300	136	8.75 x 10.5 x 71.75
60	45	61.3	330	150	8.75 x 10.5 x 71.75

6-Lead Three-phase Motors

HP	KW	"L" (inches)	SHIPPING WEIGHT LBS	SHIPPING WEIGHT KG	MOTOR CARTON SIZE (in inches)
5	3.7	22.9	103	47	7.5 x 10.75 x 34.5
7.5	5.5	24.2	110	50	7.5 x 10.75 x 34.5
10	7.5	25.4	118	54	7.5 x 10.75 x 34.5
15	11	28.0	131	60	7.5 x 10.75 x 34.5
20	15	30.6	147	67	7.5 x 10.75 x 37
25	18.5	33.1	158	72	7.5 x 10.75 x 42.25
30	22	35.7	176	80	7.5 x 10.75 x 42.25
40	30	40.8	206	94	7.5 x 10.75 x 47.25
50	37	55.3	304	138	8.75 x 10.5 x 71.75
60	45	61.3	334	152	8.75 x 10.5 x 71.75



4" SUPER STAINLESS SUBMERSIBLE MOTORS

1/3 through 1 1/2 Hp - 2-wire: 1/3 through 3 Hp
Single-phase 115, 230 volt-60 Hz; 220 volt-50 Hz:
Three-phase 200, 230, 380, 460, 575 volt-60 Hz; 220, 380 volt-50 Hz

APPLICATION DATA

These motors are built for dependable operation in 4" diameter or larger water wells. Continuous rating in 86°F (30°C) water. Rotation: Single phase, CCW facing shaft end; three phase electrically reversible.

For further information, refer to Franklin Electric's "Submersible Motors: Application, Installation, Maintenance Manual."

SPECIAL FEATURES

- No flow inducer sleeve required in water up to 86°F (30°C) for motors through 2 Hp.
- Two-wire motors are split-phase designs with integral starting components and on-winding thermal overload protection, and do not require a control box. They feature FRANKLIN'S patented 2-wire BIAC starting switch which provides reverse impact torque to aid starting in adverse environments.
- Three-wire 60 Hz motors 1/3 - 1 Hp use FRANKLIN'S exclusive 3-wire QD (Quick-Disconnect) Control Box with the patented QD Relay. This relay provides the ultimate in operational life.

WARNINGS: Serious or fatal electrical shock or fire hazard may result from failure to follow the instructions for proper installation and use which accompany this equipment. Do not use motor in swimming areas.

BASIC FEATURES

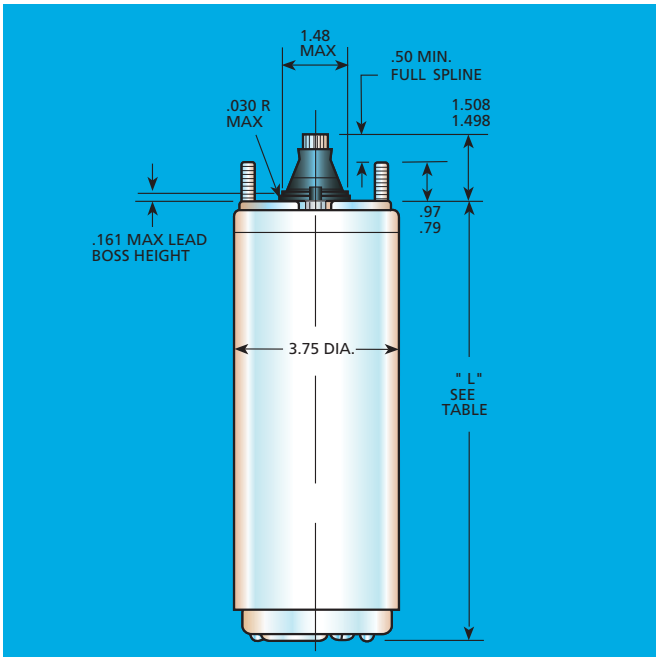
- Corrosion-Resistant All Stainless Steel Exterior Construction
- Stainless Steel Splined Shaft
- Hermetically-Sealed Windings
- Anti-Track Self-Healing Resin System
- Water Lubrication
- Filter Check Valve
- Kingsbury-Type Thrust Bearing
- Pressure Equalizing Diaphragm
- Built-In Lightning Arrestors (all single-phase; 200 and 230 volt three-phase)
- Removable "Water-Bloc" Lead Installed In North American 60 Hz Water Well Motors. Consult Factory For Additional Leads.
- UL 778 Recognized (North American Voltages)
- CSA Certified
- ANSI/NSF 61 Certified
- NEMA Mounting Dimensions

System Solutions

Franklin Electric

4" Super Stainless Submersible Motors

DIMENSIONS



CONSTRUCTION MATERIALS

Components	Standard Water Well
Castings	304 SS Over Iron
Stator Shell	301 SS
Shaft Extension	17-4 SS
Fasteners	305 SS or 302 SS
Seal Cover	Acetal
Seal	Nitrile Rubber Lip
Diaphragm	Nitrile Rubber
Diaphragm Cover	301 SS
Slinger	Nitrile Rubber
Lead Wire (or Cable)	XLPE ①
Lead Potting	Epoxy
Lead Jam Nut	303 SS

① Removable type installed in North American 60 Hz rated water well motors. Consult factory for additional leads.

Specifications subject to change without notice. Contact Franklin Electric if material types are required for bid specifications.

AVAILABILITY - *Single Phase (Consult Factory For Three Phase)*

2-Wire, Split Phase, 60Hz, 3450 RPM

HP	KW	VOLTS	"L" DIM	SHIPPING WEIGHT	
			INS	LBS	KGS
1/3	.25	115 OR 230	8.78	16	7.2
1/2	.37	115 OR 230	9.53	18	8.1
3/4	.55	230	10.66	21	9.5
1	.75	230	11.75	24	10.9
1 1/2	1.1	230	15.12	31	14.1

3-Wire, Capacitor Start, 60Hz, 3450 RPM ②

HP	KW	VOLTS	"L" DIM	SHIPPING WEIGHT	
			INS	LBS	KGS
1/3	.25	115 OR 230	8.78	17	7.7
1/2	.37	115 OR 230	9.53	19	8.6
3/4	.55	230	10.66	21	9.5
1	.75	230	11.75	24	10.9
1 1/2	1.1	230	13.62	28	12.7
2	1.5	230	15.12	33	15.0
3	2.2	230	19.06	41	18.6

2-Wire, Split Phase, 50Hz, 2875 RPM

HP	KW	VOLTS	"L" DIM	SHIPPING WEIGHT	
			INS	LBS	KGS
1/2	.37	220	9.53	18	8.1
3/4	.55	220	10.66	21	9.5
1	.75	220	11.75	24	10.9
1 1/2	1.1	220	15.12	31	14.1

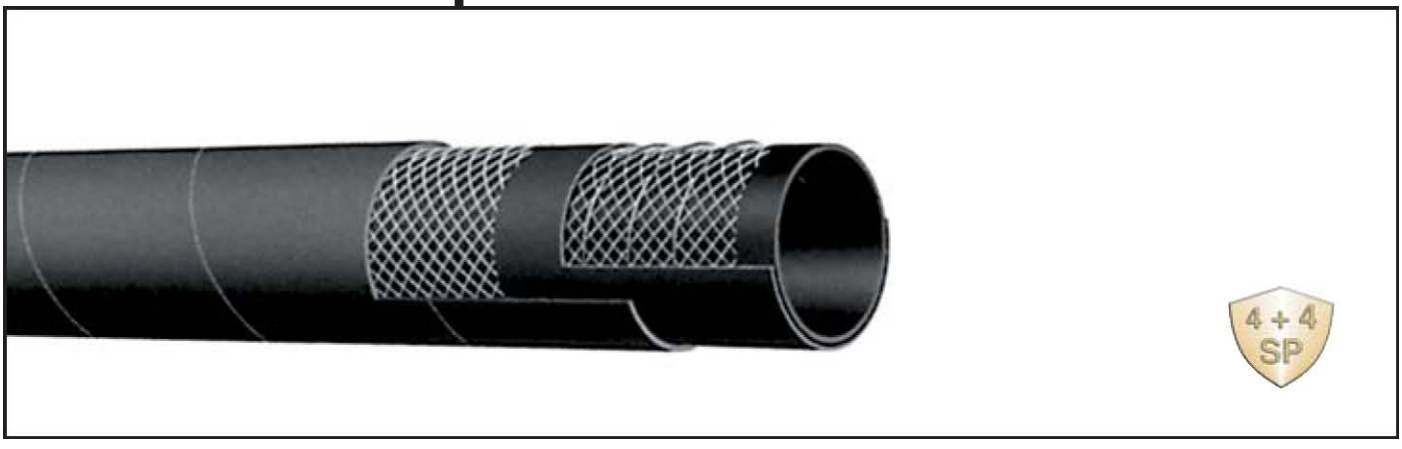
3-Wire, Capacitor Start, 50Hz, 2875 RPM ②

HP	KW	VOLTS	"L" DIM	SHIPPING WEIGHT	
			INS	LBS	KGS
1/3	.25	220	8.78	17	7.7
1/2	.37	220	9.53	19	8.6
3/4	.55	220	10.66	21	9.5
1	.75	220	11.75	24	10.9
1 1/2	1.1	220	13.62	28	12.7
2	1.5	220	15.12	33	15.0
3	2.2	220	19.06	41	18.6

② Franklin Electric control box required.

Franklin Electric
400 East Spring Street, Bluffton, Indiana 46714
Tel: 260.824.2900 Fax: 260.824.2909
www.franklin-electric.com

T202AA -150 PSI EPDM
Multi-Purpose Water Suction Hose



APPLICATION
Suction and delivery of non-corrosive liquids for irrigation, construction, fertilizers and lasso acid solutions.

COVER
Black weather and ozone-resistant EPDM rubber.

REINFORCEMENT
Spiralled high tensile textile cords and ***4*** highly flexible steel helix wires.

TUBE
Black EPDM rubber.

TEMPERATURE RANGE
-__°F to 176°F

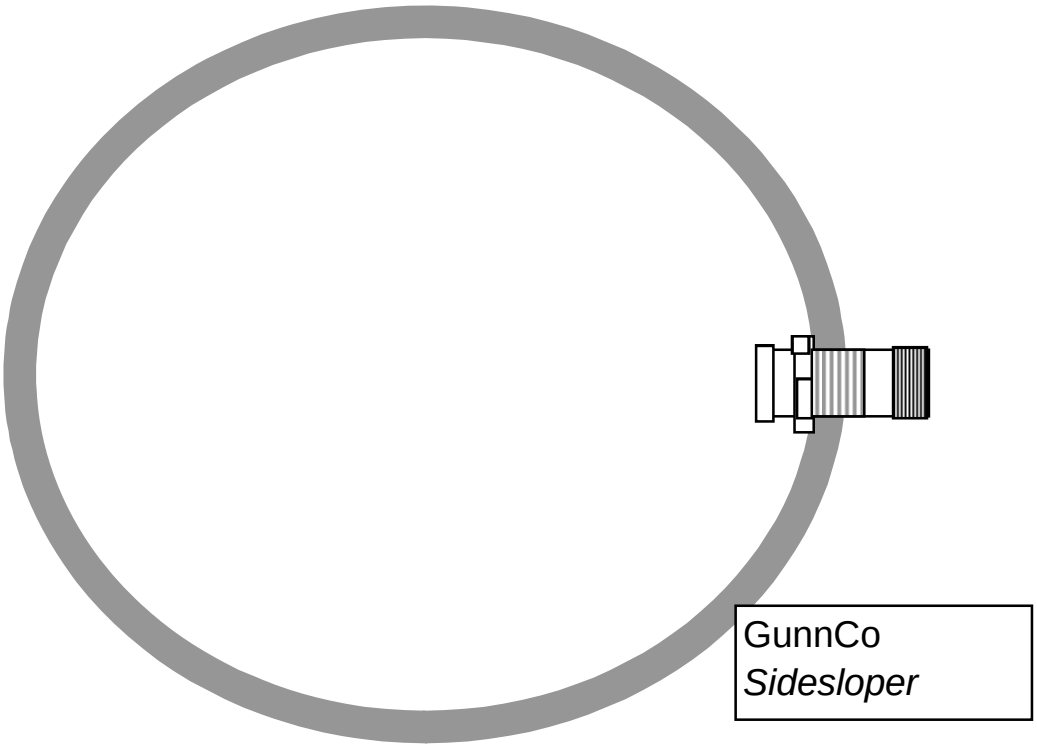
STANDARD LENGTH
100 feet: 1" through 6" _0, 50 feet: 5" _0, _5, 50 feet: 6" _0, _5 feet: 8"

BRANDING
ALFAGOMMA – ITALY – T_0_ 10 BAR (150 PSI) GENERAL PURPOSE EPDM (in green letters)

Specifications

SERIES NO.	NOMINAL ID		NOMINAL OD		APPROX. WT. lbs./100 ft.	MAX. REC. WP (PSI)	MIN. BEND RADIUS (in.)
	(in.)	(mm)	(in.)	(mm)			
T202AA100	1	25	1.38	35	54	150	4
T202AA125	1 1/4	32	1.65	42	65	150	5
T202AA150	1 1/2	38	1.89	48	75	150	6
T202AA200	2	51	2.40	61	97	150	8
T202AA250	2 1/2	63	2.95	75	129	150	10
T202AA300	3	76	3.46	88	154	150	12
T202AA350	3 1/2	90	4.02	102	190	150	14
T202AA400	4	102	4.49	114	213	150	16
T202AA500	5	127	5.55	141	334	150	25
T202AA600	6	152	6.54	166	417	150	30

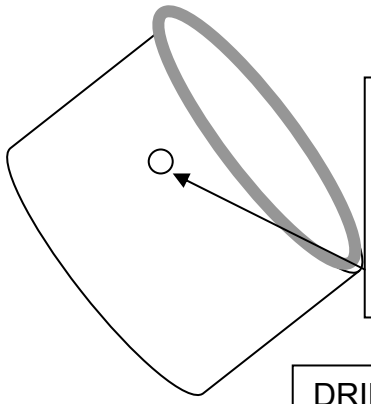
COUPLING SUGGESTIONS **Cam and groove, pin lug, short shank couplings or combination nipples attached with single bolt, double bolt, wire or band type clamps.**



Exit Nipple Installation

1) Drill hole to correct size at desired location.
2) Thread exit nipple into drilled hole. Hold at non-threaded boss area or attach end cap to turn. Extend into riser approximately 2".
3) Attach male cam & groove fitting- use thread paste.
4) Back up nipple until sholder of cam & groove fitting is against inside of riser pipe wall.

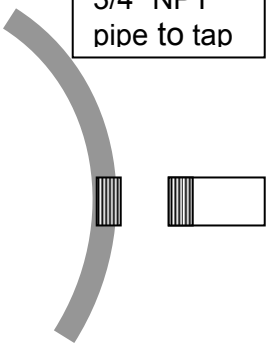
GunnCo *Sidesloper Pumps* *mbg1/2K*



Drill hole to correct size at desired location in upper part of sump.

DRILL (1) 3/4" & (1) 15/16" HOLE

2

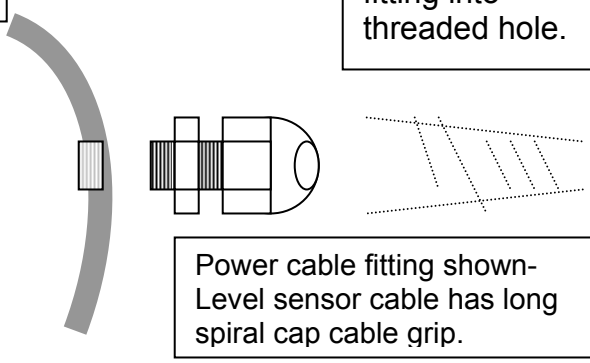


USE 1/2" & 3/4" NPT pipe to tap

Thread drilled hole to approx. 1/2" to 3/4" depth. This may be accomplished using a threaded pipe nipple-3-6" long. (thread into clean hole about 2/3 of threaded end of pipe).

3

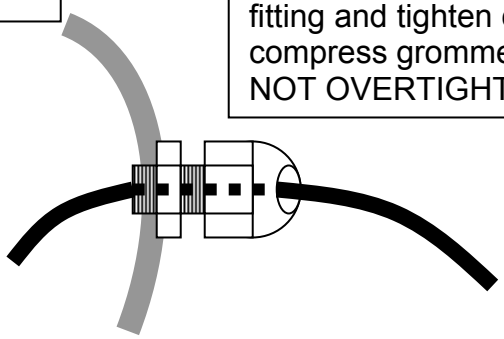
Install cable fitting into threaded hole.



Power cable fitting shown- Level sensor cable has long spiral cap cable grip.

4

Pull cable through cable fitting and tighten cap to compress grommet. DO NOT OVERTIGHTEN



Cable Fitting Installation

The GunnCo *Sidesloper* pumping system is provided with riser pipe cable exit fittings to provide a neat and gas tight seals and allow cables to exit from the side wall of the riser pipe. The fittings allow the cables to be easily disconnected and removed if required and prevents gas from the riser pipe from migrating through conduit into the control panel where it will corrode and damage electrical components. The fittings are non-metallic and will not corrode and swell. Level

A matching set of cable fittings may be provided for the cables to enter conduit junction or control box. This leaves a short section of cable exposed but ensures the gas does not enter the control panel. An alternate version of this sealing system is to install the cable fittings on the inside of the riser and threaded conduit fittings on the outside of the riser-call to request details.

Sideslopper™ PUMPING SYSTEM CONTROL
OPERATION-DUPLEX "GC" Series" 201 Panel

The controller should provide automatic operation. Under normal conditions the pump should operate with the H-O-A switches in the A or automatic position.

EXTERIOR MOUNTED COMPONENTS:

Top Alarm Light-(optional) Indicates HIGH liquid level condition. See individual indicators for cause.

Duplex Receptacle-(optional) Provides up to 5 amp 120v electrical service.

INTERIOR DOOR MOUNTED OPERATOR CONTROLS:

Main Breaker Disconnect Handle-The main turns power off to the controller. This switch must be turned to the OFF position to open the interior door.

H-O-A Switch – The H-O-A switch should remain in the "A" setting for automatic operation. The "H" setting or hand is for testing only.

Indicating Controller-This device displays the level in the sump in inches and provides the pump ON/OFF and high-level ON/OFF operation. Check current setting or re-adjust set points as follows:

1) PUMP 1 OFF-Turn center knob of the left to A-Reset. The current PUMP OFF set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.
2) PUMP 1 ON- Turn center knob of the left to A-Set. The current PUMP ON set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.
3) PUMP 2 OFF-Turn center knob of the left to B-Reset. The current PUMP OFF set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.
4) PUMP 2 ON- Turn center knob of the left to B-Set. The current PUMP ON set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed. PLEASE NOTE: The pump will not start in the "A" position unless the level has surpassed the ON setting.
5) HIGH ALARM OFF: Loop powered alarm set off. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.
6) HIGH ALARM ON : Loop powered alarm set on. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.

LED is provided to indicate that the A or B relays are ON when lit. The level display will also flash during a high level condition. Pump ON and OFF settings should be sufficient difference to prevent pump rapid cycle-pump should not restart for 10 minutes or more (typically hours) after pump shuts off.

Flow Meter (OPTION)-The digital flow meter provides rate of flow (GPM-gallons per minute) on the upper/larger digits, and total accumulated flow (gallons) on the lower digits. Total may accumulate to 99999999 if the decimal point is eliminated. The right side arrow button resets the total to "0" when pressed. See flow meter instructions.

RUN Light-indicates pump is called to operate.

PHASE or VOLTAGE FAULT/FAIL Light-Indicates a phase loss, improper voltage, reversed phase (three phase only), blown sensor fuses damaged, or damaged voltage or phase sensor. Sensor is adjustable and should be set to actual operating voltage at the time of start-up.

OVERLOAD Light-Indicates a motor starter overload has occurred.

HIGH LEVEL Light (OPTION) Indicates a high level condition exists. Under this condition the level indicating display will flash.

TANK FULL Light (OPTION) –Indicates that the pump will not operate in the "A" mode because the panel is receiving a signal via a pair of wires that the remote storage tank or sump is full. Under this condition the pump will operate in the "H" mode.

OVERLOAD Reset Button-Reset the motor starter overload.

ETM-elapsed run time meters indicate hours of pump operation (to 1/10th). Under normal conditions hours of operation should be similar for each pump. This information can be recorded to determine estimated flows for the system.

Breakers-The motor, control, (and optional receptacle) breakers are accessible from the interior door. A tripped breaker typically indicates a short circuit. Please note that there are also fuses in the interior for the transformer or control power or optional receptacle. See additional information in interior components section.

INTERIOR COMPONENTS: Should be serviced with power off or by a qualified service personnel. NOTE: Power will be present in the incoming wiring to the main disconnect.
----------ELECTRICAL HAZARD EXISTS!----------

Motor Breaker-Three pole circuit breaker-typically located on upper far right is provided for the short circuit protection and allow service of the system. If a breaker trips check for a short circuit and reset. If the breaker trips again there may be an electrical problem which should be checked by a qualified electrician. Motor breaker switches off primary voltage to the motor starter contactors and pump.

Control Breaker-Single pole control circuit breaker-Typically located left position of the motor breaker is provided for the short circuit protection and allow service of the system. If a breaker trips check for a short circuit and reset. If the breaker trips again there may be an electrical problem which should be checked by a qualified electrician. There is also a fuse between the breaker and the control circuit. at the transformer which Control breaker switches off 120v control power to operator control components.

Receptacle Breaker (OPTION) -Single pole circuit breaker-Typically located far left position of the motor breaker is provided for the short circuit protection and protection of the system. There is also a fuse between the breaker and the receptacle which typically may blow due to overloaded circuit (limit usage to 5 amp service).

Transformer and Fuses (if applicable) – The transformer provides low 120 volt power for the control operations. There are three fuses mounted on top of the transformers, The upper two are the incoming power (230/460 volt) and the lower fuse is the control circuit power (120 volt). When replacing fuses use the identical type and rating as originally provided.

Relays ("ICE CUBE" relays)-These are plug in style relays which work between the level controller/H-O-A switch and the motor starter coil (and where applicable the high level lights) which minimizes the wear of the level controller contacts. Coil voltage is 120v.

Motor Starter/Overload relay -Contains overload protection and magnetic coil to energizes to allow power to the pump. Red bar resets overloads. Coil voltage is 120v.

Voltage/Phase Monitor- Plug in style device monitor incoming power and detects and protects motor from high or low voltage, loss of phase, or reversed phase (on three phase models). A led light indicates proper operation and adjustable knob allows for setting the unit to the normal operating voltage range. If the range exceeds approximately 10% of the set point the pump will be prevented from operating (motor starter coil will not pull in) until the problem is corrected. If the LED will not come on with adjustment check voltage and the associated fuses. High voltage surges may damage monitor. GunnCo normally stocks replacement units. At start-up the operating voltage should be set. Voltage must be within the range of the monitor. On three phase systems, if the unit will not energize at start-up after adjustment of range setting, the phases may need to be reversed at the monitor-to accomplish switch any two legs.

ISB-Intrinsically Safe Barrier-This devices provides a safety for the level control voltage and must be used to ensure safe operation where the sensor is in a hazardous location. The barrier contain two replaceable fuses.

24VDC Power Supply (OPTION)-Supplies power to the voltage meter. Plugs into socket.

Lock Out Relay (OPTION) –Provides sensing of a closed contact (float switch or relay) up to 5000' away through a pair of wires and provides panel pump lock out circuit function. Plugs into socket.

Motor Saver (OPTION)-Monitors motor load and provides protection for pump dry run, "dead head", and a variety of voltage and phase protection when the panel is in the "A" mode. A fault CODE is provided after a fault event is detected. May be programmed for specific protection category and ranges including short cycle (delay start), phase unbalance, high/low voltage, delay period before restart, and number of restarts after a fault. Typically programmed to provide backup overload and voltage protection. See instructions for programming and fault codes.

Heater & Thermostat-An enclosure heater is provided to minimize the formation of condensate within the enclosure to help ensure electrical components maintain minimum operating temperatures. The thermostat is adjustable but should typically be set around 90 for effective operation. If condensate continues to exist increase thermostat setting to 100 and/or check for sources of liquid into the enclosure.

Bellows-The panel is equipped with a bellow breather device which connects to the transducer breather to provide a closed venting loop to allow the transducer diaphragm to adjust.

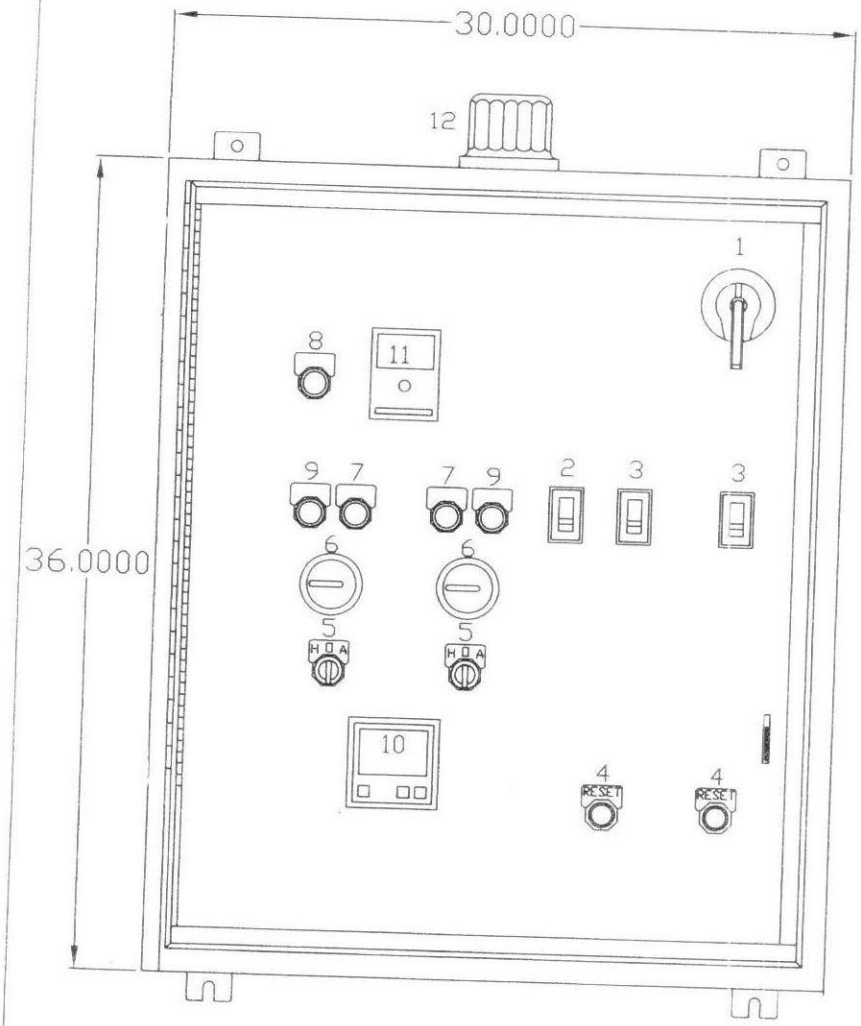
Surge Suppressor (110 Volt control circuit)-provides protection to the control circuit if a surge condition occurs. An indicating light is on when operating properly.

Surge Suppressor (24V/4-20Ma)-provide protection from surges entering panel from level sensor-Note that level sensor is also surge protected with an integral surge suppressor which is contained within the level sensor. If device damaged the signal between the sensor and the level indicating controller may will be lost and result in a negative level display of approximately –34.6. Also see ISB below.

TVSS Transient Voltage Surge Suppressor Lightning Arrestor-Square or rectangular device absorbs power line surges to protect the system. If the green LED light does not energize with power to the panel the unit may be no longer functional and replacement is required.

Lightning Capacitor-Cylinder Device mounted on the right of the enclosure. This device worked in conjunction to the Lightning Arrestor and is a "one shot" device, which absorbs high amperage line surges to protect the system. If a severe event occurs damage may be visual. If damaged the device should be immediate replaced. If damaged do not touch any exposed parts or wires.

Call GunnCo for assistance in operating and trouble shooting problems and for replacement parts or sources.
Our phone number is 770-889-7114.



OUTER DOOR HAS BEEN REMOVED FOR CLARITY

1 - MAIN BREAKER
2 - CONTROL BREAKER
3 - MOTOR BREAKER 1 & 2
4 - OVERLOAD RESET
5 - PUMP HAND-OFF-AUTO
6 - ELAPSE TIME METER
7 - PUMP RUN LIGHT
8 - PHASE FAIL LIGHT
9 - OVERLOAD LIGHT
10 - FLOWMETER (OPTIONAL)
11 - PUMP CONTROLLER
12 - AL ALARM LIGHT

TERMINAL STRIP E
ON BACK OF DF FOR
OPTIONAL EQUIPMENT

MODEL NO:
PROJECT: Allen Steam Station – Ash Landfill
DATE: 02/23/09
REVISION:

GUNNCO PUMP & CONTROL
125-G ENTERPRISE DRIVE
CUMMING, GA 30040
TEL. 770-889-7114

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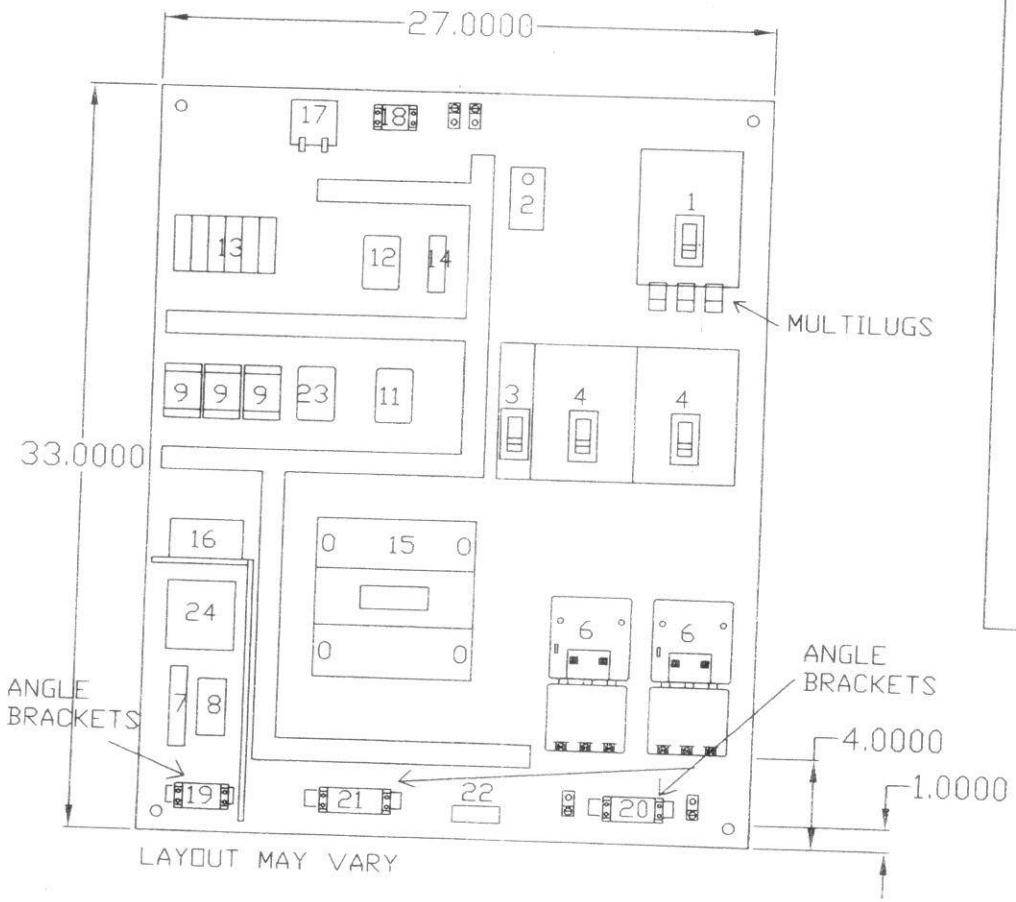
D.J.L.
67642BB



1 - MCB MAIN CIRCUIT BREAKER
2 - SA1 SURGE ARRESTOR 120V
3 - CCB CONTROL CIRCUIT BREAKER
4 - MB1&2 MOTOR BREAKER
5 -
6 - MS1&2 MOTOR STARTER
7 - ISB INTRINSCIALLY SAFE BARRIER
8 - SA2 SURGE ARRESTOR 4-20MA
9 - R1-3 CONTROL RELAY
10 -
11 - PS POWER SUPPLY
12 - PM PHASE MONITOR
13 - PM FUSE BLOCK
14 - TH THERMOSTAT
15 - CPT CONTROL POWER TRANSFORMER
16 - TRANSDUCER BREATHER
17 - FL FLASHER
18 - TSA TERMINAL STRIP A
19 - TSB TERMINAL STRIP B
20 - TSC TERMINAL STRIP C
21 - TSD TERMINAL STRIP D
22 - HT HEATER STRIP
23 - ALT ALTERNATOR
24 - LPA LOOP POWERED ALARM

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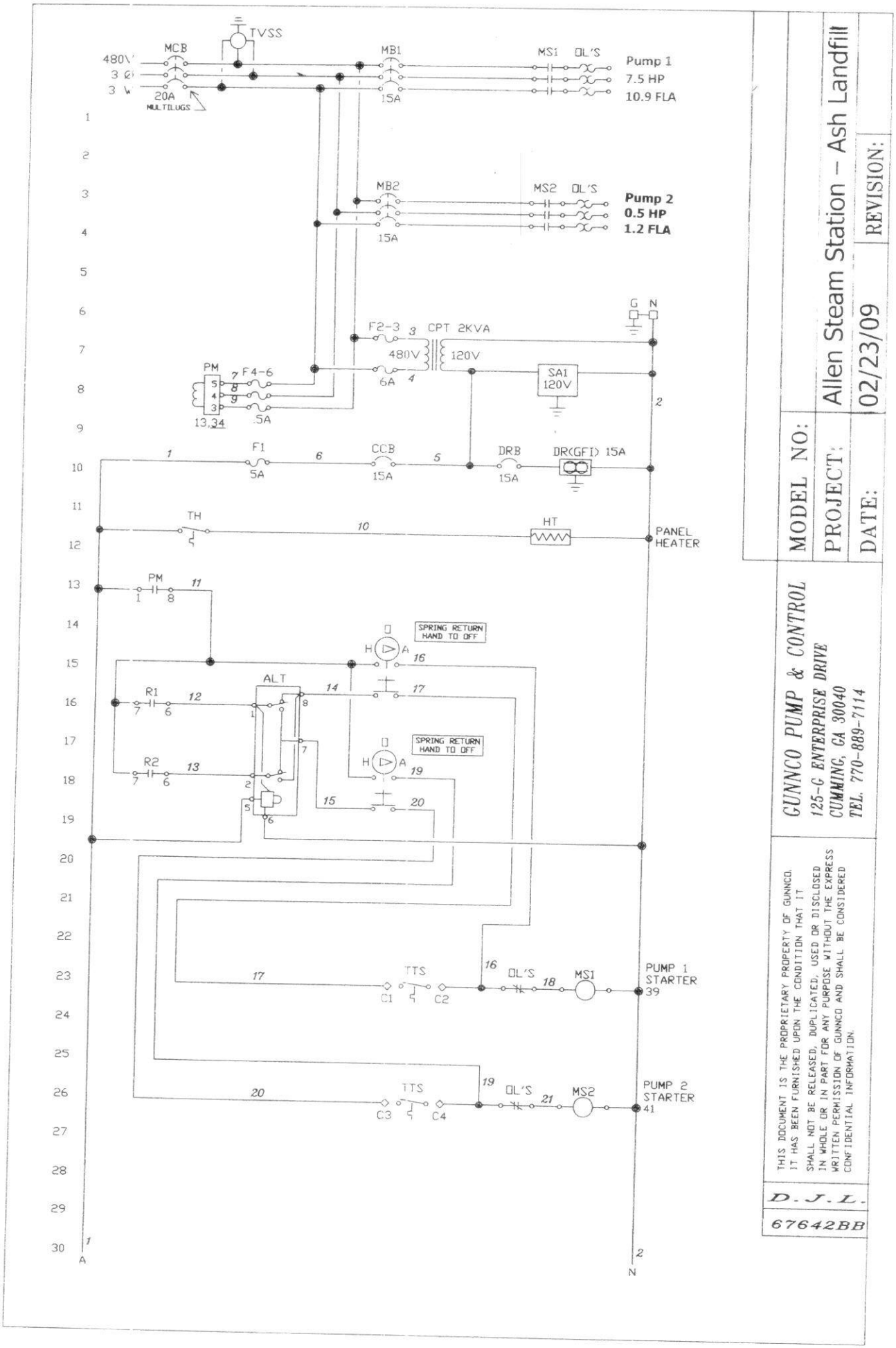
TVSS
MCB
480V
3 Ø
3 W
20A
MULTILUGS
MB1
15A
MS1
OL'S
Pump 1
7.5 HP
10.9 FLA
MB2
15A
MS2
OL'S
Pump 2
0.5 HP
1.2 FLA
G N
F2-3
CPT 2KVA
480V
120V
6A
SA1
120V
PM
F4-6
.5A
F1
5A
CCB
15A
DRB
15A
DR(GFI) 15A
TH
HT
PANEL HEATER
PM
SPRING RETURN HAND TO OFF
ALT
R1
R2
SPRING RETURN HAND TO OFF
TTS
C1
C2
OL'S
MS1
PUMP 1 STARTER
39
TTS
C3
C4
OL'S
MS2
PUMP 2 STARTER
41
A
N
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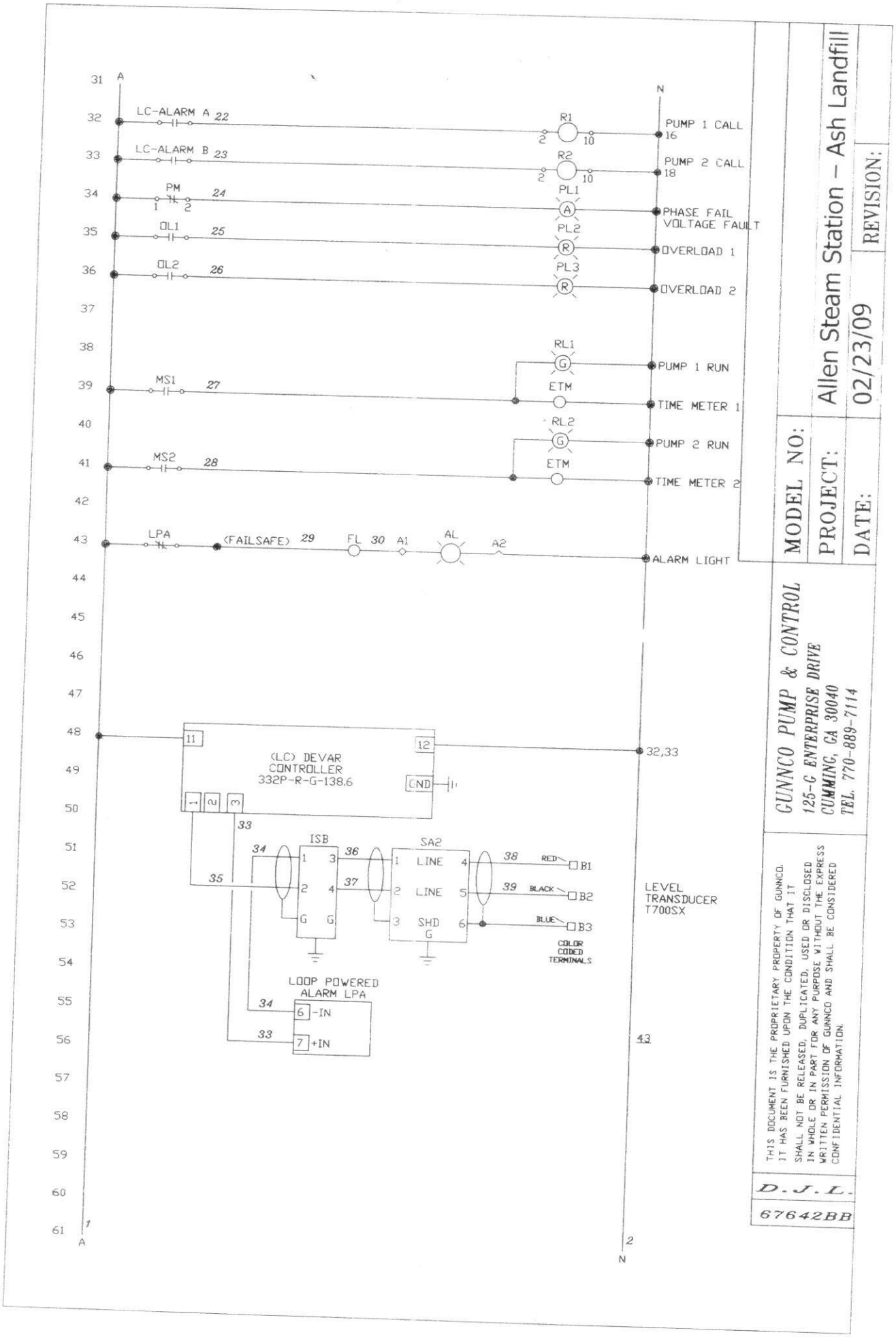
LC-ALARM A 22
LC-ALARM B 23
PM 24
OL1 25
OL2 26
MS1 27
MS2 28
LPA
(FAILSAFE) 29
FL 30
AL
R1
R2
PL1
PL2
PL3
RL1
RL2
ETM
PUMP 1 CALL 16
PUMP 2 CALL 18
PHASE FAIL VOLTAGE FAULT
OVERLOAD 1
OVERLOAD 2
PUMP 1 RUN
TIME METER 1
PUMP 2 RUN
TIME METER 2
ALARM LIGHT
(LC) DEVAR CONTROLLER 332P-R-G-138.6
GND
32,33
ISB
SA2
LINE
SHD
RED
BLACK
BLUE
B1
B2
B3
COLOR CODED TERMINALS
LEVEL TRANSDUCER T700SX
LOOP POWERED ALARM LPA
-IN
+IN
43
MODEL NO:
PROJECT:
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Allen Steam Station – Ash Landfill
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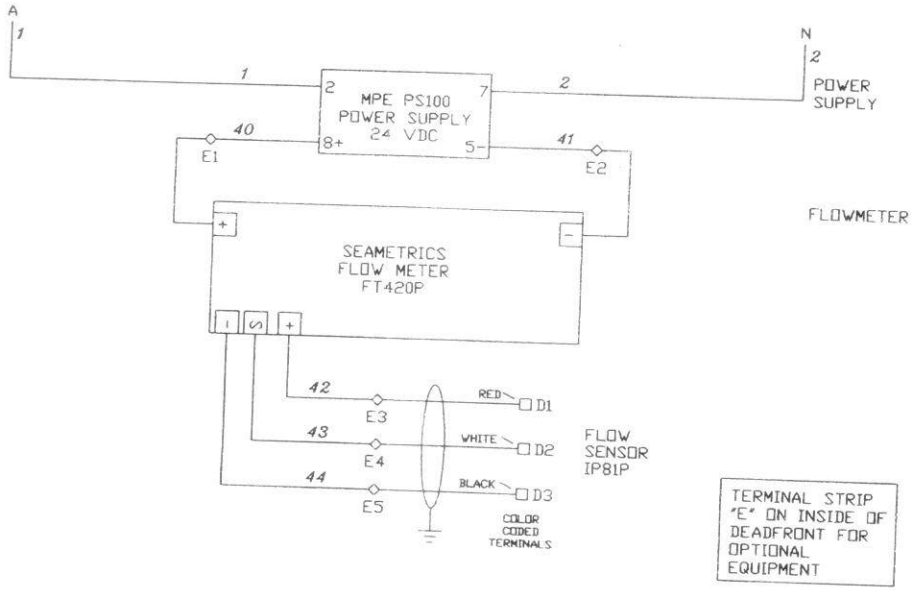
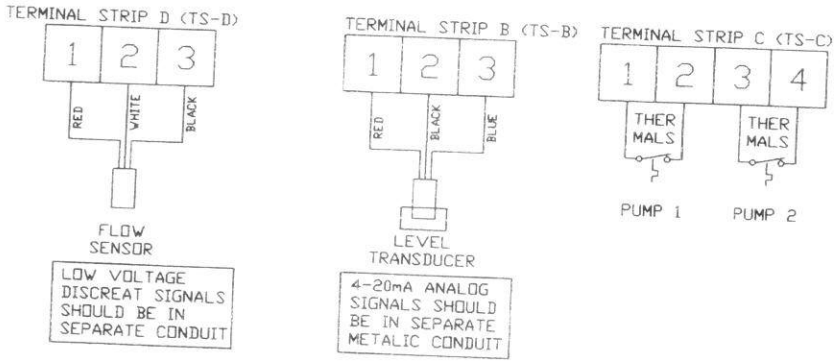


LAST WIRE #44



Allen Steam Station – Ash Landfill

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*Sideslope*r™ PUMPING SYSTEM CONTROL
OPERATION-SIMPLEX "GC" Series" 101 Panel

The controller should provide automatic operation. Under normal conditions the pump should operate with the H-O-A switches in the A or automatic position.

EXTERIOR MOUNTED COMPONENTS:

Top Alarm Light-(optional) Indicates HIGH liquid level condition. See individual indicators for cause.

Duplex Receptacle-(optional) Provides up to 5 amp 120v electrical service.

INTERIOR DOOR MOUNTED OPERATOR CONTROLS:

Main Breaker Disconnect Handle-The main turns power off to the controller. This switch must be turned to the OFF position to open the interior door.

H-O-A Switch – The H-O-A switch should remain in the "A" setting for automatic operation. The "H" setting or hand is for testing only.

Indicating Controller-This device displays the level in the sump in inches and provides the pump ON/OFF and high-level ON/OFF operation. Check current setting or re-adjust set points as follows:

1) PUMP OFF-Turn center knob of the left to A-Reset. The current PUMP OFF set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.
2) PUMP ON- Turn center knob of the left to A-Set. The current PUMP ON set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed. PLEASE NOTE: The pump will not start in the "A" position unless the level has surpassed the ON setting.
3) HIGH ALARM OFF-Turn center knob of the right to B-Reset. The current HIGH LEVEL OFF set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.
4) HIGH ALARM ON-Turn center knob of the right to B-Set. The current HIGH LEVEL ON set point will be displayed. To re-adjust use a small screw driver and turn the associated screw or "pot" until the desired set point is displayed.

LED is provided to indicate that the A or B relays are ON when lit. The level display will also flash during a high level condition. Pump ON and OFF settings should be sufficient difference to prevent pump rapid cycle-pump should not restart for 10 minutes or more (typically hours) after pump shuts off.

Flow Meter (OPTION)-The digital flow meter provides rate of flow (GPM-gallons per minute) on the upper/larger digits, and total accumulated flow (gallons) on the lower digits. Total may accumulate to 99999999 if the decimal point is eliminated. The right side arrow button resets the total to "0" when pressed. See flow meter instructions.

RUN Light-indicates pump is called to operate.

PHASE or VOLTAGE FAULT/FAIL Light-Indicates a phase loss, improper voltage, reversed phase (three phase only), blown sensor fuses damaged, or damaged voltage or phase sensor. Sensor is adjustable and should be set to actual operating voltage at the time of start-up.

OVERLOAD Light-Indicates a motor starter overload has occurred.

HIGH LEVEL Light (OPTION) Indicates a high level condition exists. Under this condition the level indicating display will flash.

TANK FULL Light (OPTION) –Indicates that the pump will not operate in the "A" mode because the panel is receiving a signal via a pair of wires that the remote storage tank or sump is full. Under this condition the pump will operate in the "H" mode.

OVERLOAD Reset Button-Reset the motor starter overload.

ETM-elapsed run time meters indicate hours of pump operation (to 1/10th). Under normal conditions hours of operation should be similar for each pump. This information can be recorded to determine estimated flows for the system.

Breakers-The motor, control, (and optional receptacle) breakers are accessible from the interior door. A tripped breaker typically indicates a short circuit. Please note that there are also fuses in the interior for the transformer or control power or optional receptacle. See additional information in interior components section.

INTERIOR COMPONENTS: Should be serviced with power off or by a qualified service personnel. NOTE: Power will be present in the incoming wiring to the main disconnect.
----------ELECTRICAL HAZARD EXISTS!----------

Motor Breaker-Three pole circuit breaker-typically located on upper far right is provided for the short circuit protection and allow service of the system. If a breaker trips check for a short circuit and reset. If the breaker trips again there may be an electrical problem which should be checked by a qualified electrician. Motor breaker switches off primary voltage to the motor starter contactors and pump.

Control Breaker-Single pole control circuit breaker-Typically located left position of the motor breaker is provided for the short circuit protection and allow service of the system. If a breaker trips check for a short circuit and reset. If the breaker trips again there may be an electrical problem which should be checked by a qualified electrician. There is also a fuse between the breaker and the control circuit. at the transformer which Control breaker switches off 120v control power to operator control components.

Receptacle Breaker (OPTION) -Single pole circuit breaker-Typically located far left position of the motor breaker is provided for the short circuit protection and protection of the system. There is also a fuse between the breaker and the receptacle which typically may blow due to overloaded circuit (limit usage to 5 amp service).

Transformer and Fuses (if applicable) – The transformer provides low 120 volt power for the control operations. There are three fuses mounted on top of the transformers, The upper two are the incoming power (230/460 volt) and the lower fuse is the control circuit power (120 volt). When replacing fuses use the identical type and rating as originally provided.

Relays ("ICE CUBE" relays)-These are plug in style relays which work between the level controller/H-O-A switch and the motor starter coil (and where applicable the high level lights) which minimizes the wear of the level controller contacts. Coil voltage is 120v.

Motor Starter/Overload relay -Contains overload protection and magnetic coil to energizes to allow power to the pump. Red bar resets overloads. Coil voltage is 120v.

Voltage/Phase Monitor- Plug in style device monitor incoming power and detects and protects motor from high or low voltage, loss of phase, or reversed phase (on three phase models). A led light indicates proper operation and adjustable knob allows for setting the unit to the normal operating voltage range. If the range exceeds approximately 10% of the set point the pump will be prevented from operating (motor starter coil will not pull in) until the problem is corrected. If the LED will not come on with adjustment check voltage and the associated fuses. High voltage surges may damage monitor. GunnCo normally stocks replacement units. At start-up the operating voltage should be set. Voltage must be within the range of the monitor. On three phase systems, if the unit will not energize at start-up after adjustment of range setting, the phases may need to be reversed at the monitor-to accomplish switch any two legs.

ISB-Intrinsically Safe Barrier-This devices provides a safety for the level control voltage and must be used to ensure safe operation where the sensor is in a hazardous location. The barrier contain two replaceable fuses.

24VDC Power Supply (OPTION)-Supplies power to the voltage meter. Plugs into socket.

Lock Out Relay (OPTION) –Provides sensing of a closed contact (float switch or relay) up to 5000' away through a pair of wires and provides panel pump lock out circuit function. Plugs into socket.

Motor Saver (OPTION)-Monitors motor load and provides protection for pump dry run, "dead head", and a variety of voltage and phase protection when the panel is in the "A" mode. A fault CODE is provided after a fault event is detected. May be programmed for specific protection category and ranges including short cycle (delay start), phase unbalance, high/low voltage, delay period before restart, and number of restarts after a fault. Typically programmed to provide backup overload and voltage protection. See instructions for programming and fault codes.

Heater & Thermostat-An enclosure heater is provided to minimize the formation of condensate within the enclosure to help ensure electrical components maintain minimum operating temperatures. The thermostat is adjustable but should typically be set around 90 for effective operation. If condensate continues to exist increase thermostat setting to 100 and/or check for sources of liquid into the enclosure.

Bellows-The panel is equipped with a bellow breather device which connects to the transducer breather to provide a closed venting loop to allow the transducer diaphragm to adjust.

Surge Suppressor (110 Volt control circuit)-provides protection to the control circuit if a surge condition occurs. An indicating light is on when operating properly.

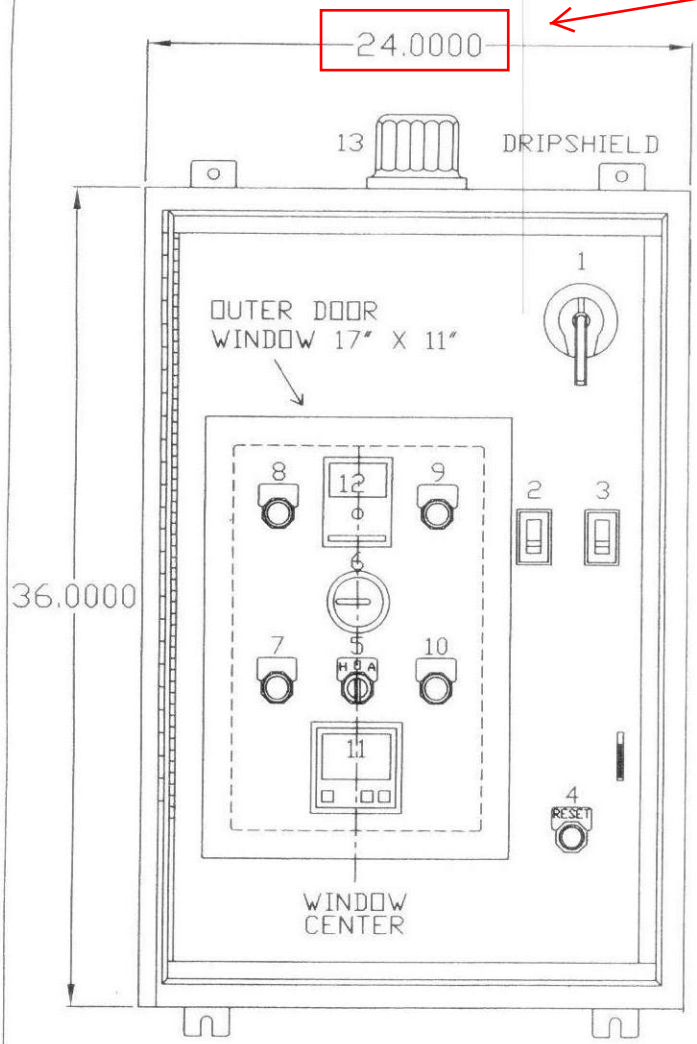
Surge Suppressor (24V/4-20Ma)-provide protection from surges entering panel from level sensor-Note that level sensor is also surge protected with an integral surge suppressor which is contained within the level sensor. If device damaged the signal between the sensor and the level indicating controller may will be lost and result in a negative level display of approximately –34.6. Also see ISB below.

TVSS Transient Voltage Surge Suppressor Lightning Arrestor-Square or rectangular device absorbs power line surges to protect the system. If the green LED light does not energize with power to the panel the unit may be no longer functional and replacement is required.

Lightning Capacitor-Cylinder Device mounted on the right of the enclosure. This device worked in conjunction to the Lightning Arrestor and is a "one shot" device, which absorbs high amperage line surges to protect the system. If a severe event occurs damage may be visual. If damaged the device should be immediate replaced. If damaged do not touch any exposed parts or wires.

Call GunnCo for assistance in operating and trouble shooting problems and for replacement parts or sources.
Our phone number is 770-889-7114.

Discrepancy #4



3PT LATCH ON
OUTER DOOR

TERMINAL STRIP E
ON BACK OF DF FOR
OPTIONAL EQUIPMENT

OUTER DOOR HAS BEEN REMOVED FOR CLARITY

1 - MAIN BREAKER
2 - CONTROL BREAKER
3 - MOTOR BREAKER
4 - OVERLOAD RESET
5 - PUMP HAND-OFF-AUTO
6 - ELAPSE TIME METER
7 - RL1 PUMP RUN
8 - PL1 PHASE FAIL
9 - PL2 OVERLOAD
10 - PL3 PUMP LOCKOUT
11 - FLOWMETER
12 - PUMP CONTROLLER
13 - AL ALARM LIGHT

SIDESLOPER PUMPING SYSTEMS	
MODEL NO:	GCC-0.5-1.5-BACAABB
PROJECT:	Allen Steam Station – Ash Landfill
DATE:	02/23/09
REVISION:	

GUNNCO PUMP & CONTROL
125-G ENTERPRISE DRIVE
CUMMING, GA 30040
TEL. 770-889-7114

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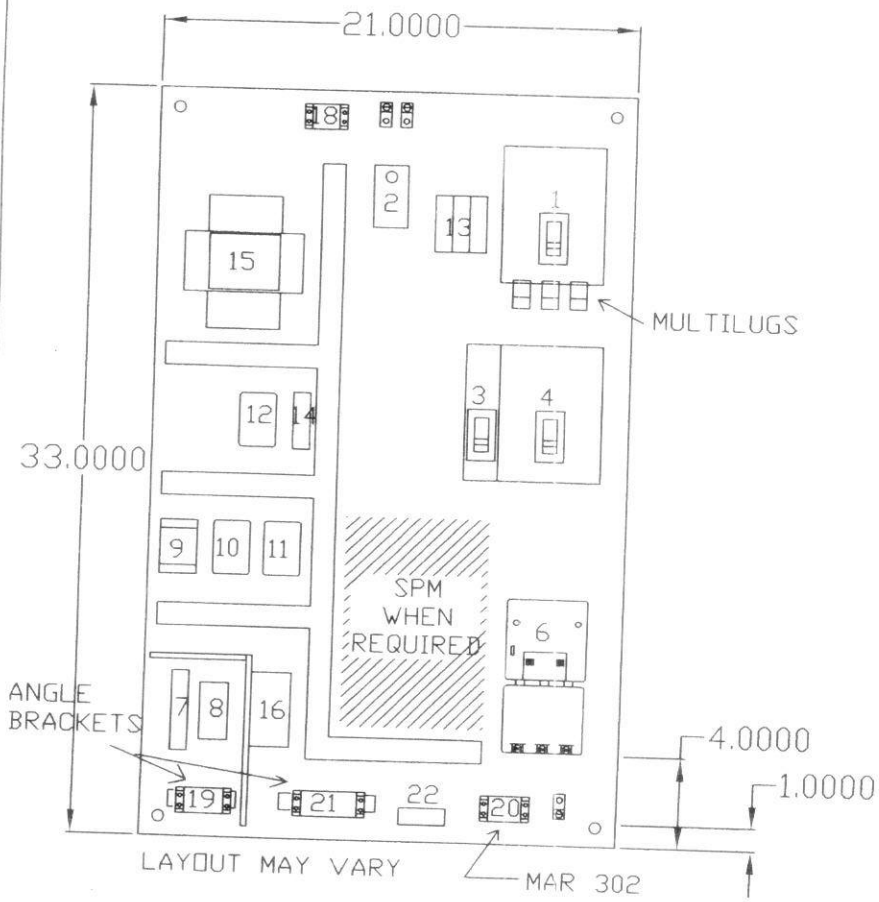
TNT

66538BA



1 - MCB MAIN CIRCUIT BREAKER
2 - SA1 SURGE ARRESTOR 120V
3 - CCB CONTROL CIRCUIT BREAKER
4 - MB1 MOTOR BREAKER 1
5 -
6 - MS1 MOTOR STARTER 1
7 - ISB INTRINSCIALLY SAFE BARRIER
8 - SA2 SURGE ARRESTOR 4-20MA
9 - R1 CONTROL RELAY
10 - WAR LEVEL RELAY
11 - PS POWER SUPPLY
12 - PM PHASE MONITOR
13 - FUSE BLOCK
14 - TH THERMOSTAT
15 - CPT CONTROL POWER TRANSFORMER
16 - TRANSDUCER BREATHER
17 -
18 - TSA TERMINAL STRIP A
19 - TSB TERMINAL STRIP B
20 - TSC TERMINAL STRIP C
21 - TSD TERMINAL STRIP D
22 - HT HEATER STRIP

SIDESLOPER PUMPING SYSTEMS

MODEL NO:	GCC-0.5-1.5-BACAABB
PROJECT:	Allen Steam Station - Ash Landfill
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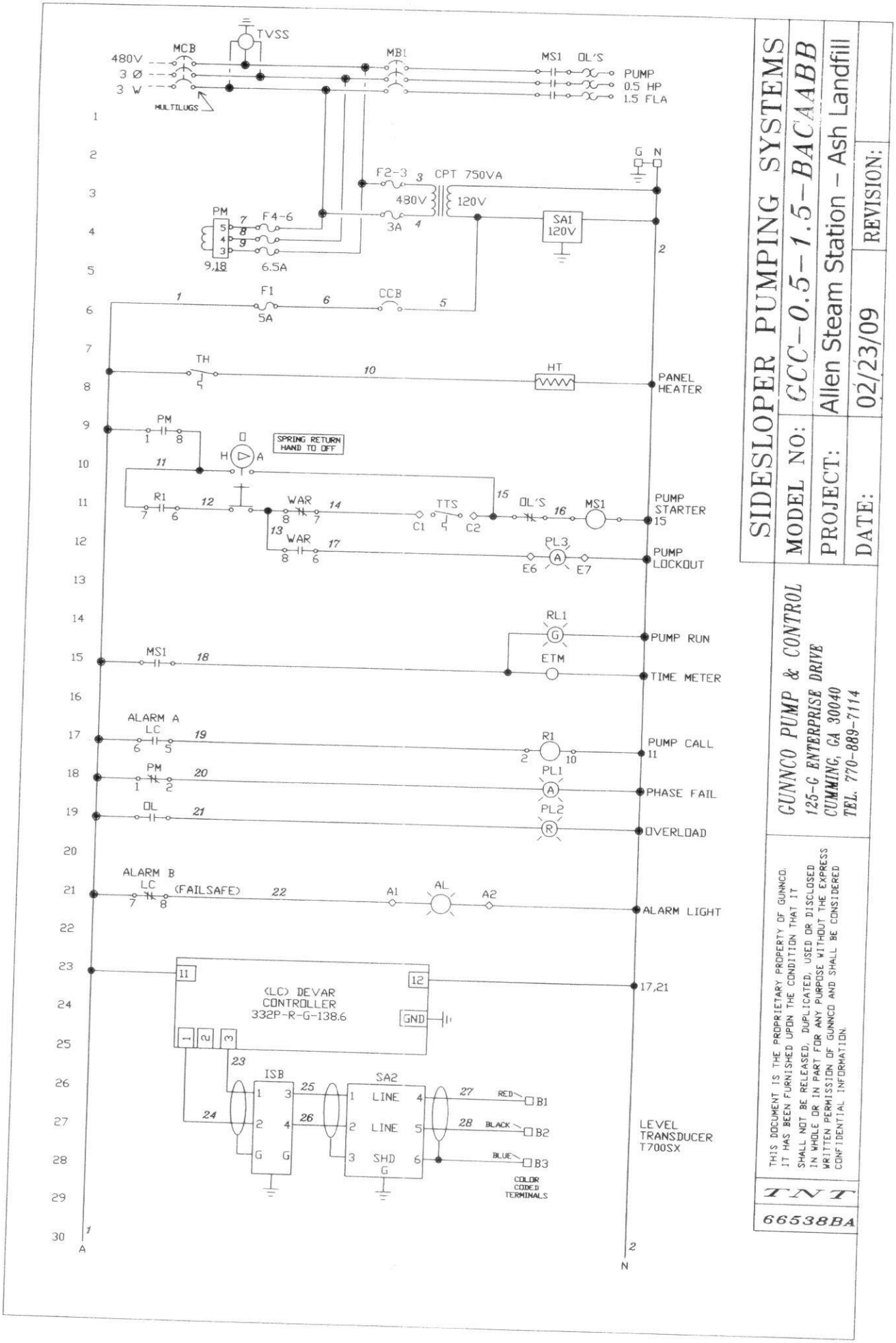

SIDESLOPER PUMPING SYSTEMS

MODEL NO: GCC-0.5-1.5-BACAABB

PROJECT: Allen Steam Station – Ash Landfill

DATE: 02/23/09

REVISION:

GUNNCO PUMP & CONTROL
125-C ENTERPRISE DRIVE
CUMMING, GA 30040
TEL. 770-889-7114

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TNT

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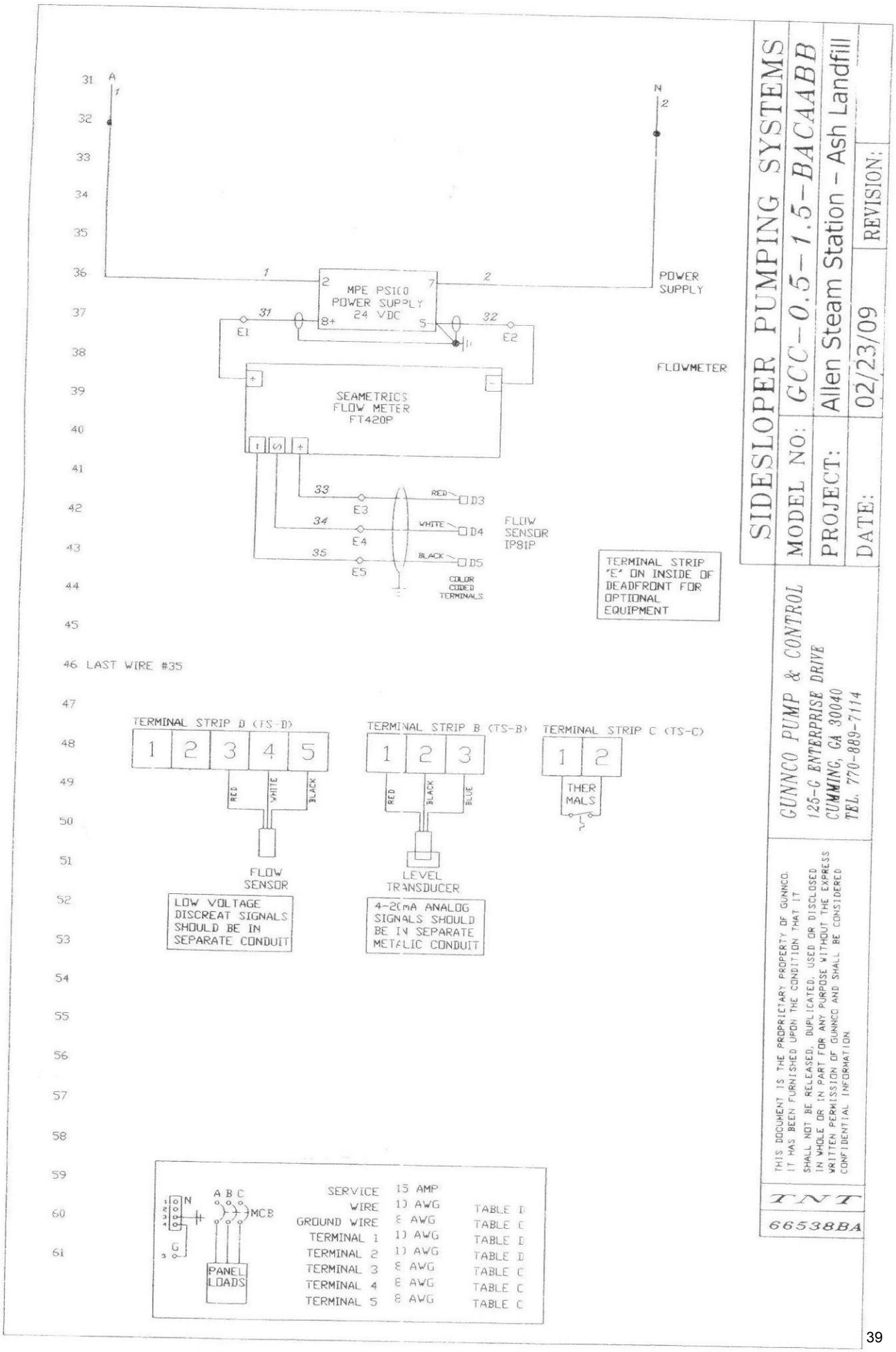
A
1
N
2
POWER SUPPLY
MPE PS100
POWER SUPPLY
24 VDC
1
2
7
2
31
8+
5-
32
E1
E2
FLOWMETER
SEAMETRICS
FLOW METER
FT420P
33
E3
RED
D3
34
E4
WHITE
D4
35
E5
BLACK
D5
FLOW SENSOR IP81P
COLOR CODED TERMINALS
TERMINAL STRIP "E" ON INSIDE OF DEADFRONT FOR OPTIONAL EQUIPMENT
LAST WIRE #35
TERMINAL STRIP D (TS-D)
1 2 3 4 5
RED
WHITE
BLACK
FLOW SENSOR
LOW VOLTAGE DISCREAT SIGNALS SHOULD BE IN SEPARATE CONDUIT
TERMINAL STRIP B (TS-B)
1 2 3
RED
BLACK
BLUE
LEVEL TRANSDUCER
4-20mA ANALOG SIGNALS SHOULD BE IN SEPARATE METALIC CONDUIT
TERMINAL STRIP C (TS-C)
1 2
THER MALS
N
G
A B C
MCB
PANEL LOADS
SERVICE 15 AMP
WIRE 10 AWG TABLE D
GROUND WIRE 8 AWG TABLE C
TERMINAL 1 10 AWG TABLE D
TERMINAL 2 10 AWG TABLE D
TERMINAL 3 8 AWG TABLE C
TERMINAL 4 8 AWG TABLE C
TERMINAL 5 8 AWG TABLE C
SIDESLOPER PUMPING SYSTEMS
MODEL NO: GCC-0.5-1.5-BACAABB
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66538BA

FT400-SERIES
Rate/Total Indicator

ISO 9001:2000 CERTIFIED

FEATURES

- Simple Setup
- Battery (FT415) or Loop Powered (FT420)
- Remote or Flow Sensor Mounted Indicator
- Rugged Metallic Housing
- Non-volatile Memory

APPLICATIONS

- Water Treatment
- Water Utility
- Industrial Chemical Handling

GENERAL INFORMATION

The FT400-Series are microcontroller-based indicator/transmitters that display flow rate and total and provide output signals. The FT415 is battery-powered and provides a scalable pulse output. The FT420 is powered by external DC voltage, and has both pulse and 4-20 mA analog outputs.

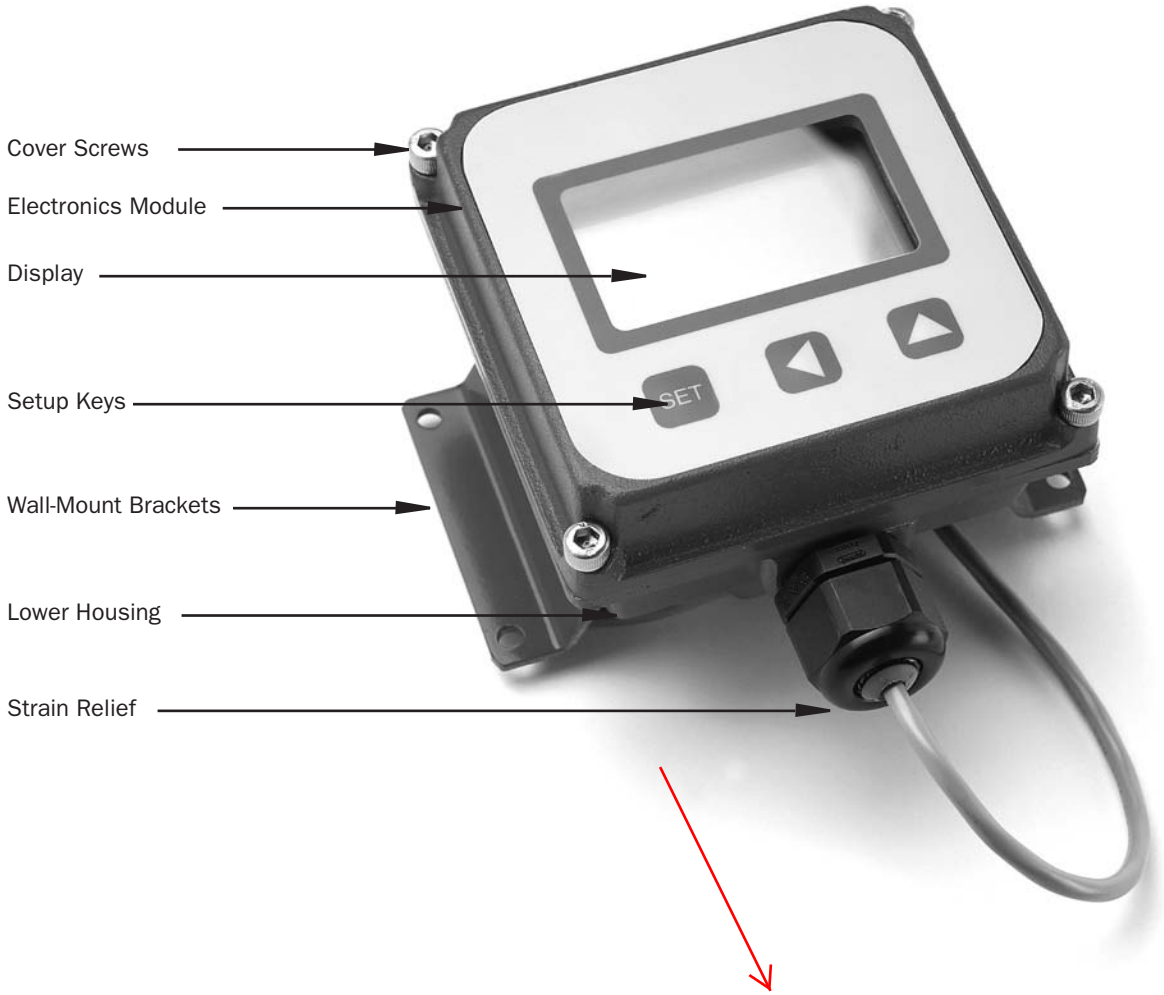
Both models can be factory-mounted on the meter (-M) or remotely wall-mounted with the brackets provided (-W). The FT420 is also available as a panel mount (-P) with an open back for easy installation in the user's own electrical enclosure. Most FT400's can be converted from wall-to-meter or meter-to-wall mount configurations after installation if needed.

Housings for the -W and -M models are rugged cast aluminum, gasketed for maximum environmental protection. A membrane keypad allows settings to be changed without removing the cover. (Password protection, a standard feature, can be used to prevent settings from being changed.)

The addition of a dual-relay output board allows for certain applications requiring dry contact output. Examples include certain metering pumps and water treatment controls. Dual relays provide exactly the same pulse output as the standard unit, and each can signal one external device. A non-resettable total is also available. The FT420 can be ordered in a plastic enclosure with a 115 Vac power supply for use with mechanical meters, or with a built-in 115 Vac/12-24 Vdc dual power supply for magmeters.

FT400-SERIES
Rate/Total Indicator

FEATURES



SPECIFICATIONS			FT415	FT420
Power			Lithium "C", 3.6 Vdc, replaceable, 3-5 year life	4 mA DC (4-20 mA loop), 12-32 Vdc
Display		**Rate**	6-digit autorange, 1/2" character height	6-digit autorange, 1/2" character height
		Total	8-digit, 5/16" character height	8-digit, 5/16" character height
Output	**Pulse**		0.1 second open collector pulse (scaled) Sensor pulse (unscaled) High alarm or low alarm	0.1 second open collector pulse (scaled) Sensor pulse (unscaled) High alarm or low alarm
	Analog		None	4-20 mA loop; 24-32 Vdc
Pulse Output Range			0.1 - 9999999.9 units/pulse	0.1 - 9999999.9 units/pulse
Input			Micropower GMR Sensor (square wave)	Open collector/switch @ 5 Vdc
Input Range			1.0 - 2,500 pulses/second	1.0 - 10,000 pulses/second
K-Factor Range			.001 - 99999.999	.001 - 99999.999
Flow Alarm Output Range			.01 - 999999.99	.01 - 999999.99
Temperature			0˚ C - 70˚ C (32˚ - 158˚ F)	0˚ C - 70˚ C (32˚ - 158˚ F)
Environmental			NEMA 4X	NEMA 4X

IP80-SERIES
Insertion Paddlewheel Flow Sensor

ISO 9001:2000 CERTIFIED

FEATURES

- Low-friction, long-life jewel bearings
- One moving part
- Fully field-repairable
- Choice of materials for compatibility with variety of chemicals
- Fits 1/2” to 8” pipe
- Fixed depth in fitting ensures proper placement in pipe

APPLICATIONS

- Industrial water/wastewater treatment
- Cooling water monitoring
- Industrial fluid control
- Chemical proportioning

GENERAL INFORMATION

The **IP80-Series** are impeller (or “paddlewheel”) insertion meters designed for use with a wide variety of liquids in pipe sizes 1/2" to 8". Sensors are available in brass, 316 stainless steel, PVC, and polypropylene. Bodies are machined from a solid rod for maximum precision. High-quality jewel bearings and nickel-bound tungsten carbide shafts are used for extreme low friction and long life. Low-flow performance is good, although other SeaMetrics flow meters are recommended where extremely low flows are being measured.

The rotation of the rotor is detected by a non-drag Hall-effect sensor. Output is a current-sinking pulse (square wave), which can be sent long distances (up to 2,000 feet) without a transmitter. This signal can be connected directly to PLC's, counters, and computer cards, as well as a variety of SeaMetrics controls and displays.

SeaMetrics IP meters are ideal for chemical proportioning applications. If no display is required, a simple divider such as the PD10 provides adjustable pump pacing. For rate and total display, the FT415 (battery powered) or FT420 (loop powered) flow indicator can be mounted directly on the IP80-Series meter, or remotely on a wall or panel. The AO55 blind analog transmitter can be used to convert to a 4-20 mA output. IP meters are also compatible with the DL75 data logger and FT520 batch processor.

The IP80-Series require special fittings that ensure correct depth placement in the pipe. Fittings come in a variety of materials for compatibility with specific applications. Tee fittings are individually wet-calibrated at the factory and marked with the K-factor (pulses per gallon). Saddle fittings must be field-installed on the pipe and do not come wet-calibrated. K-factors for saddles are based on factory-testing.

IP80-SERIES
Insertion Paddlewheel Flow Sensor

FEATURES

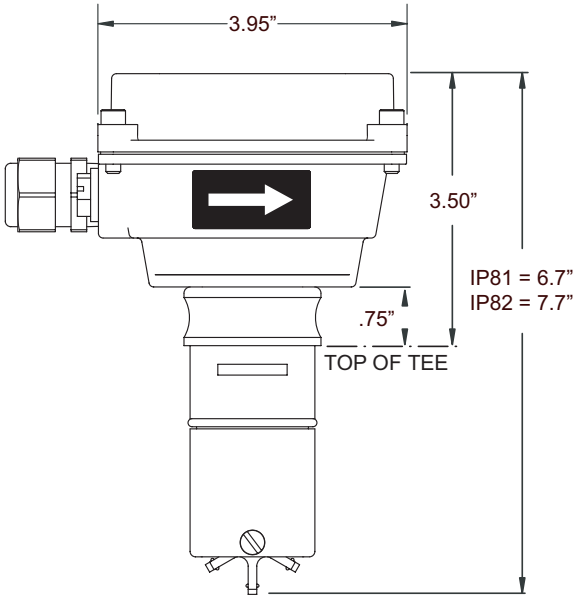
SPECIFICATIONS*

Materials	**Sensor Body**	Brass, 316 Stainless Steel, PVC, or Polypro		
	Rotor	PVDF		
	Shaft	Nickel-bonded tungsten carbide (Ceramic optional)		
	Bearings	Ruby jewel		
	O-Ring	EPDM (Viton optional)		
Rotor Pickup		GMR (Giant Magnetoresistive) Sensor		
		Brass	**316 SS**	**PVC or Polypro** (See Pressure vs. Temp. Chart)
Maximum Pressure		200 PSI (14 bar)	250 PSI (17 bar)	175 PSI (12 bar) @ 75˚ F
Maximum Temperature		200˚ F (93˚ C)	200˚ F (93˚ C)	130˚ F (55˚ C)
Flow Range		0.3 - 30 ft./sec.		
Accuracy		+/- 1.5% of full scale		
Signal		Hall effect current sinking pulse		
Power		6-24 Vdc, 2 mA		
Maximum Current		20 mA		
Cable		#22 AWG, 3 Cond, 18 foot (maximum 2000' run)		

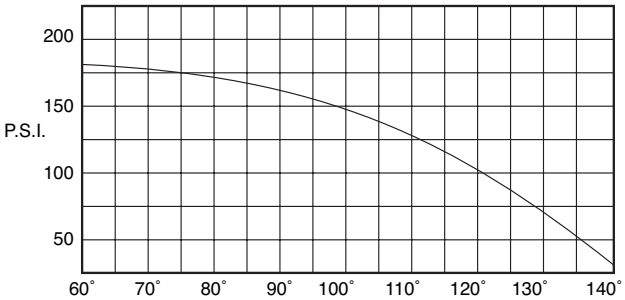
**Specifications subject to change • Please consult our website for current data (www.seametrics.com).*

DIMENSIONS

NOTE: Housing Optional



PRESSURE VS. TEMPERATURE (PVC/Polypro)



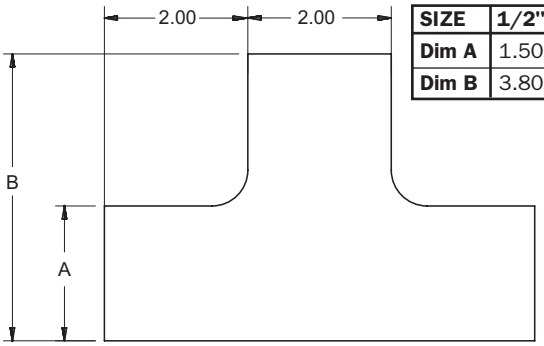
FLOW RANGE (In Gallons Per Minute)

	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"
Min	0.28	0.5	0.8	1.9	3.1	6.9	12	27	47
Max	28	50	80	190	314	691	1200	2700	4700

AVAILABLE FITTINGS

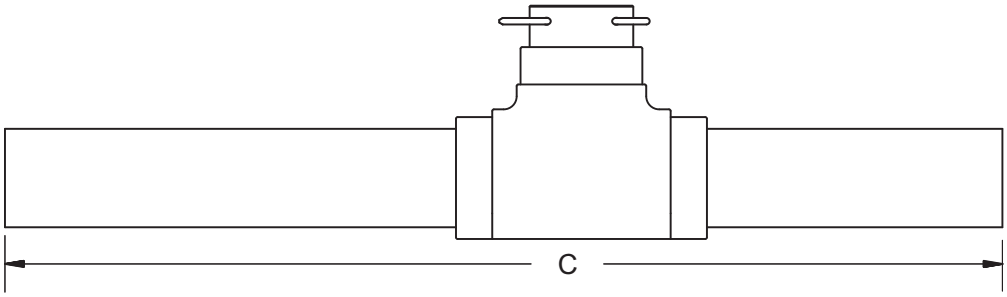
	Tee	Saddle	Weld	Braze	Sweat Tee
Bronze	1/2-4"	3-4"	x	3-8"	1/2-4"
PVC	1/2-2"	3-8"	x	x	x
Stainless Steel	1/2-2" 304SS	x	3-8" 316SS	x	x
Carbon Steel	1/2-2"	x	3-8"	x	x
Ductile Iron	x	3-8"	x	x	x

PVC BLOCK TEE FITTING



SIZE	1/2"	3/4"	1"
Dim A	1.50	1.90	1.88
Dim B	3.80	4.00	4.00

PVC TEE FITTINGS



SIZE	1-1/2"	2"
Dim C	19.2	19.9

The differential between PUMP ON and PUMP OFF must allow at **least 10 minutes** between starts to prevent early (and non-warranty) motor failure. In some installation the pump may produce greater flow than the perforations of the riser pipe allow the pipe sump area to recharge. Under these conditions it is available to maximize the ON-OFF settings-Typically we suggest setting PUMP OFF to 6” and PUMP ON to 24” or above. Call GunnCo for details.

Typically:

PUMP OFF (A-RESET) is set to 6” to 12”.

PUMP ON (A-SET) is set to 12” to 24”.

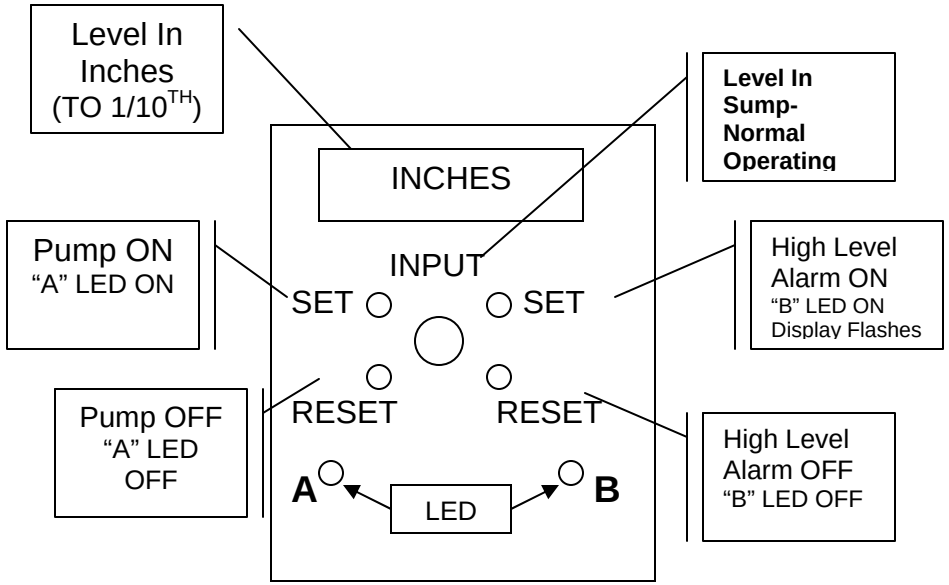
HIGH LEVEL ALARM ON (B-SET) is set to 30” or greater

HIGH LEVEL ALARM OFF (B-RESET)(is set 2” below the B-SET point.

(For deep sumps add 6” or more to each setting)

To check setting-Turn Knob to point and current setting will be displayed.

To change setting-Turn Knob to point and adjust screw until the desired new setting is displayed..



For programming and operating assistance PLEASE give us a call @ 770-889-7114.

GunnCo Devar 332 Indicating Controller

Series 700 Submersible Pressure Transducer

The Series 700 pressure transducer uses piezoresistive pressure cell sensing technology with a 316 stainless steel diaphragm. The housing is 316 stainless steel with Teflon wetted materials. Cable is a heavy duty polyurethane jacketed and shielded with polyethylene breather tube. Conductors are 22 AWG.

Signal is 4-20mA provided by a 24 volt powered control loop.

Standard pressure range for leachate cell pump applications is 0-5 psi with 0-10 psi available. Higher ranges are available for storage tank applications.

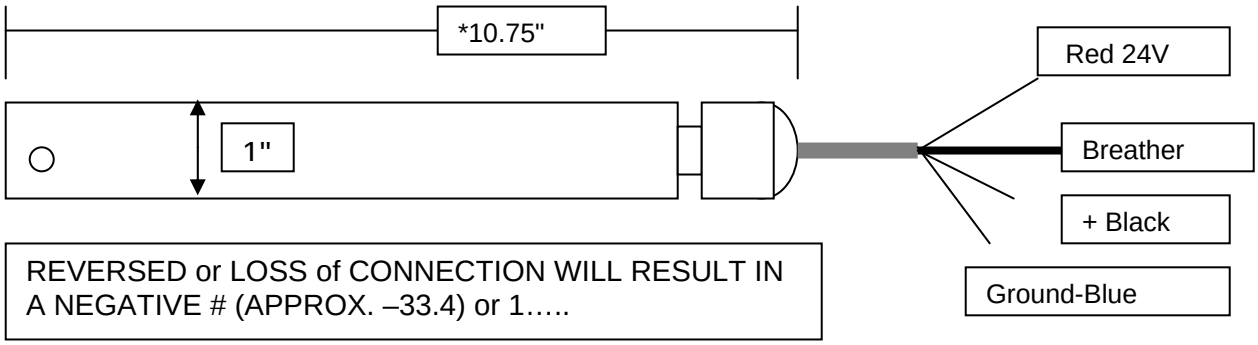
Accuracy is +/- 1.00 % of full range (for 0-5 psi accuracy is +/-1.4" minimum).

Rated burst pressure is 2X pressure range (10 psi minimum).

The standard Sidesloper unit is provided with an internal surge suppressor with more than 10,000 amperes peak surge. Protectors are multi-stage design, with a solid state section that intercepts the leading edge of the surge in a nanosecond. The second stage of the design contains a gas discharge tube which crowbars up to 20,000 ampere currents to ground. The tube remains in the crowbar start until the surge has passed, then rests to normal operation automatically.

Approvals are available for FM, CSA, and UL for Class 1, Div 1, Groups A, B, & C, and Class II, Div 1, group E, F, & G, and Class III, Div 1 hazardous locations. Hazardous location approvals are accomplished using approved electrical barrier.

A permanent bellows breather device mounted in the control panel allows the device to "breath" and prevents moisture from entering and condensing in the vent tube of the cable. This device replaces desiccant tubes which require periodic replacement.



GunnCo *Sidesloper*™

Pumps and Systems Warranty Policy

1. All *Sidesloper*™ GunnCo packages sold as specified and complete systems (pump, panel, and level sensor) shall be covered by a 12-month warranty. The warranty period begins upon the date of shipment and covers all components against failure to function due to workmanship, component failure, or materials compatibility for the application as recommended and sold and paid for within quoted terms.
2. All *Sidesloper*™ pumps or components not sold as a complete system are subject to a warranty period of one year from shipment date or per the manufacturers standard warranty, whichever expires first.
3. Claims under the warranty can be made by obtaining a return authorization number from GunnCo during the warranty period and returning the defective component(s), freight pre-paid to GunnCo or the proper service location as directed by GunnCo. Details of the problem should be included with the returned item along with the return authorization number. The defective component must be returned within 30 days of the authorization date. The option to repair, replace, or adjust the problem component shall be that of GunnCo. Costs associated with troubleshooting, removal or replacement of components, rental equipment, rush premium charges, and freight is not included under warranty.
4. Warranty does not cover normal wear, damage due to accident or physical damage (during shipment, installation, storage), acts of nature (lightning) (blown fuses and voltage monitors), misuse, abuse, improper storage, improper/defective electrical service (low/high voltage/surges), improper installation, improper selection, or improper or unauthorized service or modifications.
5. Warranty applies only to system as operating under the conditions at time of installation (clean leachate). Build up of abrasives in sump riser such as sludge, sand, silt or scale in pump/motor/carrier/transducer will void warranty.
6. GunnCo accepts no responsibility for damage, loss, or expenses incurred through the sale or use of its equipment. Under no condition shall GunnCo be held liable for any special, incidental, or consequential damage.

Service Labor, Repairs and Components/Parts Warranty Policy

1) Service labor is warranted for quality of provided service. Repairs by GunnCo or GunnCo representative are warranted for 90 days from original installation/service dates. Failure due to work by others, modifications, non-approval for proper repairs, temporary repairs, materials by others, abuse, misuse, acts of nature, and non-recommended parts or components may not be covered by this warranty.
2) Parts and component are subject to original manufacturer's warranty periods and limits and may be subject to manufacturer's final inspection of a failed items.
3) GunnCo retains right to replace, repair, or refund labor and materials under the warranty where applicable.
4) Repair warranty for shop repairs is 90 days and does not include freight, removal, installation, non-GunnCo provided components or as noted for above service warranty.

****

Please contact us immediately should you suspect there may be a problem or if you have any questions concerning the operation or installation of a system or component. By contacting us immediately we can assist in determining the problem and provide the fastest possible response.

Sidesloper™ PUMPING SYSTEM

SAFETY

The pumping system is designed to allow for an operator to check the system with a minimum of electrical knowledge. However when working around the pump and controller the following minimum safety precautions should be applied.

- When doing any service work within the interior of the control panel the main breaker should in the off position.
- When visually inspecting interior control panel components do not touch any component unless power is switched off.
- Turn off power when replacing fuses.
- When working in the wet well or handling pump power should be off.
- A qualified electrician should install and connect the control panel.
- Control panel must be panel properly grounded with ground rod and conductor to back-plate.
- Pump ground wire should be connected to the ground lug provided.
- Do not work on control panel in wet conditions.
- All service work should be performed by qualified personnel.
- Any modifications to control panel should be approved by GunnCo prior to completion. Non-authorized modifications could void warranty and result in safety hazards.

SERVICE OR QUESTIONS

For authorized service of pump, controller, or components or returns and replacement of defective components call GunnCo @ 770-899-7114; Fax # 770-889-2754; e-mail gunnco@mindspring.com.

APPENDIX IV – PROJECT DOCUMENTATION

Construction Photographs
Field Reports
Notices of Change

Construction Photographs

S&ME
9751 Southern Pine Blvd.
Charlotte, NC 28273

Photograph 1

Date: 4-8-09

Photographer: Cedric Ruhl

Location / Orientation	Northeast corner of Cell 1 facing northeast
Remarks	Geosynthetics stockpile

Photograph 2

Date: 4-8-09

Photographer: Cedric Ruhl

Location / Orientation	Northeast corner of Cell 1 facing southwest
Remarks	Compacted soil liner subgrade preparation prior to geosynthetic clay liner (GCL) installation.

S&ME
9751 Southern Pine Blvd.
Charlotte, NC 28273

Photograph 3

Date: 4-8-09

Photographer: Cedric Ruhl

Location / Orientation	Northeast corner of Cell 1 facing north
Remarks	GCL deployment

Photograph 4

Date: 4-10-09

Photographer: Cedric Ruhl

Location / Orientation	Northern Cell 1 berm facing northeast
Remarks	Secondary geomembrane deployment over GCL

S&ME
9751 Southern Pine Blvd.
Charlotte, NC 28273

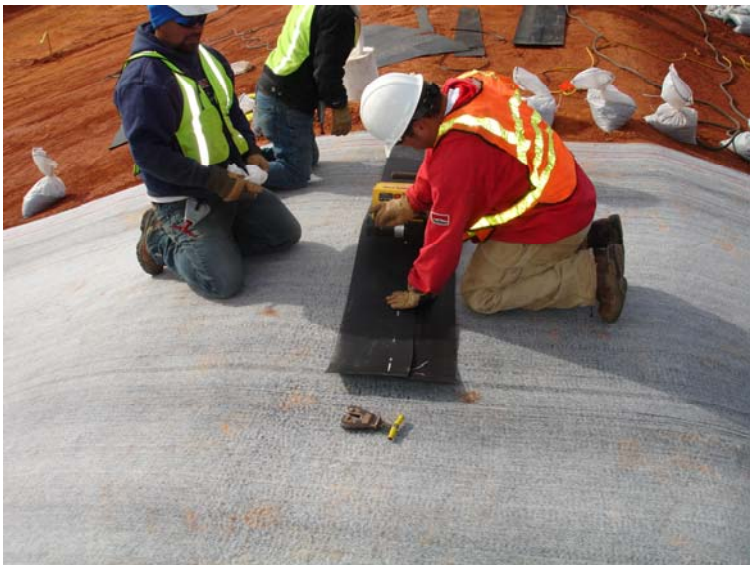
Photograph 5

Date: 4-8-09

Photographer: Cedric Ruhl

Location / Orientation	Northern most lateral on east side of Cell 1 facing north
Remarks	End of work day; GCL covered with geomembrane and sandbagged

Photograph 6



Date: 4-8-09

Photographer: Cedric Ruhl

Location / Orientation	Top of Cell 1 berm
Remarks	Fusion weld trial seam being performed on geomembrane prior to deployment

S&ME
9751 Southern Pine Blvd.
Charlotte, NC 28273

Photograph 7

Date: 4-23-09

Photographer: Cedric Ruhl

Location / Orientation	Western half of Cell 1 facing southeast
Remarks	Fusion weld seam being performed on deployed geomembrane panels

Photograph 8

Date: 4-11-09

Photographer: Cedric Ruhl

Location / Orientation	Northeast corner of Cell 1
Remarks	Extrusion weld being performed at tie-in of geomembrane panels

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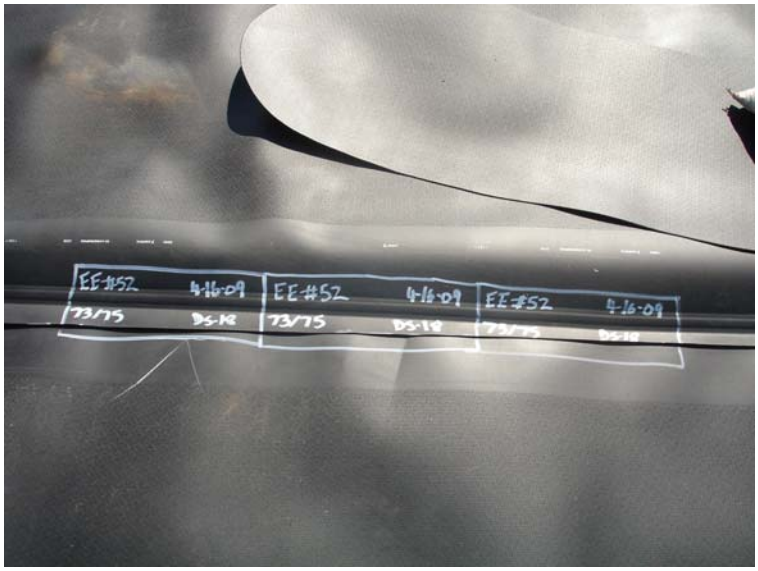
Photograph 9

Date: 4-15-09

Photographer: Cedric Ruhl

Location / Orientation	Unknown
Remarks	Vacuum box test being performed on extrusion weld

Photograph 10



Date: 4-17-09

Photographer: Cedric Ruhl

Location / Orientation	Eastern half of Cell 1
Remarks	Laboratory destructive sample to be cut along the length of the seam and later tested for peel strength and shear strength

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Photograph 11

Date: 4-23-09

Photographer: Cedric Ruhl

Location / Orientation	Unknown
Remarks	Grind method used to create a smooth surface for welding a tie-in seam perpendicular to the seam shown.

Photograph 12

Date: 4-11-09

Photographer: Cedric Ruhl

Location / Orientation	Unknown
Remarks	Typical repair patch sealed with extrusion weld

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Photograph 13

Date: 4-15-09

Photographer: Cedric Ruhl

Location / Orientation	Northern berm in Cell 1 facing northwest
Remarks	Geocomposite drainage layer deployment

Photograph 14

Date: 4-15-09

Photographer: Cedric Ruhl

Location / Orientation	Northern berm in Cell 1 facing north
Remarks	Geonet seams of geocomposite connected by plastic fasteners

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Photograph 15

Date: 5-25-09

Photographer: Jimmy Addis

Location / Orientation	Northern berm in Cell 1 facing north
Remarks	Geotextile seams of geocomposite connected by sewing method (primary geosynthetics system)

Photograph 16

Date: 4-18-09

Photographer: Cedric Ruhl

Location / Orientation	Unknown
Remarks	Butt fusion welding method of joining HDPE piping

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Photograph 17

Date: 4-21-09

Photographer: Cedric Ruhl

Location / Orientation	South end of Cell 1 facing north
Remarks	Aggregate backfill being placed around Cell 1B LDS pipe

Photograph 18

Date: 4-27-09

Photographer: Cedric Ruhl

Location / Orientation	South end of Cell 1 facing north
Remarks	Sump area with secondary HDPE geomembrane installed

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Photograph 19

Date: 5-18-09

Photographer: Ken Daly

Location / Orientation	Western berm of Cell 1 facing south
Remarks	Anchor trench

Photograph 20

Date: 6-4-09

Photographer: Kyle Baucom

Location / Orientation	Sump area in Cell 1 facing northwest
Remarks	Sump area backfilled with protective cover and covered with a geosynthetic rain flap

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Photograph 21

Date: 6-4-09

Photographer: Kyle Baucom

Location / Orientation	South end of Cell 1 facing east
Remarks	Protective cover placement

Photograph 22

Date: 6-12-09

Photographer: Jimmy Addis

Location / Orientation	East side of Cell 1 facing west
Remarks	LCS and LDS lateral with protective cover placement to the south

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Photograph 23

Date: 6-8-09

Photographer: Kyle Baucom

Location / Orientation	South of Cell 1 facing east
Remarks	Force main pipe prior to burial

Photograph 24

Date: 7-2-09

Photographer: Jimmy Addis

Location / Orientation	South of Cell 1 facing north
Remarks	Control panel area with excavation for discharge pipes

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Photograph 25

Date: 6-23-09

Photographer: Kyle Baucom

Location / Orientation	South of Cell 1 facing northeast
Remarks	Control panel area

Photograph 26

Date: 4-24-09

Photographer: Kyle Baucom

Location / Orientation	Northwest of scale pad area facing northeast
Remarks	Access road connecting Plant Allen Road to the scale pad area

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Photograph 27

Date: 6-4-09

Photographer: Kyle Baucom

Location / Orientation	North end of scale pad area facing southeast
Remarks	Truck scale and wheel rinse area for dry ash hauling

Photograph 28

Date: 7-2-09

Photographer: Jimmy Addis

Location / Orientation	Southeast of scale pad area facing northwest
Remarks	Scale pad basin with formwork in place for waterstop seals

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Photograph 29

Date: 4-24-09

Photographer: Kyle Baucom

Location / Orientation	Southeast of scale pad area facing south down existing haul road
Remarks	Arch bridge spanning existing sluiced ash pipes

Photograph 30

Date: 7-2-09

Photographer: Jimmy Addis

Location / Orientation	On existing haul road east of scale pad area facing southeast
Remarks	Transformer pad with dual power supply

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Photograph 31

Date: 7-7-09

Photographer: Jimmy Addis

Location / Orientation	South of Cell 1 facing east
Remarks	Piping in leachate manifold vault

Photograph 32

Date: 7-7-09

Photographer: Jimmy Addis

Location / Orientation	Unknown
Remarks	GunnCo pump prior to installation in riser

Field Reports

9751 Southern Pine Blvd
Charlotte, NC 28273
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(704) 525-3953

Field Report

Date 04/08/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Windy / 55
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion Dennis – Earnhardt Grading	
Time 7:00-5:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA. Participated in Earnhardt tailgate meeting, received site-specific training from Dennis Pickell (EG).

First day of geosynthetics deployment. Plastic Fusion deployed GCL and geomembrane and performed seaming/air testing of geomembrane.

Deployed from eastern CQA limits to approx. 45 feet east of eastern berm inside toe of slope. Deployed from approx. 15 feet south of northern lateral ditch to northern CQA limits.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	1925.5	43,608	1.00
To Date	1925.5	43,608	1.00

Earnhardt Grading continuing construction of low-perm soil liner, monitored by Jim McCutcheon (S&ME). Working of soil progressing as follows: western half, northern third: 3rd lift. Western half, central third: 2nd lift. Western half, southern third: 1st lift.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/09/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Mild / 65
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion Dennis – Earnhardt Grading	
Time 7:00-4:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Second day of geosynthetics deployment. Plastic Fusion deployed GCL and geomembrane and performed seaming/air testing of geomembrane.

Deployed from edge of yesterday's deployment west to approx. 100 feet east of eastern leachate corridor (center of landfill).

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	4272.5	91,935	2.11
To Date	6198	135,543	3.11

Earnhardt Grading continuing construction of low-perm soil liner, monitored by Jim McCutcheon (S&ME). Working of soil progressing as follows: western half, northern third: 3rd lift. Western half, central third: 2nd lift. Western half, southern third: 1st lift. Also fine-grading subgrade in southeastern quadrant of landfill.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/10/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Mild to rainy / 57
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion Dennis – Earnhardt Grading	
Time 7:00-12:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Third day of geosynthetics deployment. Plastic Fusion deployed GCL and geomembrane and performed seaming/air testing of geomembrane. Light rain began around 12:00, seaming ceased around 12:15.

Deployed from edge of yesterday's deployment west through eastern leachate corridor (center of landfill). Deployed to approx. 360 feet south of existing deployment from eastern edge of CQA limits to approximately 10 feet west of inside western berm toe of slope.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	2315.5	52,380	1.20
To Date	8513.5	187,923	4.31

Earnhardt Grading continuing construction of low-perm soil liner on western half of landfill, monitored by Jim McCutcheon (S&ME). Fine-grading of subgrade in southeastern quadrant of landfill completed.

END OF REPORT

On-Site Representative/Company

Cedric Ruhl
S&ME Personnel

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Field Report

Date 04/11/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Mild / 55
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion Dennis – Earnhardt Grading	
Time 7:00-11:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Fourth day of geosynthetics work, no deployment today (too wet). Plastic Fusion performed air testing of geomembrane seams and repaired defects.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	8513.5	187,923	4.31

Earnhardt Grading pumping down water accumulation in sump, working soil on western half of cell.

Departed site at 11:00. Returned to office, performed laboratory destructive testing on samples DS 1 through DS 15, all samples passed.

END OF REPORT

On-Site Representative/Company

Cedric Ruhl
S&ME Personnel

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Field Report

Date 04/13/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cloudy / 55
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00-7:15	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

No work being performed today due to expected rainfall.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	8513.5	187,923	4.31

Departed site at 0730.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/14/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cloudy / 55
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00-7:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

No work being performed today due to expected rainfall.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	8513.5	187,923	4.31

Departed site at 0730.

END OF REPORT

_____ **On-Site Representative/Company**

Cedric Ruhl
S&ME Personnel

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Field Report

Date 04/15/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Partly Cloudy / 65
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00 – 5:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Fifth day of geosynthetics work, no deployment today (subgrade too wet). Plastic Fusion performed vacuum box testing of geomembrane repairs and deployed geocomposite.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	8513.5	187,923	4.31

Earnhardt Grading working soil in southwestern portion of cell.

Departed site at 1730.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/16/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Mild / 65
Present at Site Cedric Ruhl & Kyle Baucom, S&ME, Inc. Albert – Plastic Fusion Dennis – Earnhardt Grading	
Time 7:00-5:45	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Plastic Fusion deployed GCL and geomembrane and performed seaming/air testing of geomembrane.

Deployed from just south of first lateral in Cell 1B to anchor trench and approximately 100 feet east of eastern leachate corridor (center of landfill).

See Cedric's 4/16/09 field report for seaming and deployment summary as of today.

Earnhardt Grading continuing construction of low-perm soil liner, monitored by Jim McCutcheon (S&ME). Working of soil progressing as follows: western half, northern third: fine grading. Western half, central third: fine grading. Western half, southern third: 3rd lift. Also fine-grading subgrade in leachate corridor. Still need to fine grade western laterals.

Also, talked to Steve of Crowder Construction. 2nd row of point on concrete slab point elevations to be changed from 645.85 to 644.85. We also discussed the elevations matching up between asphalt and concrete coming into the scale pad area.

1745 left site to travel back to office

END OF REPORT

	Kyle Baucom
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/16/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Partly Cloudy / 65
Present at Site Cedric Ruhl S&ME, Inc. Kyle Baucom S&ME, Inc. Albert – Plastic Fusion	
Time 7:00 – 5:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Sixth day of geosynthetics work, fourth day of geosynthetics deployment. Plastic Fusion performed deployment, seaming, and air testing of geomembrane.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	5,277.5	115,789	2.65
To Date	13,791	303,712	6.97

Observed the effects of driving a front-end loader over GCL during geomembrane deployment. Loader tires leave minor indentations in GCL ranging from approximately 1/16 inch to 1/8 inch in depth.

Also observed the effects of “therma-bonding” or “heat tacking” as a means of seaming geotextile portion of geocomposite. This method uses a small blowtorch to melt the geotextile together at the overlaps. This method appears to leave a smooth finish free of the vertical wrinkles caused by sewing the geotextile. However, this method can sometimes leave burn marks ranging in size from approximately 1/16 inch to ¼ inch as shown in photos taken today.

Earnhardt Grading working soil in southwestern portion of cell and excavating for central leachate collection corridor.

Departed site at 1730.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/17/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny / low 70s
Present at Site Cedric Ruhl & Kyle Baucom, S&ME, Inc. Albert – Plastic Fusion Dennis – Earnhardt Grading	
Time 9:00-3:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0900 arrived on site to perform geosynthetics CQA.

Plastic Fusion performed repairs on previous day's geomembrane installation and performed corresponding field testing. Plastic Fusion also began LDS geocomposite installation along eastern berm.

Followed up with air test results from previous day's geomembrane installation.

Earnhardt Grading was working on fine-grading compacted soil liner in leachate corridor and on western half of Cell 1. Still need to fine grade western laterals.

1530 left site to travel back to office and perform destructive sample lab testing.

END OF REPORT

	Kyle Baucom
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/17/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny / 70
Present at Site Cedric Ruhl S&ME, Inc. Kyle Baucom S&ME, Inc. Albert – Plastic Fusion	
Time 7:15 – 4:15	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0715 arrived on site to perform geosynthetics CQA.

Seventh day of geosynthetics work. Plastic Fusion performed deployment of geocomposite, seamed one tie-in seam, and performed defect repairs and vacuum box repair testing.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	269.5	0	0
To Date	14060.5	303,712	6.97

Earnhardt Grading working soil in sump area and excavating for lateral trenches.

Departed site at 1615.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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(704) 523-4726
(704) 525-3953

Field Report

Date 04/18/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny / 75
Present at Site **Cedric Ruhl S&ME, Inc.** **Albert – Plastic Fusion**	
Time 7:00 – 12:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Eighth day of geosynthetics work, fifth day of geosynthetics deployment. Plastic Fusion performed deployment, seaming, and air testing of geomembrane, and deployment of geocomposite in the eastern LDS lateral. Plastic Fusion also performed fusion of 10 inch diameter perforated pipe for the eastern LDS lateral. After fusion, the pipe was placed in the LDS lateral on top of the geocomposite deployed today.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	1,740	33,502.5	0.77
To Date	15,800.5	337,214.5	7.74

Earnhardt Grading performing excavation for sump and laterals on eastern side of cell.

Departed site at 1230.

Returned to office to conduct laboratory destructive testing of DS 19-26. These DS tests passed. Reviewed destructive testing results performed yesterday by Kyle Baucom (DS 16-18). DS 18 appears to have marginal results for peel tests and may qualify as a failing test. Cedric Ruhl will consult with Ken Daly before declaring DS18 as passing or failing.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/20/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cool / 55
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00 – 7:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

No geosynthetics work today, too wet.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	15,710.5	337,214.5	7.74

Departed site at 0700.

END OF REPORT

_____ **On-Site Representative/Company**

Cedric Ruhl
S&ME Personnel

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Field Report

Date 04/21/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Windy / 70
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00 – 4:00	**Mileage** 52 mi. round trip x 2 trips

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Ninth day of geosynthetics work. Plastic Fusion performed air testing of geomembrane, repair and repair testing of geomembrane defects, and deployment of geocomposite in the southeastern portion of the cell.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	15,710.5	337,214.5	7.74

Departed site at 9:30, returned to office to conduct destructive testing on samples DS 27-30 and DS18 A and B (retests of failing DS18). Specification requirements were met for these samples.

Returned to the site at 1230. Jim McCutcheon (S&ME) and I observed the existing geocomposite for damage (mostly due to the heat tacking of the geotextile overlaps), and marked damaged areas with marking paint.

Earnhardt Grading performing excavation laterals on eastern side of cell. Earnhardt is also preparing the subgrade on the eastern side of the cell for geosynthetics deployment.

ABC is hauling ash from the ash pond to the future cell 2 area.

Departed site at 1600.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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9751 Southern Pine Blvd
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Field Report

Date	Job No.
04/21/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Plastic Fusion	Sunny / 75

Present at Site
Ken Daly S&ME, Inc.
Kyle Baucom S&ME, Inc.
Jim McCutcheon S&ME, Inc.

Time	Mileage
10:00 – 12:15	

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Construction Layout and Geosynthetics CQA

Observations/Remarks:

Scale Pad Area:

Approximately 10:00 arrived at scale-pad area. Ken Daly and Kyle Baucom (S&ME) met with Sandy Brown, Steve Hartley, Brad Hughey (Crowder Construction), Dennis Foltz (Earnhardt), Ted Manes (Duke), Larry Cloninger (Carolinas Design Group).

Brad Hughey requested the meeting today to review location and elevations of footings at the scale pad area. After discussion with Larry Cloninger (Surveyor for Crowder) it was understood that Crowder construction used different control points (and datum) than Earnhardt Grading has been using. The result is that four scale footing have been poured at a location approximately 2-ft north and 2-ft east and 0.7 feet higher than the design locations and elevations (as indicated in S&ME construction drawings).

The group agreed to review as-built locations and make adjustments to the remainder of the scale pad and asphalt access road to fit the scale footing foundations. Earnhardt Surveyor (Donnie Lawrence and Associates) was on-site and was requested to provide as-built locations of the four subject footings to S&ME. In addition, Larry (Carolinas Design Group) will provide S&ME and Earnhardt his comparison of control points he was using to control points Earnhardt was using. Based on review of the information, S&ME will provide the group an update control points for the scale pad area.

As the scale pad will be higher than designed, the asphalt access road will need to be adjusted. Ted Manes and Ken Daly discussed this with Dennis Foltz. Dennis indicated that Earnhardt could field-fit the asphalt access road grades to meet the scale pad. Ken Daly and Ted Manes agreed this was acceptable.

Cell 1 Geosynthetics Observation:

Approximately 11:00: Ken Daly, Kyle Baucom, and Jim McCutcheon observed geosynthetics activities at Cell 1. Crew of 3 laborers, track-hoe, and dump truck was placing drainage aggregate in the Cell 1B LDS corridor. Plastic Fusion crew was placing geocomposite drainage layer on Cell 1B. We observed heat seamed geotextile of the geocomposite drainage layer where the geotextile was burned through to the HDPE geonet. Jim McCutcheon will observe the geotextile seams today and mark locations that need repair. We discussed this with Al Corbitt, of Plastic Fusion. Al will repair subject locations. I made it clear to Al that heat seaming quality must improve or S&ME will not allow heat seaming (with a hand-held torch) to continue.

We discussed with Al a location of geomembrane “trampolining” where the southeastern leachate lateral meets the leachate corridor. Al proposed to weight the location with sandbags as a solution. I indicated

we would observe the geomembrane conditions after weighting to observe its performance.

We observed an area along the south side of Cell 1B, roughly 50-ft east of the leachate corridor where geosynthetics terminated. At this termination there is a portion where GCL extends several inches beyond the geomembrane. The GCL felt soft to the touch, indicating the bentonite had hydrated. The GCL was observed to be soft beneath the geomembrane in this area too. At the same termination, we observed an area where GCL was covered by the geomembrane. Comparatively, the GCL felt firm to the touch in this area.

15:40 discussed with Cedric Ruhl by phone: Observing geotextile heat seaming – he and Jim McCutcheon have observed and marked areas requiring repair; Cedric will observe the geomembrane trampoline-ing area tomorrow for condition and response as needed; Cedric will observe the noted area of GCL tomorrow.

END OF REPORT

	Kenneth R. Daly
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/22/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Windy / 60
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00 – 1:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Tenth day of geosynthetics work, sixth day of geosynthetics deployment. Plastic Fusion performed deployment, seaming, and air testing of geomembrane. Geomembrane was deployed along the western berm of the western subcell to approximately 50 feet into the interior of the cell, and from the northern CQA limits to approximately 100 feet north of the southern berm.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	1,742	38,799.5	0.89
To Date	17,452.5	376,014	8.63

Earnhardt Grading performing excavation for southern anchor trench. ABC is hauling ash from the ash pond to the future cell 2 area.

Plastic Fusin ceased deploying after lunch due to windy conditions. Departed site at 1300.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/23/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Clear / 80
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 7:00 – 4:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Eleventh day of geosynthetics work, seventh day of geosynthetics deployment. Plastic Fusion performed deployment, seaming, and air testing of geomembrane. Geomembrane was deployed along the western edge of the western subcell to approximately 100 feet from the central LCS/LDS trunkline.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	5,505.5	117,708	2.70
To Date	22,958	493,722	11.33

Earnhardt Grading performing excavation for southern anchor trench and southern lateral. ABC is hauling ash from the ash pond to the future cell 2 area.

Departed site at 1630.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/24/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Clear / 80
Present at Site Cedric Ruhl S&ME, Inc. Albert – Plastic Fusion	
Time 6:30 – 18:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0630 arrived on site to perform geosynthetics CQA.

Twelfth day of geosynthetics work, eighth day of geosynthetics deployment. Plastic Fusion performed deployment, seaming, and air testing of geomembrane. Completed geomembrane deployment of LDS system. Machine No. 52 not working properly, replaced by Machine No. 500.

Observed portions of GCL not overlain by geomembrane. Exposed GCL is dry to the touch and does not exhibit “squeezeout” of bentonite clay at the edges. GCL underneath geomembrane is moist to the touch.

Two tie-in seams will be seamed tomorrow. Kyle Baucom (S&ME) to monitor geosynthetics CQA tomorrow morning.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	4,480.5	89,270.5	2.05
To Date	27,438.5	582,992.5	13.38

Earnhardt Grading performing excavation for southern anchor trench and finished excavation for southern lateral. Asphalt is being placed today for entrance facility construction. ABC is hauling ash from the ash pond to the future cell 2 area.

Departed site at 1800.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/27/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Clear / 80
Present at Site Cedric Ruhl S&ME, Inc. Albert Corbett – Plastic Fusion	
Time 7:00 – 12:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Thirteenth day of geosynthetics work. Seaming of secondary geomembrane system was completed on Saturday. Today Plastic Fusion performed deployment and seaming of geocomposite.

Seaming and deployment summary as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	28,628.5	582,992.5	13.38

ABC is hauling ash from the ash pond to the future cell 2 area.

Departed site at 1230.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date	Job No.
04/28/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Plastic Fusion	Clear / 80

Present at Site
Cedric Ruhl S&ME, Inc.
Kenneth Daly S&ME, Inc.
Albert Corbett – Plastic Fusion

Time	Mileage
7:30 – 5:00	52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0730 arrived on site to perform geosynthetics CQA.

Fourteenth day of geosynthetics work. Today Plastic Fusion performed deployment and seaming of geocomposite and detailing of secondary geomembrane.

Seaming and deployment of secondary geomembrane is complete.

At 1430 Ken Daly came on site to observe the geosynthetics. Ken observed trampolining in the eastern LDS corridor at the southern end of the cell. Ken spoke with Albert and requested that Albert patch the geomembrane in this location to enable intimate contact between the GCL and the geomembrane at this location. Ken also noted that last week ponded water was observed in the middle lateral on the eastern half of the cell where the lateral joins the corridor. Ken requested that Albert patch the geomembrane in this location to enable water to flow into the corridor.

Destructive testing through DS50 was completed today with results meeting specifications.

ABC is hauling ash from the ash pond to the future cell 2 area. SEFA is also hauling ash to the future cell 2 area.

Departed site at 1700.

END OF REPORT

On-Site Representative/Company	Cedric Ruhl S&ME Personnel

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Field Report

Date 04/29/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Clear / 80
Present at Site Cedric Ruhl S&ME, Inc. Albert Corbett – Plastic Fusion	
Time 7:00 – 3:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Fifteenth day of geosynthetics work. Today Plastic Fusion performed deployment and seaming of geocomposite and detailing of secondary geomembrane.

Observed installation of patches in the LDS corridor near the sump (see field report from 04/28/2009).

Destructive testing through DS56 was completed today with results meeting specifications, which completes destructive testing of the secondary liner system.

ABC is hauling ash from the ash pond to the future cell 2 area. SEFA is also hauling ash to the future cell 2 area.

Departed site at 1530.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date 04/30/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cloudy / 80
Present at Site Cedric Ruhl S&ME, Inc. Albert Corbett – Plastic Fusion	
Time 7:30 – 3:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0730 arrived on site to perform geosynthetics CQA.

Sixteenth day of geosynthetics work. Today Plastic Fusion performed deployment and seaming of geocomposite.

ABC is hauling ash from the ash pond to the future cell 2 area. SEFA is also hauling ash to the future cell 2 area.

Departed site at 1530.

END OF REPORT

On-Site Representative/Company	Cedric Ruhl **S&ME Personnel**

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Field Report

Date 05/01/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cloudy / 75
Present at Site Cedric Ruhl S&ME, Inc. Albert Corbett – Plastic Fusion	
Time 9:00 – 3:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0900 arrived on site to perform geosynthetics CQA.

Seventeenth day of geosynthetics work. Today Plastic Fusion performed deployment and seaming of geocomposite as well as patching of geocomposite. The geocomposite for the secondary system is completed.

ABC is hauling ash from the ash pond to the future cell 2 area. SEFA is also hauling ash to the future cell 2 area. Earnhardt Grading is performing work on the entrance facility.

Departed site at 1530.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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S&ME
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Field Report

Date	Job No.
5-1-09	1356-06-825-[illegible]

Project/Location: Allen Ash Landfill

Contractor: Earnhardt/ABC/SEFA

Weather/Temp: P/Cloudy

Present at Site: Earnhardt Steve Crowder
Darrin - ABC
Dalton - SEFA
Danny
Jim/Paul - S&ME

To: _____

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☒ In-Place Density
- ☒ Other (Explain): Site Work

Time: 8

Mileage: 40

Observations/Remarks:

Earnhardt working on new road area over bridge and raising road level on N side to grade w/ bridge with Select fill material and ABC stone. Also back fill on curb area's with top soil to stop any wash out problem if they occur. Density Tests and Nuclear testing on stone.

Also 2 Concrete sections poured today, Entrance Ramp and second area and sump area for tire wash-footing.

ABC spreading out ash to dry and Prep for testing, noting ready at this time.

SEFA placing & spreading out ash and rolling in they need to spread & compact more before testing.

_____ On-Site Representative/Company

Jim McCrohon
S&ME Personnel

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(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
5-1-09	1356-06-0825-09

Project/Location: ALLEN ASH CANOFILL

Contractor	Weather/Temp
EARNHARDT	Sunny / 70°

Present at Site: EARL / S&ME
J. M. — S&ME
KEVIN — EARNHARDT

Time	Mileage
2.5 ✓	40.0 ✓

To: RL

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

S&ME personnel on site to perform NDT's on ABC STONE placed and compacted @ pipe bridge area. 3 NDT's were performed. All NDT's met compaction requirements.

Earl T. Alexander

On-Site Representative/Company | **S&ME Personnel**

MAY 4 2009

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3644

S&ME
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Field Report

Date 8-1-09	Job No. 1356-06-825-09
Project/Location ALLEN ASH LANDFILL	
Contractor CROWDER	Weather/Temp Cloudy/60's
Present at Site EARL - Stone STEVE - CROWDER	
Time 4.0	Mileage —

To: File

- [x] Concrete sampling and testing — Cast 1 sets of 5 cylinders/prisms/cubes/beams
- [ ] Grout sampling and testing — Cast ____ sets of ____ cylinders/prisms/cubes/beams
- [ ] Mortar sampling and testing — Cast ____ sets of ____ cylinders/prisms/cubes/beams
- [ ] Sample locations attached — Mix design 4609 Design compressive strength 8000
- [x] Picked up 2 sets, logged — Addition of water authorized by: STEVE - CROWDER

Set Number	Truck Number	Ticket #	Time Batched	Time Truck Arrived	Time Sampled	Time Truck Completed	Water Added (gal)	Slump (in)	% Air	Unit Weight of Concrete (pcf)	Temp. of Air (°F)	Temp.of Concrete (°F)	# Cylinders Cast	Location
1	2707	001566	0730	0755	0800	0835	—	2.75	2.6	145.76	68°	78°	5	SEE BELOW

Comments/Location: ① SLAB East of Approach Ramp

On-Site Representative/Company

Scott J. Alexander
S&ME Personnel

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S&ME Form FRCR03

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Field Report

Date 05/02/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cloudy / 70
Present at Site Cedric Ruhl S&ME, Inc. Albert Corbett – Plastic Fusion	
Time 7:00 – 9:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Today Plastic Fusion moved the fused LDS pipe from the staging area into the western LDS corridor.

Departed site at 0930.

END OF REPORT

_____ **On-Site Representative/Company**

Cedric Ruhl
_____ **S&ME Personnel**

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Field Report

Date	Job No.
5-2-09	1356-06-825-09

Project/Location: Allen Ash Land fill -

Contractor	Weather/Temp
Crowder/ABC	Cloudy

Present at Site: Steve Crowder, ABC - Dalton -

To: _____

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☒ Other (Explain): Site Work.

Time	Mileage
4 ✓	40 ✓

Observations/Remarks:

Crowder working on SE corner area and I found that they are backfilling on Roadwork on SW Corner of Cell 1 for electrical.

ABC Scarifying Cell 2 area trying to dry out and roll in for testing. Not hauling today, work on Roadway over pond.

_____ On-Site Representative/Company

J E McCutchen
S&ME Personnel

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Field Report

Date	Job No.
05/04/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Plastic Fusion	Cloudy / 70

Present at Site
Cedric Ruhl S&ME, Inc.
Jimmy Addis S&ME, Inc.
Albert Corbett – Plastic Fusion

Time	Mileage
6:30 – 4:30	52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0630 arrived on site to perform geosynthetics CQA.

First day of geosynthetics deployment for primary geomembrane. Plastic Fusion deployed geomembrane and performed seaming/air testing of geomembrane. Due to high winds and threat of rain, seaming ceased around 11:45.

Deployed on eastern side of cell from eastern CQA limits to approximately 10 feet west of the interior toe of slope, and from northern CQA limits to approximately 100 feet from southern anchor trench.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	2,059	46,681.5	1.07
To Date	2,059	46,681.5	1.07

After lunch, recorded remaining information from the morning's deployment. Jimmy and I proceeded to review the day's information and the electronic CQA database applications.

Earnhardt Grading and Crowder continued construction of the entrance facility, and ABC and SEFA continued to haul, spread, and compact ash to construct Cell 2 subgrade.

Departed site at 1630.

END OF REPORT

On-Site Representative/Company	Cedric Ruhl S&ME Personnel

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Field Report

Date: May 4, 2009	Job No.: 13540-06-825
Project/Location: Plant Allen RAB Ash LF/Belmont	
Contractor: Earnhardt/PFF	Weather/Temp: PC windy/69-81°
Present at Site: Cedric Ruhl - Jim Mac, Dennis Faltz, Al Corbett	
Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geomembrane

Observations/Remarks:

Today the geosynthetic contractor deployed geomembrane primary panels 1 thru 31, these were dropped on the NE corner down the East berm. I monitored deployment and observed some of the air testing of field seams, approximately 40,681 ft². of liner installed today. Cedric monitored seaming, three wedges used (#'s 588/760/777), and some air testing. PFF stopped for the day at noon due to windy conditions, all seams are welded, contractor sand bagged leading edges, and toe of inside slope. Cedric and I laid out LDT's 1-3, and logged in field data this pm.

Earnhardt placing drainage aggregate around 18" dia. LDS header pipe in Cell 1A. Utilizing two Kubotas to haul and place washstone.

ABC hauling flyash out of pond #3, into future Cell 2 East side, and SEFA hauling silo ash into Cell 2 West side. Jim monitoring Cell 2 structural fill, see his report.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
5-4-09	1356-06-825-09

Project/Location: Allen Ash Landfill

Contractor: Earnhardt/Crowder/ABC SEFA

Weather/Temp: P/Cloudy

Present at Site: Dennis - Earnhardt; Steve - Crowder; Dalton - ABC; Jim - S+ME; Jimmy A / Cedric - S+ME

Time: 9.5 ✓

Mileage: 40 ✓

To: _____

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☒ In-Place Density
- ☒ Other (Explain): Site work.

Observations/Remarks:

Earnhardt placing rock over pipe in Cell 1 using ATV's with dump beds to transport stone. Also conducted density tests on roadway and New Bridge Scale area. Nuclear density did not achieve 100% compaction need to retest.

Crowder placed wheel was equipment in excavated footing and backfilled with stone compacting with jumping jack. Compactor inside trench which was to narrow to do nuclear density on stone sand cons. & monitored placement and compaction material appeared to be firm and stable around the structure. Also stone placed outside footing area for concrete placement which was compacted. Will test am 5-5-09 for compaction.

ABC & Sefa placing ash in Cell 2. At present ABC not ready for any more tests, Conducted Density tests on 1st lift of SEFA W side of Cell. Achieved 95% + compaction.

_____ On-Site Representative/Company

J. M. Eckhart S&ME Personnel

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Field Report

Date	Job No.
5-4-09	1356-06-825-09

Project/Location: Allen Ash Landfill Scale Roadway

Contractor	Weather/Temp
Earnhardt	Sunny/70's

Present at Site: Earl - S&ME; Jim; Mike - Earnhardt

Time: 3.0 ✓ **Mileage**: 40.0

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

S&ME personnel on site to perform NDT's on ABC stone placed and compacted on roadway. 6 NDT's were performed. ALL NDT's failed to meet the 100% compaction requirement. Contractor made aware of failures. Contractor to rework area and notify S&ME on a re-test of failed area.

On-Site Representative/Company

Earl J. Alexander
S&ME Personnel

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Field Report

Date 05/05/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Rainy / 65
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc.	
Time 7:00 – 8:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

No geosynthetics work today due to rain.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	2,059	46,681.5	1.07

Earnhardt Grading and Crowder continued construction of the entrance facility.

Departed site at 0830.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date	Job No.
May 5, 2009	1356-06-825 Ph.9

Project/Location
Plant Allen RAB Ash LF / Belmont NC

Contractor	Weather/Temp
EG/PFF/ABC/SEFA	Cloudy / 68-75°

Present at Site
Cedric R. - Jim M.
Dennis F.
Al C.

Time

Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Observed Earnhardt placing drainage aggregate (#57 washstone) around 10 inch LDS header pipe in Cell 1A. Rained overnight, two pumps dewatering sump area. Site rained out at 1pm.

PFF did not work, to wet.

See Jim's report for const. activity by Crowder, ABC and SEFA.

Jimmy Addis

On-Site Representative/Company

S&ME Personnel

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Field Report

Date	Job No.
55-09	135606825

Project/Location Allen Ash Landfill

Contractor	Weather/Temp
Earnhardt SEFA Crowder ABC	RAIN

Present at Site
Dennis - Earnhardt
Dalton - ABC
Danny - SEFA
Steve - Crowder
Jim - S&ME

Time	Mileage
3.5 ✓	40 ✓

To: _____

Observations/Remarks:

On site as requested to perform sampling/testing for the following items:

☐ **Subgrade Observations** ☐ **Proofroll**

☐ **Other** Site Work.

Deficiencies Noted ☐ **Yes** (see comments) ☐ **No**

Equipment Utilized: ABC - Stop work - 930 AM Rain / SEFA - Hauling Ash. placement only

Location: Earnhardt - Only placing Rock over pipe cell #1 Crowder trying to work Saddlecreek wanted - Nuclear density on stone had to cancel (Rain).

Density testing of compacted material

☐ **Soil** ☐ **Stone** ☐ **Asphalt**

Using: ☐ **Nuclear Density Gauge** ☐ **Test results and locations attached**

☐ **Drive Tubes** **All tests met specifications** ☐ **Yes** ☐ **No**

☐ **Sand Cone** **Collected Bulk Sample(s)** ☐ **Yes** ☐ **No**

General locations: _____

Foundation bearing materials evaluation

Design allowable bearing capacity: _____ **psf**

☐ **Deficiencies Noted** ☐ **Yes** (see comments) ☐ **No**

Location: _____

Comments: _____

_____ **On-Site Representative/Company**

Jim McCutchen **S&ME Personnel**

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Field Report

Date	Job No.
5-5-09	1356-06-825-09

Project/Location: ALLEN ASH LANDFILL

Contractor	Weather/Temp
LANN HANDT.	68 / Raining

Present at Site: LANE & Jim & Stmt

To: Dale

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Time	Mileage
2.0 ✓	20.0 ✓

Observations/Remarks:

Stmt personnel on site to perform NDT's retests on roadway that failed on 5-4-09. Tests were cancelled due to rain, upon arriving on site.

On-Site Representative/Company

Earl L. Alexander
S&ME Personnel

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Field Report

Date	Job No.
5-5-09	1354-06-825-09

Project/Location: ASH ALLEN LANDFILL

Contractor	Weather/Temp
Crowder	Raining / 60's

Present at Site: Crane / Jim / Stone

Time: 2.0

Mileage: 20.0

To: Bill

Services Performed

- [x] Concrete Testing
- [x] Cylinder Pickup
- [ ] Asphalt Testing
- [ ] Steel Testing
- [ ] Asphalt Coring
- [ ] Concrete Coring
- [ ] Undercut Evaluation
- [ ] Foundation Evaluation
- [ ] Proofrolling
- [x] In-Place Density
- [ ] Other (Explain)

Observations/Remarks:

Stone personnel on site to perform concrete testing, and NDT's on stone placed around tide wash station. NDT's and concrete testing cancelled due to rain. Stone picked up 1-set of 5 concrete test cyls to be logged in to lab.

On-Site Representative/Company

S&ME Personnel

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Field Report

Date 05/06/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Rainy / 65
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc.	
Time 6:30 – 8:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0630 arrived on site to perform geosynthetics CQA.

No geosynthetics work today due to rain.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	2,059	46,681.5	1.07

Departed site at 0800.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date	Job No.
May 6, 2009	1356-06-825 Ph9

Project/Location: Plant Allen RAB Ash LF / Belmont NC

Contractor	Weather/Temp
EG / PFF / Crowder	Cloudy / 61-81°

Present at Site: Cedric R - Jim M, Dennis F, Al C, Steve H

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

2 1/4 inches of rainfall recorded onsite since 1pm on the 5th. Earnhardt worked on erosion control. Got a bigger water pump onsite today (6 inch).

PFF did not work.

Crowder Const. preparing subgrade around the wheel wash area and departure pad.

ABC & SEFA did not haul into Cell 2 today. Also see Jim's report.

Jimmy Addis

On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date	Job No.
5-6-09	1356-06-825-09

Project/Location: Allen Ash Landfill.

Contractor: Earnhardt ABC, Crowder SEFA

Weather/Temp: Cloudy - Rain

Present at Site:
Denon - Earnhardt
DALTON - ABC
DANIEL - SEFA
STEVE - Crowder
Jim/Kevin - S&ME

To: _____

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☒ Other (Explain): Site Work.

Time: 8.5 ✓

Mileage: 40 ✓

Observations/Remarks:

On site today after 2 1/4" overnight Rain, Cell 2 area N+S ends 1 1/2' of water Contractors not going to work today. SEFA working on placing Pipe for water drainage and build up road adj to the lay down area on N end of Cell.

Earnhardt not to work today along with Plastic Fusion -

Crowder requested Stone rubber on South end of scale and at ramp area. Kevin D. S&ME Tech came out and checked area - this is for placement of Concrete Area -

Get information Ref. Tire wash area from Kyle B and talk to Ken Daly Ref. same. (Rebar in Wing fond) Take information to Steve of Crowder to confirm Rebar placement.

_____ On-Site Representative/Company

J E McArthur
S&ME Personnel

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S&ME
9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
5-6-09	1356-06-825-09

Project/Location: ALLEN ASH LF SCALES

Contractor: CROWDER

Weather/Temp:

Present at Site: KEVIN DEMBINE > SME
JIM
STEVE - CROWDER

Time: 3

Mileage: 40

To: _____

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☒ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

SME TECH ON SITE FOR STONE NDT. PERFORMED TWO TESTS OF RAMP AREA S END OF SCALE.
TEST RESULTS OF 99.7 AND 97.3.
TWO TEST AVERAGE OF 98.5 MET REQUIRED COMPACTION ~~of~~ OF 98
OBTAINED FROM JIM.
SEE JIM REPORT FOR ADDITIONAL INFO.

MAY 7 2009

KEVIN DEMBINE

On-Site Representative/Company | **S&ME Personnel**

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(704) 525-3953

Field Report

Date 05/07/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Rainy / 65
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc.	
Time 7:15 – 8:15	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0715 arrived on site to perform geosynthetics CQA.

No geosynthetics work today due to rain.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	0	0	0
To Date	2,059	46,681.5	1.07

Departed site at 0815.

END OF REPORT

	Cedric Ruhl
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date	Job No.
May 7, 2009	1356-06-825 Ph9

Project/Location: Allen RAB Ash LF / Belmont NC

Contractor: EG/PFF/Crowder

Weather/Temp: PC / 65-82°

Present at Site: Cedric R - Jim M, Dennis F, Steve H

Time:

Mileage:

To: File

Services Performed

- [x] Concrete Testing
- [ ] Cylinder Pickup
- [ ] Asphalt Testing
- [ ] Steel Testing
- [ ] Asphalt Coring
- [ ] Concrete Coring
- [ ] Undercut Evaluation
- [ ] Foundation Evaluation
- [ ] Proofrolling
- [ ] In-Place Density
- [ ] Other (Explain)

Observations/Remarks:

No construction activity in either cell 1 or 2 today. 2/10 of an inch of rainfall recorded onsite last evening. Crowder Const. poured approximately 12 cu/yds. of 4000psi concrete @ tire wash and departure pad areas today. One set of five test cylinders molded and physical properties checked, all w/in specifications. Refer to attached field data sheet.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date 5-7-09	Job No. 1356-06-825-09
Project/Location Allen Ash Landfill (Scale Area)	
Contractor Crowder	Weather/Temp Clear
Present at Site Steve - Crowder, Jimmy A - S+ME, Jim M -	
Time	Mileage 40

To: File

- [x] Concrete sampling and testing — Thomas #514 Gastonia
- [ ] Grout sampling and testing
- [ ] Mortar sampling and testing
- [ ] Sample locations attached
- [ ] Picked up _____ sets, logged

Cast 1 sets of 5 (cylinders)/prisms/cubes/beams
Cast _____ sets of _____ cylinders/prisms/cubes/beams
Cast _____ sets of _____ cylinders/prisms/cubes/beams
Mix design 409 AE Design compressive strength 4000
Addition of water authorized by: _____

Set Number	Truck Number	Ticket #	Time Batched	Time Truck Arrived	Time Sampled	Time Truck Completed	Water Added (gal)	Slump (in)	% Air	Unit Weight of Concrete (pcf)	Temp. of Air (°F)	Temp. of Concrete (°F)	# Cylinders Cast	Location
	21	7245	9:36		1015		0	5	3.3	145.6	71	77	5	See comments

Comments/Location: South end Scale Depart Slab. & Dragon Wing Slabs For Tire wash.

_____ On-Site Representative/Company

Jimmy Aldis S&ME Personnel

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S&ME Form FRCR03

S&ME
9751 Southern Pine Blvd.
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
5-7-09	1356-06-825-09
Project/Location	
Allen Ash Landfill	
Contractor	**Weather/Temp**
Crowder/Earnhardt	Clear
Present at Site	
Steve - Crowder	
Time	**Mileage**
5.5 ✓	40 ✓

To: _____

Observations/Remarks:

On site as requested to perform sampling/testing for the following items:

☐ Subgrade Observations ☐ Proofroll

☒ Other Site Work

Deficiencies Noted ☐ Yes (see comments) ☐ No

Equipment Utilized: Assist Jimmy A with Concrete, Check with Contractor on

Location: work to be done. All canceled. ABC Cleanup Crowder Concrete

Check erosion. .5" Rain overnight. Noted washout in Sump area

Density testing of compacted material

☐ Soil ☐ Stone ☐ Asphalt

Using: ☐ Nuclear Density Gauge ☐ Test results and locations attached

☐ Drive Tubes All tests met specifications ☐ Yes ☐ No

☐ Sand Cone Collected Bulk Sample(s) ☐ Yes ☐ No

General locations: _____

Foundation bearing materials evaluation

Design allowable bearing capacity: _____ psf

☐ Deficiencies Noted ☐ Yes (see comments) ☐ No

Location: _____

Comments: _____

On-Site Representative/Company

S&ME Personnel

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Field Report

Date 05/08/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Cloudy / 65
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc. Albert Corbett Plastic Fusion	
Time 7:00 – 1:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Second day of geosynthetics deployment for primary geomembrane. Plastic Fusion deployed geomembrane and performed seaming/air testing of geomembrane. No deployment occurred after lunch due to rain.

Deployed on eastern side of cell from inside eastern toe of slope westwards approximately 130 feet, and from northern CQA limits to approximately 400 feet south (full roll pulls).

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	2,037	55,260	1.26
To Date	4,096	101,941.5	2.34

Departed site at 1330.

END OF REPORT

_____ **On-Site Representative/Company**

Cedric Ruhl
S&ME Personnel

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Field Report

Date	Job No.
May 8, 2009	1354-06-825 Ph9

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor: EG/PFF/ABC/SEFA

Weather/Temp: Cloudy-Fog-Rain/70's

Present at Site: Cedric R., Dennis E., Al Corbitt, Dalton L.

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☑ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geomembrane

Observations/Remarks:

Observed Earnhardt placing drainage aggregate (#57 washstone) around LDS-10 inch header pipe for cell 1A. Set up 6 inch pump, and were dewatering sump area in Cell 1.

PFF waited for fog to lift, did not start deployment of 60mil primary geomembrane until around 9am. Monitored deployment of panels 32-37 (55,260 ft.^{2}) on the NE floor and berm this am. Monitored production of field seams. PFF running 3 double hot wedge welders (#'s 508/522/760). PFF rained out at 1pm today, did not make tie-in weld along E side w/ P32. Sandbagged leading edge and tie-in.

ABC did not haul flyash today. Bladeing their section of structural fill in Cell 2.

SEFA hauled silo ash into their section of Cell 2 w/ 2 trucks.

Crowder Const. did not work, I picked up one set of five test cylinders and logged in.

Jimmy Addis

On-Site Representative/Company | **S&ME Personnel**

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Field Report

Date 05/09/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Partly Cloudy / 80
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc. Albert Corbett Plastic Fusion	
Time 7:00 – 3:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0700 arrived on site to perform geosynthetics CQA.

Third day of geosynthetics deployment for primary geomembrane. Plastic Fusion deployed geomembrane and performed seaming/air testing of geomembrane.

Deployed in central portion of cell from yesterday's deployment west, and from northern CQA limits to approximately 400 feet south (full roll pulls).

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	5,293	117,281.5	2.69
To Date	9,389	219,223	5.03

Departed site at 1530.

END OF REPORT

_____ **On-Site Representative/Company**

Cedric Ruhl
_____ **S&ME Personnel**

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(704) 523-4726
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Field Report

Date	Job No.
May 9, 2009	13560-06-825 PH9

Project/Location: Plant Allen RAB Ash LF / Belmont NC

Contractor: EG / PFF

Weather/Temp: Sunny-windy / 80's

Present at Site: Al Corbitt, Cedric R., Ted M., Kevin w/ EG

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geomembrane

Observations/Remarks:

Observed and monitored deployment of the 60 mil primary geomembrane. Panels 38-50 (126,574 ft.²) pulled today on the N slope and floor going W. Monitored field seam production. Contractor completed tie-in weld of 5/8/09 panels 4 to 20 along P32. Cedric and I both monitored air testing. Leading edge secured w/ sand bags. Material (rolls) staged for tomorrow.

EG cleaned up spilled drainage aggregate along 10 inch LDS header in subcell 1A.

Ted Manes wanted to know if the skimmer in sed. channel was working properly. EG said skimmer was checked on 5/8/09 and appeared to be doing its job.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date 05/10/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny/ 80
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc. Albert Corbett Plastic Fusion	
Time 7:15 – 3:15	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0715 arrived on site to perform geosynthetics CQA.

Fourth day of geosynthetics deployment for primary geomembrane. Plastic Fusion deployed geomembrane and performed seaming/air testing of geomembrane.

Deployed in western portion of cell from yesterday's deployment west to anchor trench, and from northern CQA limits to approximately 400 feet south (full roll pulls).

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	4,309.5	89,310.5	2.05
To Date	13,698.5	308,533.5	7.08

Departed site at 1515.

END OF REPORT

_____ **On-Site Representative/Company**

Cedric Ruhl
_____ **S&ME Personnel**

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(704) 523-4726
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Field Report

Date: May 10, 2009	Job No.: 13560-06-825 PH9
Project/Location: Allen RAB Ash LF / Belmont NC.	
Contractor: EG/PFF	Weather/Temp: Sunny / 67-80°
Present at Site: Al Corbitt, Cedric Ruhl, Bruce Brandy	
Time:	Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geomembrane

Observations/Remarks:

PFF deployed primary panels 51-76 (89,310 ft.²) on Cell 1 floor to the NW corner, then this afternoon dropped panels on the W slope going S, seamed up w/ existing floor panels. I monitored field seam production and air testing. Slope panels tied in today along the W side w/ floor panel #58. Contractor is yet to make extrusion weld of primary to secondary at LDS locations. This area along w/ leachate laterals are sand bagged heavily. Contractor had to patch the geocomposite on the NW corner, where EG has been entering w/ ATV's, hauling #57 washstone to the LDS header. PFF straightlined (trimmed) leading edge floor panels, before leaving site today. Cedric marked 17 destructs today, none cut yet.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
May 11, 2009	1356-06-825 Ph9
Project/Location	
Allen RAB Ash LF / Belmont NC	
Contractor	**Weather/Temp**
EG/PFF/ABC/SEFA	Cloudy/Rain-60's
Present at Site	
Dennis Foltz Al Corbitt Dalton Lambert Woody w/ SEFA	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

No construction activity on Cell 1 today, due to the weather conditions. ABC did not haul, dewatering in pond #1. SEFA hauled silo ash w/ 2 tandem axle trucks. Returned to office and worked on field reports, procured grid for cell #2, and print out of existing density test. Spoke w/ Ken and Kyle about site issues, and upcoming scheduling of work onsite.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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S&ME Form FRIF03

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Charlotte, NC 28273
(704) 523-4726
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Field Report

Date 05/12/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny/ 80
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc. Albert Corbett Plastic Fusion	
Time 7:15 – 11:15, 2:30 – 5:00	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0715 arrived on site to perform geosynthetics CQA.

Fifth day of geosynthetics deployment for primary geomembrane. Plastic Fusion performed patches and repair testing, and deployed geomembrane.

Deployed on western and eastern slopes to southern anchor trench.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	2,056	27,756	0.64
To Date	15,754.5	336,289.5	7.72

Departed site at 1515.

END OF REPORT

On-Site Representative/Company

Cedric Ruhl
S&ME Personnel

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Charlotte, NC 28273
(704) 523-4726
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Field Report

Date	Job No.
May 12, 2009	1356-06-825 PH9

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor	Weather/Temp
EG/PFF/ABC/SEFA	Sunny / 59°-77°

Present at Site: Dennis Foltz, Al Corbitt, Dalton Lambert, Cedric Ruhl - Earl Alexander

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Geomembrane

Observations/Remarks:

Earnhardt placing drainage aggregate around 10" LDS and 18" riser pipes in sump area. EG & PFF had concerns w/ plan details at the sump, some changes proposed by contractor and approved by Ken Daly. The West side 10" LDS pipe was positioned East of the 18" riser (leak) the other side (East) will remain as per plan. The 10" LDS is located w/in the 7' wide stone blanket, and 18" off leak riser. Washstone added to southern most 8" lateral to pick grade back up to existing floor grade, being depressed as before would not work.

PFF detailing this am & pm w/ one extrusion gun. Non-destructive testing observed (V-box), no leaks. 27 Ldt's cut out today. Liner deployed this afternoon P77-90 (18,045 ft.²) on the West slope and P91-96 (9,711 ft.²) on the SE slope. I monitored field seam production & deployment.

Ran 4 fdt's on Cell 2 East berm, all passed. ABC resumed piling wet ash on E berm and E floor. SEFA hauling dry ash on their half of cell 2 w/ 3 trucks.

See Earl's report, for Crowder's concrete pour.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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S&ME Form FRLFD3

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Charlotte, NC 28273
(704) 523-4726
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Field Report

Date 5-12-09	Job No. 1356-06-825-09
Project/Location ALLEN ASH LANDFILL	
Contractor CROWDER	Weather/Temp Sunny / 60's
Present at Site EARL / SUNE STEVE - CROWDER	
Time 3.0	Mileage 40.0

To: File

- [x] Concrete sampling and testing — Cast 1 sets of 5 cylinders/prisms/cubes/beams
- [ ] Grout sampling and testing — Cast ____ sets of ____ cylinders/prisms/cubes/beams
- [ ] Mortar sampling and testing — Cast ____ sets of ____ cylinders/prisms/cubes/beams
- [ ] Sample locations attached — Mix design 4009-PC Design compressive strength 4000
- [ ] Picked up ____ sets, logged — Addition of water authorized by: ____

Set Number	Truck Number	Ticket #	Time Batched	Time Truck Arrived	Time Sampled	Time Truck Completed	Water Added (gal)	Slump (in)	% Air	Unit Weight of Concrete (pcf)	Temp. of Air (°F)	Temp.of Concrete (°F)	# Cylinders Cast	Location
1	mx28	001644	0853	0921	0930	0955	0	3.0	3.8	142.08	62°	71°	5	SEE Below

Comments/Location: South End Ramp 5.0G

On-Site Representative/Company

Earl J. Alexander
S&ME Personnel

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S&ME Form FRCR03

9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953

Field Report

Date	Job No.
05/13/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Plastic Fusion	Sunny/ 75

Present at Site
Cedric Ruhl S&ME, Inc.
Jimmy Addis S&ME, Inc.
Albert Corbett Plastic Fusion

Time	Mileage
7:15 – 5:15	52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0715 arrived on site to perform geosynthetics CQA.

Sixth day of geosynthetics deployment for primary geomembrane. Plastic Fusion performed deployment, seaming, and air testing of geomembrane.

Deployed in southwestern quadrant of landfill cell.

Performed destructive testing samples on DS 1-19 (primary geomembrane), samples tested met specifications.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	4,818.5	102,734.5	2.36
To Date	20,573	439,024	10.07

Departed site at 1715.

END OF REPORT

On-Site Representative/Company	Cedric Ruhl S&ME Personnel

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(704) 525-3953 fax

Field Report

Date	Job No.
May 13, 2009	1356-06-825 Ph9

Project/Location
Plant Allen RAB Ash LF / Belmont NC.

Contractor	Weather/Temp
EG/PFF/ABC/SEFA	PC / 61-75°

Present at Site
Dennis F.
Al C.
Dalton L.
Woody.
Cedric R.

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain) Geomembrane "Primary"

Observations/Remarks:

- Earnhardt Grading backfilled Southend lateral East of sump w/ #57 washstone, on top of secondary geocomposite to flush w/ cell floor grade.
- PFF deployed 60 mil geomembrane on SW area in Cell #1 P97-121 (102,734.5 ft.²). I monitored deployment, field seaming (DBLHW) and air testing. Cedric pulled LDT's 1-19, all passed. Liner secured w/ sand bags.
- ABC hauling out of pond #3 w/ 8 tandem-axle dump trucks, into Cell #2 East side floor. I ran 3 fdt's on grid line 4 on future floor of Cell #2. All test passed, informed Dalton of test results.
- SEFA hauling silo ash from plant on to West side of Cell #2 floor, w/ 3 tri-axle dump trucks. I ran 3 fdt's on grid line 2. All test passed, informed Woody of test results.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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S&ME Form FRLF03

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Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
5-13-09	1356-06-825-09

Project/Location: Allen Ash Landfill

Contractor	Weather/Temp
Crowder	Sunny/70's

Present at Site: Zane - Some
Steve - Cardwell

Time	Mileage
2.0 ✓	40.0 ✓

To: Rich

Services Performed

- ☐ Concrete Testing
- ☑ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Picked up and logged in 1 - Set of 5 - Concrete test cyls

Earl T. Alexander

On-Site Representative/Company | **S&ME Personnel**

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(704) 523-4726
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Field Report

Date 05/14/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Partly Cloudy / 75
Present at Site Cedric Ruhl S&ME, Inc. Jimmy Addis S&ME, Inc. Albert Corbett Plastic Fusion	
Time 8:00 – 3:30	**Mileage** 52 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Geosynthetics CQA

Observations/Remarks:

0800 arrived on site to perform geosynthetics CQA.

Seventh day of geosynthetics work for primary geomembrane. Plastic Fusion performed seaming, air testing, and detailing of geomembrane.

Performed destructive testing samples on DS 20-25 (primary geomembrane), samples tested met specifications.

Seaming and deployment summary for primary geomembrane as follows:

	Length of Seams (feet)	Panel Area (sq ft)	Panel Area (acres)
Today	624.5	0	0
To Date	21,197.5	439,024	10.07

Departed site at 1530.

END OF REPORT

_____ Cedric Ruhl

On-Site Representative/Company **S&ME Personnel**

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(704) 523-4726
(704) 525-3953 fax

Field Report

Date May 14, 2009	**Job No.** 13560-06-825-09
Project/Location Allen RAB Ash LF/Belmont NC	
Contractor EG/PFF/ABC/Kruater	**Weather/Temp** PC/64-80°
Present at Site Dennis F. Cedric R. Albert C. Dalton L. Steven H.	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain) Geosynthetics

Observations/Remarks:

Earnhardt cleaned out the drainage ditch South of Cell #1, hauled mud to ABC's borrow area. Dewatering South end of Cell #2, soil berm area, pumping into pond #3. Six test pits were excavated in the borrow area to evaluate remaining soil liner material, Duke to pay Earnhardt to stockpile. This is the same area Cell #1 soil liner came out of. Bucket samples obtained, and taken into the lab. Pick w/ EG, GPS'd TP's.

PFF detailed geomembrane on the SW of Cell #1. Extrusion weld made at sump, also made tie-in weld (DBLHW) on W side middle floor panels. I monitored V-box testing of repairs. Cedric pulled destructs.

Crowder Const. poured slab #8 (14cy of 4000psi) and apron around tire wash. I molded 1 set of 5 test cylinders and checked physical properties, O.K.. ABC hauling into Cell #2. SEFA did not haul.

On-Site Representative/Company

Jimmy Addison
S&ME Personnel

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S&ME Form FRLF03

S&ME
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Charlotte, NC 28273
(704) 523-4726
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Field Report

Date 5-14-09	Job No. 1356-06-825-09
Project/Location Allen Ash Landfill (Scale)	
Contractor Crowder	Weather/Temp P/Cloudy
Present at Site Steve - Crowder Jimmy - S&ME	
Time	Mileage 40

To: File

- [x] Concrete sampling and testing — THOMAS #514
- [ ] Grout sampling and testing — 9 cy
- [ ] Mortar sampling and testing
- [ ] Sample locations attached
- [ ] Picked up _____ sets, logged

Cast 1 sets of 5 cylinders/prisms/cubes/beams
Cast _____ sets of _____ cylinders/prisms/cubes/beams
Cast _____ sets of _____ cylinders/prisms/cubes/beams
Mix design 4090 Design compressive strength 4000 PSI
Addition of water authorized by: _____

Set Number	Truck Number	Ticket #	Time Batched	Time Truck Arrived	Time Sampled	Time Truck Completed	Water Added (gal)	Slump (in)	% Air	Unit Weight of Concrete (pcf)	Temp. of Air (°F)	Temp. of Concrete (°F)	# Cylinders Cast	Location
1	2693	7949	1220		1:00		0	4½	4.	146.6	75	81	5	Comments -

Comments/Location: 11" Slap #8 and Apron around Tire wash.

_____ On-Site Representative/Company

Jimmy Addis S&ME Personnel

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S&ME Form FRCR03

S&ME
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(704) 523-4726
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Field Report

Date 5-14-09	**Job No.** Phase 09 1352-06-825
Project/Location Allen Steam	
Contractor Crowder	**Weather/Temp** Clear
Present at Site Glenn Rayfon, Jimmy Addis, Steve Hartley	
Time 1.5	**Mileage** 36

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☒ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

On site to run density on stone backfill at Fire Wash Area. Compaction test was 99.2% of 151.1 pcf MDD. Jimmy Addis & Steve Hartley informed of results.

H. Glenn Rayfon

On-Site Representative/Company **S&ME Personnel**

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Field Report

Date	Job No.
5-14-09	

Project/Location: Plant Allen

Contractor:

Weather/Temp:

Present at Site:

Time:

Mileage:

To:

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Samples taken from Borrow site after 1st Cut

	W D L			
TP-1	6'X5'X14'	TOP 2'	more clayey	Bottom yellow
TP-2	6 X 4½ X 14'	TOP 2+	"	mostly Lightwt. "
TP-3	6 X 4 X 14	TOP 1½	mostly lightwt.	" "
TP-4	6 X 3 X 14	TOP 2½	"	"
TP-5	6 X 3 X 12	TOP 1½	"	
TP-6	6 X 7 X 12	TOP 2½	"	

JM

On-Site Representative/Company | **S&ME Personnel**

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Field Report

Date 05/14/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny / low 80s
Present at Site **Cedric Ruhl, Jimmy Addis, Jim McCutcheon & Kyle Baucom, S&ME, Inc; Albert – Plastic Fusion; Dennis – Earnhardt Grading**	
Time 4:15-5:30	**Mileage** 40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Borrow Area Evaluation

Observations/Remarks:

1615 arrived on site and visited borrow area. Earnhardt had just finished covering the last test pit from the borrow area. From talking to Jim, six test pits bulk samples were collected. All samples were approximately 2-3' deep in the southern stretch of the borrow area. All material was underlying the top 4' of the "MH" material. From talking to Dennis, Earnhardt plans to excavate any material suitable for Cell 2 compacted soil liner and stockpile it. All other material will be used as protective cover or structural fill.

After visiting borrow area, drove the site and saw Crowder working in scale pad area. Also observed ash placement in Cell 2.

1730 left site to travel back to office.

END OF REPORT

	Kyle Baucom
On-Site Representative/Company	**S&ME Personnel**

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Charlotte, NC 28273
(704) 523-4726
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Field Report

Date: 5-15-09	Job No.: 1356-06-825-09
Project/Location: Allen Ash Landfill	
Contractor: Earnhardt	Weather/Temp: P/Cloudy
Present at Site: Dennis - Earnhardt, Jimmy A - S&ME, Jim M -	
Time: 6.5	Mileage: 40

To: _____

Observations/Remarks:

On site as requested to perform sampling/testing for the following items:

☑ Subgrade Observations ☐ Proofroll

☐ Other _____

Deficiencies Noted ☐ Yes (see comments) ☐ No

Equipment Utilized: Assist Jimmy A., Monitor test pit's after talking to Kyle B.

Location: Pits dug to -71 Samples TAken for Perm.

Density testing of compacted material

☐ Soil ☐ Stone ☐ Asphalt

Using: ☐ Nuclear Density Gauge ☐ Test results and locations attached

☐ Drive Tubes All tests met specifications ☐ Yes ☐ No

☐ Sand Cone Collected Bulk Sample(s) ☐ Yes ☐ No

General locations: _____

Foundation bearing materials evaluation

Design allowable bearing capacity: _____ psf

☐ Deficiencies Noted ☐ Yes (see comments) ☐ No

Location: _____

Comments: _____

On-Site Representative/Company

S&ME Personnel

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Charlotte, NC 28273
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Field Report

Date	Job No.
May 15, 2009	13556-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC

Contractor: EG/PFF/ABC/Crowder

Weather/Temp: Cloudy / 69-79°

Present at Site: ~~Dennis~~ Cedric R., Al C., Dalton L., Steven H.

Time:

Mileage:

To: File

Services Performed

- [x] Concrete Testing
- [x] Cylinder Pickup
- [ ] Asphalt Testing
- [ ] Steel Testing
- [ ] Asphalt Coring
- [ ] Concrete Coring
- [ ] Undercut Evaluation
- [ ] Foundation Evaluation
- [ ] Proofrolling
- [ ] In-Place Density
- [x] Other (Explain): Geosynthetics

Observations/Remarks:

The geosynthetic contractor deployed primary 60mil geomembrane panels 122-150 on the SE area of Cell #1. Primary liner blacked in. I monitored deployment / field seam production and pressure testing. Cedric test destructs 26-41 ~ all passed. Contractor made tie-in weld (DbIHW) of panel 122 to panels on the E berm. did not tie-in weld today's floor panels w/ existing E→W panels.

Crowder Const. poured 9 cu/yds. of 4000psi concrete for slab #7. One set of five test cylinders molded and physical properties checked, all w/in spec.. Took in one set of cyls. ~ logged into curing room.

ABC hauling flyash out of pond #3 into E side of Cell #2, no fdt's, did not have time.

P122-150 ~ 129,823.5 ft.²
S&ME Deployment total P1-P150 = 578,139.5 ft.²

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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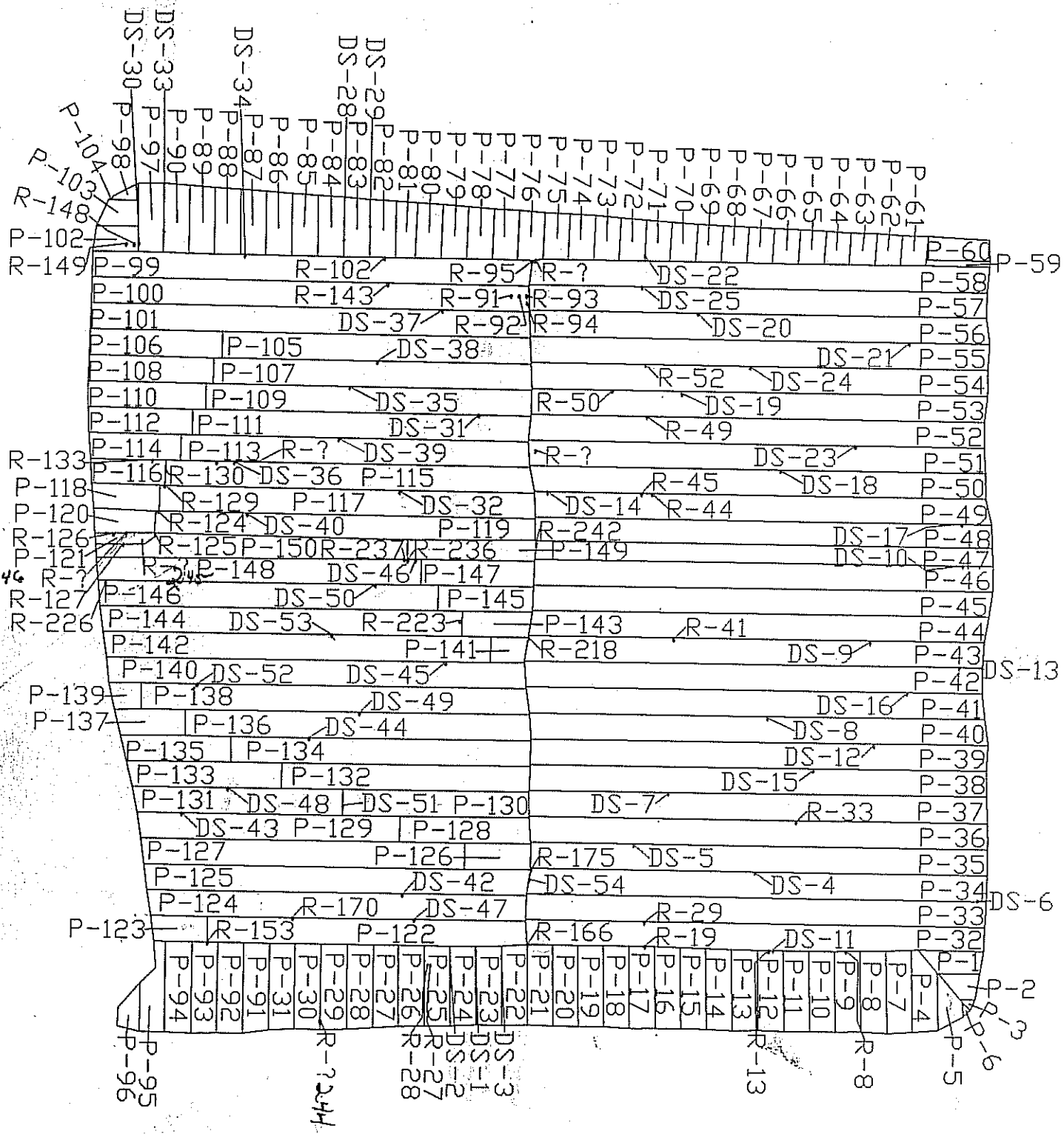
S&ME Form FRLFD3


DS-30 P-98 DS-33 P-97 P-90 P-89 P-88 DS-34 P-87 P-86 P-85 P-84 DS-28 P-83 DS-29 P-82 P-81 P-80 P-79 P-78 P-77 P-76 P-75 P-74 P-73 P-72 P-71 P-70 P-69 P-68 P-67 P-66 P-65 P-64 P-63 P-62 P-61
P-104 P-103 R-148 P-102 R-149
P-99 R-102 R-95 R-? DS-22 P-60 P-59
P-100 R-143 R-91 R-93 DS-25 P-58
P-101 DS-37 R-92 R-94 DS-20 P-57
P-106 P-105 DS-38 P-56
P-108 P-107 DS-21 P-55
P-110 P-109 DS-35 R-52 DS-24 P-54
P-112 P-111 DS-31 R-50 DS-19 P-53
P-114 P-113 R-? DS-39 R-49 P-52
R-133 P-116 R-130 DS-36 P-115 R-? DS-23 P-51
P-118 R-129 P-117 DS-32 R-45 DS-18 P-50
P-120 R-124 DS-40 P-119 DS-14 R-44 P-49
R-126 R-125 P-150 R-237 R-236 R-242 DS-17 P-48
P-121 R-? P-148 DS-46 P-147 P-149 DS-10 P-47
246 R-? 245 P-146 DS-50 P-145 P-46
R-127 R-226 P-144 DS-53 R-223 P-143 R-41 P-45
P-142 P-141 R-218 DS-9 P-44
P-140 DS-52 DS-45 P-43 DS-13
P-139 P-138 DS-49 P-42
P-137 P-136 DS-44 DS-16 P-41
P-135 P-134 DS-8 P-40
P-133 P-132 DS-12 P-39
P-131 DS-48 DS-51 P-130 DS-15 P-38
DS-43 P-129 P-128 DS-7 R-33 P-37
P-127 P-126 R-175 DS-5 P-36
P-125 DS-42 DS-54 DS-4 P-35
P-124 R-170 DS-47 P-34 DS-6
P-123 R-153 P-122 R-166 R-29 P-33
R-19 DS-11 P-32
P-94 P-93 P-92 P-91 P-31 P-30 P-29 P-28 P-27 P-26 P-25 P-24 P-23 P-22 P-21 P-20 P-19 P-18 P-17 P-16 P-15 P-14 P-13 P-12 P-11 P-10 P-9 P-8 P-7 P-4 P-1
P-2 P-3 P-6 P-5 R-8 R-13 DS-3 DS-1 R-27 R-28 R-? 244 P-95 P-96

S&ME
9751 Southern Pine Blvd
Charlotte, NC 28273
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Field Report

Date	Job No.
May 16, 2009	1356-06-825-09
Project/Location	
Plant Allen RAB Ash LF / Belmont NC	
Contractor	**Weather/Temp**
PFF / ABC	PC-Rain / 65-78°
Present at Site	
Cedric R Al C. Dalton L.	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☑ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geosynthetics

Observations/Remarks:

The geosynthetic contractor detailed geomembrane today. I monitored remaining pressure test, and V-box testing of repairs. Extrusion weld primary to primary made today thru sump (E side of LCS). Cedric laid out destructs 42-53.

ABC hauling flyash out of Pond #3, piling on top of the E-berm for Cell #2.

Site rained out at 1 pm.

On-Site Representative/Company

Jimmy Adkins
S&ME Personnel

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S&ME Form FRLF03

S&ME
9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
May 18, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor: EG/PFF/ABC/SEFA

Weather/Temp: PC-Cool-Windy 49-68°

Present at Site: Dennis F., Al C., Dalton L., Woody, Steven H., Cedric R.

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Geocomposite

Observations/Remarks:

Earnhardt dewatering sump area in Cell #1, and behind South berm in Cell #2, which is discharging into pond #3. Started sediment basin grading over in the borrow area.

PFF started deployment of the primary geocomposite layer w/ 300-2-8 rolls from SKAPS Industries. First roll put down on the NW corner, material deployed to just shy of the first LCS lateral to the S. Seams of the geocomposite are being tied and sewn to project specifications. Butt seams tied every foot and are being capped w/ a piece of 8 ounce geotextile, heat tacked in place. Approximately 40 rolls installed today.

ABC did not haul today, plowing and compacting ash placed on 5-16-09. I ran 3 fdt's on Cell #2 E berm, all exceeded 95% compaction.

SEFA hauling dry (silo) flyash into Cell #2 w half w/ 3 tri-axle dump trucks. I performed 4 fdt's on the Cell #2 floor. All test passed, refer to attached data sheet. I took in dry ash samples #1 & 2 for testing.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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9751 Southern Pine Blvd
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(704) 523-4726
(704) 525-3953

Field Report

Date	Job No.
05/18/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Plastic Fusion	Partly sunny, windy / mid 60s

Present at Site
Ken Daly & Kyle Baucom, S&ME, Inc;
Ted Manes – Duke Energy;
Mark LeGrand & Nick Linderman – Earnhardt Grading

Time	Mileage
9:30-2:30	40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Meeting

Observations/Remarks:

930 arrived on site and headed down to Duke Energy trailer for meeting. Discussed change order requests (CORs) among group and went over those CORs that had been approved and those that would be revised. Discussed Earnhardt going forth with construction of structural fill berms in Cell 2. Also discussed how borrow area was to be excavated. It was decided that protective cover and structural fill material would come from further excavation in the deepest area of excavation (located in the center of the borrow area). It was also decided that the northern portion of the Cell 2 excavation area would excavated down to the bottom of “MH” material. This excavated material would be stockpiled in the southern portion of Cell 2 excavation area along with any other material that appeared suitable for Cell 2 compacted soil liner construction. The material underlying this “MH” material will also be used for protective cover or structural fill. Cell 1 construction schedule was discussed to determine what other items were necessary before submitting Submittal 2 of Construction Cert. Report. Cell 2 construction schedule was also discussed. See meeting minutes summary for details. Earnhardt left at approximately 1150 and those attendees left discussed S&ME budget projections.

Following the meeting, performed a site walk with Ken Daly. Visited scale pad area. Still lacking 4” cleanout slabs, 6” slabs, and scale pad basin. Also walked Cell 1 area. From talking with Albert, all geomembrane in place other than last tie-in seam. Plastic Fusions was performing LCS geocomposite deployment with sewn seams during site walk. Met with Jimmy Addis and Cedric Ruhl in borrow area after walking Cell 1 area. Explained the borrow area excavation plan per meeting discussion. Walked Cell 2 expansion. This area still needs to be stripped of roots. Also, observed excavation in proposed sediment basin area.

1430 left site to travel back to office.

END OF REPORT

On-Site Representative/Company	Kyle Baucom S&ME Personnel

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Field Report

Date	Job No.
May 19, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor: EG/PFF/ABC/Crowder

Weather/Temp: Sunny-Cool/43-72°

Present at Site: Dennis F., Al C., Dalton L., Steven H.

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Geosynthetics

Time

Mileage

Observations/Remarks:

Earnhardt continued earthwork on the borrow area sediment basin. The riser and barrel sections set in place today. Riser concreted this afternoon. A D-6 dozer mucked out and cleaned up behind the South berm of Cell #2.

PFF welded the East half tie-in on floor panels, LDT-54 laid out. Tie-in detailed, and pressure test run ~3 zones. Complete detailing of panels 122-150, this morning. I pulled LDT's 54 & 55, both passed. This afternoon 300-2-3 geocomposite (primary layer) deployed on the West berm down to the SW corner. 25 rolls put down, tied and seam per project specifications.

ABC resumed ash excavation in Pond #3, material hauled to Cell #2 East floor. I ran 4 fdt's (#'s 204-207) all test passed. Informed Dalton of test results.

Crowder Const. poured 4 inch slabs under scales, no cylinders taken.

SEFA not onsite.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
May 20, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC.

Contractor: EG/PFF/ABC/Crowder

Weather/Temp: Sunny / 57-75°

Present at Site: Dennis F., Al C., Dalton L., Steven H.

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Geosynthetic

Observations/Remarks:

Observed Earnhardt excavating out sediment basin bottom over in the borrow area. Compacted soil liner material encountered, is being stockpiled for use in Cell #2. This afternoon Earnhardt started flooring in w/ soil behind the South berm at Cell #2.

PFF deploying geocomposite (300-2-8) primary layer from the North side of Cell #1, working back to the East. 39 rolls put down today.

ABC hauling ash out of pond #3 w/ 8 trucks, into East side of Cell #2. I ran 8 tests (shelby tube method) today on ABC side. All test exceeded 95% compaction. Informed Dalton of test results.

SEFA did not work.

Crowder Const. placing crusher run on scale house pad.

Jimmy Addis

On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date May 21, 2009	**Job No.** 13560-06-825-09
Project/Location Plant Allen RAB Ash LF / Belmont NC	
Contractor EG/PFF/ABC	**Weather/Temp** PC 65-79°
Present at Site Dennis F. Al C. Dalton L.	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain) Geosynthetics

Observations/Remarks:

Earnhardt spreading topsoil inside the sediment basin in the borrow area. Continued flooring in w/ soil behind the South berm of Cell #2. Started backfilling the anchor trench at the SW corner of Cell #1. Skipped over the LCS lateral lines, to allow air to escape if necessary. I ran two felt's on backfill, both passed. Informed Dennis of test results. Installed 6 inch skimmer to riser in borrow area sediment basin.

PFF deployed geocomposite (3DΔ-2-8) from North end of Cell #1, down to second LCS lateral to the South. 39 rolls put down today, and buttoned up. 212 ABC hauled ash out of pond #3 today w/ 8 trucks, (~~184~~ loads), into Cell #2 East side. Four felt's run today, all exceeded 95% compaction. Informed Dalton of test results.

SEFA not onsite.

On-Site Representative/Company

Jimmy Adkins
S&ME Personnel

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Field Report

Date	Job No.
May 22, 2009	1356-06-825-09
Project/Location	
Plant Allen RAB Ash LF / Belmont NC	
Contractor	**Weather/Temp**
PFF / ABC	Sunny / 61-81°
Present at Site	
AIC. Dalton L.	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Geosynthetics

Observations/Remarks:

PFF put down 42 rolls of primary layer geocomposite. Start on the SW corner and moved to the East. Composite being tied and seam per project specifications.

ABC hauling flyash out of pond #3, w/ 8 trucks (184 loads today) into NE end of Cell #2.

I ran two field's on anchor trench backfill. Both test passed.

Earnhardt and SEFA did not work today.

Jimmy Addison

On-Site Representative/Company | **S&ME Personnel**

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Field Report

Date	Job No.
May 23, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor	Weather/Temp
PFF	PC/66-80°

Present at Site: Al Corbitt

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geosynthetics

Observations/Remarks:

Observed installation of the primary layer of geocomposite (300-2-8). Contractor started deployment today on the East side of sump, and worked to w/in 10 feet of the SE corner. Approximately 36 rolls put down today. Seams tied and sewn per project specifications. Butt seams capped w/ 8 ounce geotextile and heat tacked. Contractor also welding 8 inch HDPE pipe today for LCS laterals.

On-Site Representative/Company

Jimmy Adkins
S&ME Personnel

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Field Report

Date	Job No.
May 25, 2009	13356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor	Weather/Temp
PFF	Cloudy

Present at Site: Al Corbitt

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geosynthetics

Observations/Remarks:

Monitored installation of the primary ~~[illegible]~~ layer of geocomposite (300-2-8). Contractor started deployment on the SE corner dropping in panels towards the North. Approximately 25 rolls put down today. Site rained out at 2:30. Earnhardt-ABC and SEFA were off today.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
May 26, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor: EG/PFF/ABC/SEFA

Weather/Temp: Cloudy/67-77°

Present at Site: Al Corbitt

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geosynthetics

Observations/Remarks:

Earnhardt did not work, to wet.

PFF completed deployment of the primary geocomposite drainage layer this morning. approximately 15 rolls put down. Contractor has 4 full rolls left over. Geocomposite tied and seams per project specifications. To wet to cap butt seams, on geocomposite deployed on Sat. & Monday, that did not get covered on those days. Clean up of cell started. Boot/skirt welds made today on both 18 inch and 10 inch SDR-17 LDS riser and cleanout pipes for 1A & 1B subcells. 1A boot = 8'x6' 1B boot = 8'x7'. Made copies of PFF's geomembrane cross reference #'s for Cedric.

ABC did not work.

SEFA hauled dry ash into West side of Cell 2 w/ 3 trucks.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
May 27, 2009	13556-06-825-09
Project/Location	
Plant Allen RAB Ash LF / Belmont NC	
Contractor	**Weather/Temp**
EG/PFF/ABC/SEFA	Cloudy / 70-81°
Present at Site	
Dennis Foltz Al Corbitt	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geosynthetics

Observations/Remarks:

Rained again last evening onsite, the fourth day in a row, 5 inches recorded these past four days. Earnhardt dewatering in Cells 1 & 2. Cell 2 is saturated. Dennis is concerned w/ Cell 1 when completed, that it will overflow at the sump. I informed Ken Daly of contractor's concern. Went ahead and backfilled the South anchor trench to try and control the water infiltration, skipped over the pipe risers until PFF can complete. Regraded the temporary flume, added more liner. Do not know how much of a washout exist under temp. liner at the anchor trench, until it can be removed.

PFF continued clean up in Cell 1 and around site. I observed non-destructive testing (spark & V-box) of both boots, no leaks, all passed. I had PFF add more zip ties to some of the composite butt seams. Still to wet to cap butt seams w/ Bounce geotextile.

ABC and SEFA did not haul any flyash today.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
May 28, 2009	13556-06-825-09

Project/Location
Plant Allen RAB Ash LF / Belmont NC

Contractor	Weather/Temp
EG/PFF/ABC/SEFA	Cloudy-Rain/72°

Present at Site
Dennis Foltz
Al Corbitt
Dalton Lambert

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Four tenths of an inch of rainfall recorded onsite this morning. No construction activity today in Cells 1 & 2. Crowder Const. doing electrical work at future scale house. I wrote field reports for the week thus far.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
May 29, 2009	13556-06-825-09
Project/Location	
Plant Allen RAB Ash LF/Belmont NC	
Contractor	**Weather/Temp**
EG/PFF/ABC	Sunny/66°-84°
Present at Site	
Dennis Foltz Jimmy Crutch Dalton Lambert	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Protective Cover

Observations/Remarks:

Earnhardt dewatering in Cells 1 and 2. PFF onsite at 7am, to wet for them to work, geocomposite wet, from 7/10's of an inch of rainfall overnight. ABC & SEFA did not work either, to wet. I went to the office at 8:30 this morning, talked w/ Ken & Cedric about site progress, and schedule. Got a call from Dennis, he wants to start protective cover this afternoon. I returned to jobsite around 11:30. I observed protective cover placement on the North Intercell berm starting on the NW corner. Contractor removed sand bags and laid 1/2 inch thick 4x8 treated plywood 15 feet off toe. this line was shot yesterday by Earnhardt's field engineer. Contractor utilizing D6RXL dozer, 2 Cat 740 and 1-730 articulate dump trucks. Cover soils coming out of middle borrow area. Lack approximately 200 feet from having N berm covered to the NE corner. The geocomposite laid down good today.

Jimmy Addis

On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date	Job No.
May 30, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor: EG/PFF/ABC

Weather/Temp: Sunny / 62-83°

Present at Site: Dennis Foltz, Jimmy Crutch, Dalton Lambert

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Geosynthetics / Protective Cover

Observations/Remarks:

Observed Earnhardt as they entered Cell 1 on the SW corner w/ protective cover. Cover spread a little thicker than 2 feet, down to w/in one geocomposite panel of the sump area, the S berm was covered, and cover placed about 40 foot off toe. Three off-road trucks hauling out of the borrow area, trackhoe moved to upper sediment basin area today for cover excavation. Devatering of sump area in Cell 1 completed this am.

PFF completed geosynthetics work this morning. Capped remaining butt seams of the geocomposite (primary layer) and cleaned up scrap around sump area. They are 100% complete.

ABC spreading flyash piles on Cell 2 floor. No compactive effort today.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
June 1, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny/67-89°

Present at Site: Dennis Foltz, Dalton Lambert, Woody, Steven Hartley

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Observed Earnhardt Grading placing protective cover soil on the SW area of Cell 1, w/ 2-740 & 1-730 Cat articulate dump trucks. A Cat D6RXL dozer is being utilized to push cover soils over the primary layer of geocomposite. Geocomposite laying down good today, cover soils being pushed along and across geocomposite, operator using care when pushing out. Contractor set 18 and 24 inch LCS risor pipes in sump area today. A Cat D6 dozer fine graded the N outside slope of Cell 1 today, it is GPS equipped.

ABC resumed hauling ash out of Pond 3 today, 1st day since 5-22-09. Ash piled on N end of Cell 2. ABC compacted top of the E berm for Cell 2. I ran four fdt's on the E berm today, all exceeded 95% compaction. Informed Dalton of test results.

SEFA resumed hauling dry ash, 1st day since 5-26-09, into Cell 2. Piled on S end, dozer & roller both down, no spreading.

Crowder Const. excavated control panel area.

Jimmy A Lohr

On-Site Representative/Company | **S&ME Personnel**

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S&ME Form FR/F03

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Field Report

Date	Job No.
June 2, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC.

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny/66-88°

Present at Site: Dennis Foltz, Dalton Lambert, Woody, Steven Hartley

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Observed Earnhardt placing protective cover on SW area of cell #1. Soil cover was squared up w/ cleanout #2 lateral line and LCS header line corridor down to the sump. During removal of sand bags in sump, discovered that water has gotten between the secondary & primary geomembrane layers possibly thru the anchor trench, due to heavy rainfalls last week when cell overflowed. I informed Ken & Cedric of this, and will monitor, and have contractor pump out if need be. Got go ahead from Ken to let contractor place drainage aggregate (#57 washstone) in sump and up 10 inch header line. Contractor completed along w/ LCS lateral line #2, just on W side. Eight ounce non-woven geotextile filter w/ 2' runout on each side placed over the drainage aggregate and heat tacked to primary geocomposite.

ABC hauling out of pond #3 w/ 3 trucks, piling in middle of cell #2. Bladed and compacted grid line 4 floor. I ran four fdt's which all passed.

SEFA hauling dry ash w/ 3 trucks, start new lift on S end, dozer running no roller yet. Crowder Const. poured concrete pad for control panel, no cylds. made. Fusing 6" HDPE pipe for leachate force main.

On-Site Representative/Company

Jimmy A Johns
S&ME Personnel

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(704) 525-3953 fax

Field Report

Date	Job No.
June 3, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC.

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny / 71-90°

Present at Site: Dennis Foltz, Dalton Lambert, Woody, Steven Hartley

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

I observed Earnhardt Grading as they ramped up the SE corner w/ protective cover and entered into Cell #1. Prior to cover placement, 4x8x0.5 plywood (treated) was laid on future cell tie-in @ the 14 foot mark. Contractor pushing westward towards the sump, operator using care in pushing cover soil. I stayed w/ this operation pretty much all day, did inform Dennis that he needs to commit a laborer to observe leading edge of protective cover and walk out any wrinkles in the geocomposite, when I am not available. Fine grading protective cover on the SW area of Cell #1 w/ GPS dozer.

ABC hauling ash out of pond #3 w/ 8 trucks. Piling along grid line 3. Started spreading this afternoon.

SEFA hauling dry ash w/ 3 trucks, piling along middle of Cell #2. Behind in spreading ash, D5 dozer leaking fluids. No compactive effort, no roller.

Crowder Const. laying CMU wall around control pad, fusing 6 inch HDPE pipe.

Jimmy Atkins

On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date	Job No.
June 4, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Contractor	Weather/Temp
EG/ABC/SEFA	PC / 69-85°

Present at Site: Dennis Foltz, Dalton Lambert, Woody, Steven Hartley

Time	Mileage

Observations/Remarks:

Observed Earnhardt Grading placing protective cover on the SE area of Cell #1. Cover being pushed towards the sump, from top of berm to about 50 feet off of toe. I advised contractor to keep a laborer along leading edge of protective cover, so geotextile (composite) wrinkles could be walked out if necessary. Contractor reached the sump area by noon, turned and started pushing cover northward.

ABC hauling ash out of pond #3 into Cell #2 w/ 8 trucks, piling near centerline of cell. Contractor spread and compacted flyash along grid line 3 today. I performed 4 fdt's (shelby tube method), all test exceed 95% compaction. Informed Dalton of test results.

SEFA hauling dry ash, piling on their N half of Cell #2. Their D5 dozer is down, and still lack smooth drum roller. They quit hauling at noon.

Crowder Const. working on hand hole. Continue fusing solid 6 inch HDPE SDR-17 pipe, for leachate force main

On-Site Representative/Company

Jimmy Atkins
S&ME Personnel

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Field Report

Date	Job No.
06/04/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Plastic Fusion	Cloudy / 70s

Present at Site
Kyle Baucom, S&ME, Inc;
Doug Baucom, Perigon Engineering;
John Miele, Duke Energy; John Hiott, Crowder Const.

Time	Mileage
1:45-4:30	40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Meeting

Observations/Remarks:

1345 arrived on site and headed to Cell 1 area to meet with Jimmy. Jimmy was observing protective cover placement. Earnhardt placing protective cover in one thick lift. Crowder was also performing construction in the leachate manifold area. Retaining wall was in place and constructed of blocks. Vault was also in place.

Met with Doug, John, and John in Crowder's trailer to discuss the installation of lighting in the scale pad area as well as along the silo road. John Hiott explained where wiring ran to three lights in scale pad area. John Miele also expressed that Duke wanted to light an existing light from the scale pad source. After discussions, parties agreed that four lights would be installed along the silo road. Lights primarily to be installed at curves and intersections with all lights west of silo road. Parties also agreed to install an additional light on the west side and in the curve of the access road. Doug agreed to mark up drawings with approximate locations and final locations to be field fit. Mark up drawings to be sent to Ted Manes for a review.

1630 left site to travel back to office.

END OF REPORT

On-Site Representative/Company	Kyle Baucom S&ME Personnel

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Field Report

Date	Job No.
June 5, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Contractor	Weather/Temp
EG/ABC/SEFA	Rain/68°

Present at Site: Dennis Foltz, Dalton Lambert

Time	Mileage

Observations/Remarks:

2.1 inches of rainfall recorded @ 7am this morning. No construction activity today on Cell #1. SEFA is going to try and haul dry ash, after fixing haul road. Completed field reports.

On-Site Representative/Company

Jimmy Atkins
S&ME Personnel

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S&ME Form FRIF03

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Field Report

Date 06/08/09	**Job No.** 1356-06-825 Ph. 9
Project/Location Allen Steam Station	
Contractor Earnhardt / Plastic Fusion	**Weather/Temp** Sunny / 80s
Present at Site **Kyle Baucom, S&ME, Inc; Earnhardt; ABC**	
Time 3:45-4:30	**Mileage** 40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Site Visit

Observations/Remarks:

1545 arrived on site and headed to haul road south of Cell 1. Crowder was not working in the leachate manifold area or setting up for the force main pressure test. Earnhardt was hauling into Cell 1B with one thick lift. Cell 1A was compacted up to the second lateral, and Cell 1B was close to being in-place with protective cover up to this same lateral. ABC was dumping in the south end of Cell 2. Just on the other side of the southern berm. SEFA was pushing ash with the dozer.

The sediment basin was up due to rain from this past weekend. Third baffle was completely submerged. Some water was still running through the risers. There was also a good amount of standing water in the southwest corner of Cell 2.

1630 left site to travel back to office.

END OF REPORT

	Kyle Baucom
On-Site Representative/Company	**S&ME Personnel**

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Field Report

Date	Job No.
June 9, 2009	1356-06-825-09

Project/Location
Plant Allen RAB Ash LF/Belmont NC

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny / 67-90°

Present at Site
Dennis Foltz
Dalton Lambert
Woody
Steven Hartley

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective Cover

Observations/Remarks:

Earnhardt completed protective cover on the SE area of Cell 1B, up to LCS line #2. I observed placement of #57 washstone on LCS line 2 E side. Eight oz/sy non-woven geotextile filter laid over #57, w/ 2 feet of runout on each side, this material was then heat bonded to the primary geocomposite layer, on both sides. A D6 dozer w/ GPS in process of fine grading protective cover on SE area of Cell 1B, leaving a little high, smooth drum roller should lay cover down to w/in tolerance +/-.10th. I obtained protective cover samples #1 (1A-SW) & #2 (1B-SE), took into lab for conformance testing.

ABC hauling ash out of pond #3 w/ 8 tandems, ash being piled on S end of Cell 2. I ran 4 fdt's on ash that was worked yesterday, #'s 238-241, #238 failed - to dry, rest of fdt's passed. Informed Dalton of non-compliance test results, will rework area. SEFA hauling dry ash w/ 3 tri-axles into Cell 2 N side. Got their D6 back and rented a new roller. I ran 4 fdt's #'s 242-245, all test exceeded 95% compaction. Informed

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
6-9-09	1356-06-825-09
Project/Location	
Contractor	**Weather/Temp**
Present at Site	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain) Hydrostatic Test

Observations/Remarks:

Woody of test results.
Observed Crowder Const. as they performed hydrostatic test on the 6 inch leachate forcemain, approximately 977 feet of 6"-SDR17 HDPE pipe test today. This includes all the forcemain for Cell 1 and 40 feet past Cell 2 stub out. Test results: 1:30pm/50PSI - 5:30/50PSI, no loss in pressure.

On-Site Representative/Company

Jimmy Addio
S&ME Personnel

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Field Report

Date	Job No.
June 10, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor: EG/ABC/SEFA/Crowder

Weather/Temp: Sunny/68-91°

Present at Site: Dennis Foltz, Dalton Lambert, Woody, Steven Hartley

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective Cover

Observations/Remarks:

Earnhardt Grading constructed a temporary truck crossing across completed LCS line #2 adjacent to berm on the West side of Cell #1, so entrance could be gained into the middle section for protective cover placement. A sacrificial piece (40'x22') of 40mil geomembrane was laid across the LCS line, and 3 feet of soil placed over. Protective cover commenced on the West middle section of Cell #1A. Water pumped out of secondary riser pipe this afternoon, into the sediment basin.

ABC hauling ash out of pond #3 w/ 8 tandems, piling on the South end of Cell #2. No spreading today, this crew is working on structural fill area slope drains.

SEFA hauling out of the silos w/ 3 tri-axles, into Cell #2 West side, working S. to N. I ran four fdt's #'s 246-249 on grid line 2, all test exceeded 95% compaction. Informed Woody of test results.

Crowder Const. started excavation & placement of the 6 inch leachate forcemain, locating wire being placed 6 inches above pipe. One fdt run passed at 96%.

Jimmy Adkins

On-Site Representative/Company | **S&ME Personnel**

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Field Report

Date	Job No.
June 11, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor: EG/ABC/SEFA/Crowder

Weather/Temp: PC/ 68-90°

Present at Site: Dennis Foltz, Dalton Lambert, Woody, Steven Hartley

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective Cover

Time:

Mileage:

Observations/Remarks:

Observed Earnhardt placing protective cover on the West middle section of Cell 1A. Contractor has 3 Cat 740 off-road trucks hauling cover soil out of borrow area 2 middle. This afternoon contractor placed #57 washstone on the 10 inch LCS corridor, between lateral lines 1 & 2, up to w/in 40 feet of the next intersection. Eight oz/sy non-woven geotextile was laid over the #57 stone and heat tacked to the primary geocomposite.

ABC hauling ash out of pond #3, into the middle East half of Cell 2 w/ 8 trucks. No spreading or compactive effort today, crew still working on slope drain pipes.

SEFA hauling out of the silos w/3 trucks, dumping along middle of Cell 2. They did not get anything ready to test today.

Crowder Const. backfilled forcemain trench they have opened. One foot (#251) performed, and passed. I informed Steven of test results.

Jimmy Addis

On-Site Representative/Company | **S&ME Personnel**

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Field Report

Date	Job No.
June 12, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	PC/70-87°

Present at Site: Dennis F., Dalton L., Woody, Steve H.

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective Cover

Observations/Remarks:

I observed Earnhardt Grading placing protective cover in the West middle section of Cell 1A, this area was completed this afternoon. Contractor placed #57 washstone over 10 inch LCS header up to lateral line #1 intersection, turned towards the West and stoned 8 inch lateral out to toe of slope at cleanout #1. Eight oz/sy non-woven geotextile filter placed over stone w/a 2 feet run out on each side, this was heat tacked to the primary geocomposite layer. Late today contractor made a second truck crossing over LCS line #2 on the East side of Cell 1B, to gain access into middle section. Same as truck crossing #1, 40 mil geomembrane laid over completed LCS lateral adjacent to berm and 3 feet of cover soil placed over.

Observed ABC hauling ash out of pond #3 into Cell 2. Quit hauling at 2pm, last pond ~ big cracked developed.

SEFA hauling dry ash w/3 trucks into Cell 2, not ready for test yet.

Observed Crowder excavating/placing and backfilling the 6 inch leachate forcemain. One fdt performed ~ passed at 98.5%.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
June 15, 2009	13560-06-825-09
Project/Location	
Plant Allen RAB Ash LF/Belmont NC	
Contractor	**Weather/Temp**
EG/ABC/SEFA/Crowder	PC/65-85°
Present at Site	
Dennis Foltz Dalton Lambert Woody Steve Hartley	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain) Protective cover

Observations/Remarks:

Observed Earnhardt placing protective cover in Cell 1B middle section. Three Cat 740 off-road trucks hauling out of borrow area 2. Fine grading in progress w/a D6 dozer w/ GPS in middle section of Cell 1A.

ABC excavating ash out of pond 3, eight tandem-axle dump trucks hauling into the East half of Cell 2 piling on South end of grid line 4. I performed four fdt's (one was a retest of #238) #'s 253-256), all passed except #255. Informed Dalton of non-compliance test results. ABC to rework failing area.

SEFA hauling dry ash into West half of Cell 2, start new lift on South end across grid lines 1 & 2. Trying to get them to work one grid line at a time like ABC does, still not sinking into their memory yet, plus Earnhardt is hauling thru grid line 1 at this time also.

Crowder Const. excavating for 6 inch forcemain, placing & backfilling. One fdt run (#257) passed @ 97.3%. Informed Steve of test results.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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S&ME Form FRLF03

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Field Report

Date	Job No.
June 16, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Cloudy / 70° - 82°

Present at Site
Dennis F. - EG
Dalton L. - ABC
Daniel W. - SEFA
Steven H. - Crowder

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain): Protective cover

Observations/Remarks:

Observed Earnhardt as they placed protective cover in the East side middle section of Cell 1B. Operator using care in spreading cover soils across lining system, which is laying down good.

ABC excavating flyash out of pond 3, piling on grid line 4 in Cell 2, South to North. I ran two fdt's (#'s 258-259) on the East berm of Cell 2, both exceeded 95% compaction. Informed Dalton of test results.

SEFA hauling dry ash into the West half of Cell 2. Two fdt's run today (#'s 261-262), both passed. Informed Daniel of test results.

Crowder Const. excavating / laying and backfilling 6 inch forcemain. One fdt run on backfill, passed. Informed Steven of test results. A hydrostatic test performed today on the remaining 6 inch forcemain for Phase I ~ 12:15/50 psi - 4:15/50 psi ~ 842 LF of pipe test today ~ passed. Ken Daly has concerns w/ the bottomless vault, his intent was to have vault buried 3 feet below proposed grade. I informed Steve Hartley of this.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
June 17, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC.

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Cloudy-Rain/ 84°

Present at Site: Dennis F., Kyle B., Dalton L., Daniel W., Steve H.

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

A 1/2 inch of rainfall was recorded onsite last evening. Earnhardt moved out of Cell 1, inside tacky from rain overnight. Removed sandbags off the NE corner "outer berm", and laid down treated plywood down the East berm. Contractor backed off-load trucks up the NE corner ash ramp, and started protective cover on the backside of East berm. Trucks ran until around 10am, stopped due to rainfall intensifying.

ABC excavating ash out of pond 3, piling in Cell 2 grid line 4 n N end, moved trucks to S end of Cell 2 grid line 3 and started piling. They also quit around 10am.

SEFA hauling dry ash out of silo, into Cell 2 w half stacking piles about 300 feet wide.

Crowder Const. working around scale pad area. The scale pad basin is know laid out (staked).

Took Kyle around site, to look at progress. Also met w/ Steve from Crowder about waterstop. Steve also has questions about the baffles in basin, what is the intent on tightening cable?.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
06/17/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Crowder	Rainy / 80s

Present at Site
Kyle Baucom, S&ME, Inc; Ted Manes, Duke Energy; Mark LeGrand & Nick Linderman, Earnhardt Grading; Steve Hartley, Crowder

Time	Mileage
9:00-12:30	40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Meeting

Observations/Remarks:

0900 arrived on site and headed to Duke trailer for meeting with Ted Manes of Duke Energy and Earnhardt. Discussed schedule for Cell 2 construction with an end goal of being done by the end of the year. Also discussed revised geosynthetic prices for Cell 2 liner. Ted Manes wants to go ahead and lock in prices and get material shipped mid-August to first of September. Left meeting at approximately 0945 to take random drug test for MICCS program. Returned at approximately 1000 as meeting was ending with Ken Daly (called in for meeting) discussing Cell 2 stormwater management and cleaning up the sediment basin.

After Earnhardt attendees left, I discussed Cells 3 and 4 structural fill notification with Ted. Ted wants to stay within existing disturbance limits and build up subgrade at 3H:1V from west, north, and east sides. He also mentioned to finish this grading plan, but not go forward with structural fill notification for Cells 3 and 4 until we see how Cell 2 subgrade is progressing.

Following discussion with Ted, met Jimmy at trailer and drove the site. SEFA was hauling ash to Cell 2. Earnhardt was not on-site. Crowder was at scale pad area. Steve, Jimmy, and I discussed waterstop seals in scale pad basin. Explained to Steve that waterstop seals must be installed per plans and suggested alternating slabs to reduce number of pours to 3 pours.

1230 left site to travel back to office.

END OF REPORT

On-Site Representative/Company	Kyle Baucom S&ME Personnel

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Field Report

Date	Job No.
June 18, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC

Contractor	Weather/Temp
EG/ABC/SEFA Crowder	Sunny / 70-93°

Present at Site: Dennis F., Dalton L., Daniel W., Steve H.

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective cover

Observations/Remarks:

3/10's of rainfall recorded onsite from yesterday.
Observed Earnhardt placing protective cover on the East side berm down to the CQA limits.
ABC hauling ash out of pond 3 w/ 8 tandem-axle dump trucks.
Piling on Cell 2 South end line 3. I ran retest of fdt #255, which passed. Informed Dalton of test results.
SEFA hauling dry ash into Cell 2 West half. I was able to run two fdt's on their ash placement today (#'s 263-264) both passed. Informed Daniel of test results, refer to attached data sheet.
Crowder Const. started excavation of the scale pad basin today.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
June 19, 2009	13560-06-825-09

Project/Location
Plant Allen RAB Ash LF/Belmont NC

Contractor	Weather/Temp
EG/ABC/Crowder	Sunny Hot/72-95°

Present at Site
Dennis Foltz
Dalton Lambert
Steve Hartley
Jim Mac

Time

Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Observed grading contractor as they backfilled around the LDS/LCS and cleanout pipes on the South slope outside Cell 1. Contractor used compacted soil liner material to backfill with. Two samples of protective soil cover obtained out of Cell 1, and transported to lab for conformance testing (#'s 4 & 5).

ABC excavating ash out of pond 3, hauled to Cell 2 and piled on grid line 3. Spreading piles of ash on grid line 4. Not ready for testing yet.

Crowder Const. excavating scale pad basin.

SEFA not onsite today.

Transition w/ Jim this morning.

Surveyor onsite for Cell 2 topo.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
06/23/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Earnhardt / Crowder	Sunny / 90

Present at Site
Kyle Baucom, S&ME, Inc;
Sandy Brown & Steve Hartley, Crowder

Time	Mileage
1:30-3:30	40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
Meeting

Observations/Remarks:

1330 arrived on site and headed to Crowder trailer to meet with Sandy Brown. Looked at plans and discussed vault details with Sandy. Drove out to control panel area with Sandy and met with Steve Hartley also. Decided that top of vault should be even with the center of the 2nd course of CMU blocks. Sandy said to confirm elevations first, and the vault will be lowered and installed as specified. Sandy also suggested elevation points on piping, and they will be installed as specified. Steve asked if pipe would have to be pressure tested again when 6” pipe section cut out, lowered, and reconnected. They also asked about the cover needed on the discharge pipes that run up the 3H:1V slope to the risers. Steve said that he plans on pouring the scale pad basin in three pours. The first pour will be on Thursday, and it will include the 4H:1V entrance, 2% slope floor, and 2H:1V slope at south end. Edge waterstop seals will be formed with a 2X4 on top and bottom. Internal waterstop seals will welded on ends and supported in the middle by rebar and ties. They also asked about the location of junction boxes and how exactly GunnCo plans to connect pumps to junction boxes. I confirmed that all questions will be looked into and answers will be documented. Finished meeting with Sandy and Steve at 1500.

Following meeting, drove the site. Earnhardt was placing protective cover in the northwest section just above the northernmost lateral. They were also finishing placing protective cover on bench in southeastern corner. ABC and SEFA were both hauling. ABC was hauling in the southeast corner of Cell 2 and SEFA was hauling in the northern part of Cell 2.

1530 left site to travel back to office.

END OF REPORT

On-Site Representative/Company	Kyle Baucom S&ME Personnel

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Field Report

Date	Job No.
6-24-09	1356-06-825-09

Project/Location: Albin Ash Landfill.

Contractor: Earnhardt ABC, Crowder SEFA

Weather/Temp: Clear - 90↑

Present at Site: Dennis Earnhardt, Steve Crowder, Dalton ABC, Woody SEFA, Jim State

Time: 9. ✓

Mileage: 40 ✓

To: _____

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☒ In-Place Density
- ☒ Other (Explain): Site work.

Observations/Remarks:

1. Earnhardt still placing cover fill. Today on N.W. Section of Top of Cell. also placing Stone on Driveway + laterals. Digging out toe trench. on S and down to fabric to place pipe fabric + Stone (Photos Taken)
2. ABC placing fill then have of Cell 2. Density tests conducted. A-4 B-4 C-4 All pass density.
3. SEFA placing dry ash. there half Cell 2. Density conducted. A-2 + B2.
4. Crowder still working on basin for wash out.

Pick up Ash Sample. SEFA.

JUN 25 2009

On-Site Representative/Company | **S&ME Personnel**

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Field Report

Date	Job No.
June 29, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Protective cover

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny Hot/75-91°

Present at Site: Dennis Foltz, Dalton Lambert, Daniel Woody, Steve Hartley

Time	Mileage

Observations/Remarks:

Observed Earnhardt placing protective cover on the NW section of Cell 1 "1A", finished this area by noon. Moved to the NE section Cell 1B and start protective cover. Continued building intracell berm, about half complete now. Fine grading in progress on protective cover in middle section of Cell 1B.

ABC piling flyash out of pond 3, in Cell 2 middle of grid line 4, pretty wet ash hauled today, will let dry some before spreading.

SEFA hauling dry ash to low point of Cell 2, this area had been ponding water, but has dried out now. Not ready for testing yet.

Crowder Const. stripped forms out of scale pad basin. Resetting forms/waterstop for next concrete pour.

Jimmy Addis

On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date	Job No.
June 30, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC.

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny / 73-90°

Present at Site: Dennis Foltz, Dalton Lambert, Daniel Woody, Steve Hartley

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective Cover

Observations/Remarks:

I observed the grading contractor placing protective cover in Cell 1 ~ NE section on 1B side. Operator doing a good job pushing cover to leading edge and allowing to free fall to avoid wrinkling composite lining system. Fine grading of protective cover in progress w/a D6-GPS equipped dozer in Cell 1 ~ NW section on 1A side. D.L. Lawrence surveyors onsite taking shots on completed protective cover, some low areas discovered, will be addressed by Earnhardt.

Monitored ABC hauling flyash out of pond 3, into Cell 2 ~ 2B side, piling loads on S end of grid line 3. Contractor spread flyash piles on grid line 4 and started compactive effort. Three compaction test run today on ABC side of structural fill, all test passed project specifications.

Observed SEFA hauling dry ash into Cell 2 ~ 2A side on low end, not ready for testing yet.

Crowder Const. removed and lowered Cell 1 vault approximately 2 feet, per S&ME design intent. Resumed excavation & backfill of the 6 inch forcemain.

Jimmy Addis

On-Site Representative/Company

S&ME Personnel

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Field Report

Date	Job No.
June 30, 2009	1356-06-825-09

Project/Location

Contractor | **Weather/Temp**

Present at Site

Time | **Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

I performed two compaction test today on Phase I forcemain backfill. Both test passed project specifications. Informed Steve of test results. Monitored Crowder's hydrostatic test on the Phase II leachate forcemain (6" HDPE-SDR17 pipe) approximately 430 feet of pipe test today. Test passed ~ 12:15 | 50psi
4:15 | 50psi

Jimmy Addie
On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date	Job No.
July 1, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Sunny/68-90°

Present at Site
Dennis Foltz
Dalton Lambert
Daniel Woody
Steve Hartley

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Protective Cover

Time	Mileage

Observations/Remarks:

Observed Earnhardt placing operational cover in Cell 1 ~ 1B side ~ NE area. The closer contractor pushed cover soil towards the corner (75 feet), the composite lining system started rising. I inspected and informed Dennis that we got air underneath, and there is no escape area for air to exit, since the outside intercell berms are covered w/ protective cover already. I informed Dennis to stop protective cover placement for the day, until I could get in contact w/ Ken Daly, to approve cutting a hole thru the composite lining system, to release the air. Fine grading of protective cover in progress on NW section of Cell 1 ~ 1A. The intracell berm was completed today, lack only fine grading on N end. ABC hauling ash out of pond 3 into Cell 2 ~ 2B side. Piling on grid line 3. I ran one density test to finish out grid line 4, passed. SEFA hauling dry ash into Cell 2 ~ 2A side. I ran two density test on S end structural fill placement, both test passed. Crowder Const. continued excavation & backfill of the leachate forcemain. Two density test performed today, both passed. Start excavation for discharge pipes from risers, @ Cell 1.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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Field Report

Date	Job No.
July 2, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF/Belmont NC.

Contractor: EG/ABC/SEFA/Crowder

Weather/Temp: Sunny/69-92°

Present at Site: Dennis F., Dalton L., Daniel W., Steve H.

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Protective Cover

Observations/Remarks:

I recommended to Dennis that a hole needs to be cut in the composite lining system near the NE corner of Cell 1~1B side, to release air that is trapped. Contractor's field engineer located hole that was cut, area was covered w/a scrap piece of liner and sand bagged to protect against the weather. Geosynthetic contractor to be back onsite Monday, will have them patch hole asap. Earnhardt completed protective cover today, only lack repair area (15'x15'). Surveyors onsite finished protective cover grid shots. Fine grading completed in Cell 1, only lack repair area. Cleanout pads hand dug, and geotextile fabric covering the LCS lines cleared off today. ABC hauling ash out of pond 3, into Cell 2~2B side, piling on grid line 3. SEFA hauling dry ash into Cell 2~2A side, start new lift on S end of grid lines 1&2@C. Crowder Const. completed leachate forcemain, Phases I & II, also installing discharge pipes to risers. Took photos for Kyle.

On-Site Representative/Company

Jimmy Adkins
S&ME Personnel

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Field Report

Date	Job No.
July 6, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC

Contractor	Weather/Temp
EG/ABC/SEFA/Crowder	Cloudy / 68-85°

Present at Site
Dennis Foltz - EG
Dalton Lambert - ABC
Daniel Woody - SEFA
Steve Hartley - Crowder

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Monitored Earnhardt as they began to place structural fill (S1) on the South perimeter berm for Cell 2. Two field density test were performed, both test exceed 95% compaction. Informed Dennis of test results. I recommended to EG's dozer operator, to cut/bench into existing flyash berm built by others, on each lift.

ABC hauling ash out of pond 3, into Cell 2 ~ 2B side, w/ 8 trucks. Loads being piled on grid line 4 ~ South end. Contractor started spreading piles on grid line 3, and compaction effort today.

SEFA hauling dry ash w/ 3 trucks into Cell 2 ~ 2A side. Finished out lift from last week. I ran two fdt's for SEFA today, both passed. Informed Daniel of test results.

Crowder Const. made second concrete pour on the scale pad basin today (West slope) ~ 11 cu/yds. of 4000psi. I called Kyle to inform & schedule technician to monitor, since I don't have equipment. No tech available.

Jimmy Addis

On-Site Representative/Company — **S&ME Personnel**

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Field Report

Date	Job No.
July 7, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC

Contractor	Weather/Temp
EG/PFF/ABC/Crowder	PC / 70-89°

Present at Site: Dennis F., Albert C., Dalton L., Steve H.

Time:

Mileage:

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☑ Other (Explain): Geomembrane

Observations/Remarks:

Observed Earnhardt as they prepared Cell 1 for sacrificial geomembrane installation. Trench cut w/ motorgrader along LCS lines (both sides), and for the rain cover also, smooth drum rolling in Cell 1. The main header line and all laterals were covered today, not all backfilled yet. I monitored repair of liner hole that was cut on 7/2/09, to release air. PFF patched both liners. CQA data: Trial seam - Extrusion gun #40 - 8am/72°/260°-250°/IB: Shear ~ 138/134/138 ~ Peel ~ 134/133/127 Secondary patch ~ 1.5x1.5 ~ Vacuum Test - passed - IB. Primary patch ~ 5'x3' ~ VT - passed - IB. This afternoon Earnhardt resumed structural fill placement on Cell 2 - South berm. Two field density test run, both passed. PFF pulled geocomposite back over repair area, I had them add a piece of 8 ounce geotextile overtop & heat tack inplace, prior to EG covering w/ protective cover. ABC hauling ash out of pond 3, into Cell 2B, line 4 being piled on. Start pushing overbuild off NE ramp and floored in Cell 2B North berm. I ran four foot's on ABC's side today, all

Jimmy Addis

On-Site Representative/Company — **S&ME Personnel**

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S&ME Form FRLF03

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Field Report

Date	Job No.
7-7-2009	1356-06-825-09

Project/Location

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☐ Other (Explain)

Contractor	Weather/Temp

Present at Site
Chaz w/ GunnCo

Time	Mileage

Observations/Remarks:

test passed. Informed Dalton of test results.
SEFA not onsite today.
Crowder Const. poured the East side slops in the scale pad basin today. Steve did not notify me of pour. GunnCo onsite, started Cell 1 pump install.

On-Site Representative/Company

Jimmy Adkins
S&ME Personnel

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Field Report

Date	Job No.
July 8, 2009	1356-06-825-09

Project/Location
Plant Allen RAB Ash LF/Belmont NC.

Contractor	Weather/Temp
EG/PFF/ABC/SEFA/Crowder	PC/69-90°

Present at Site
Dennis F.
Al C.
Dalton L.
Daniel W.
Steve H.

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

I monitored structural fill (S1) placement by Earnhardt on the Cell 2 South perimeter berm. During the day I ran four field density test, all test met project specifications. Contractor having to wet soils as it is coming out of borrow area 2 on the dry side. Fill area sealed.

PFF filled sand bags all day.

ABC excavating flyash out of pond 3, hauling into Cell 2B, piling on grid line 4. Not ready for test today.

SEFA hauling into Cell 2A side, spreading on grid line 1. I performed four fdt's today on Cell 2A subgrade fill, #301 failed. I informed contractor of non-compliance test results, asked them to rework failing area. Area was wet and compacted again. Retest #304 run and passed.

Crowder Const. setting forms for 6 inch slab pour between scale pad and basin. Also worked on tying in discharge pipes @ the side slope risers for Cell 1.

Gunnco continued pump install in Cell 1 riser pipes.

Took in 2 soil samples of S1 material.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

Disclaimer: The presence of S&ME at the project site shall not be construed as an acceptance or approval of activities at the site. S&ME is at the project site to perform specific services and has certain responsibilities which are limited to those specifically authorized in our agreement with our client. In no event shall S&ME be responsible for the safety or the means and methods of other parties at the project site. **The information presented in this field report has not been reviewed by an engineer and is to be considered preliminary.**

S&ME Form FRLF03

S&ME
9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
July 9, 2009	13560-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor: EG/PFF/ABC/SEFA/Crowder

Weather/Temp: Cloudy Lt. rain / 72-85°

Present at Site: Dennis F. Kyle B. Andrew w/ GunnCo Jimmy C. Dalton L. Daniel W. Steve H. Sandy B.

Time:

Mileage:

To: File

Services Performed

- [x] Concrete Testing
- [ ] Cylinder Pickup
- [ ] Asphalt Testing
- [ ] Steel Testing
- [ ] Asphalt Coring
- [ ] Concrete Coring
- [ ] Undercut Evaluation
- [ ] Foundation Evaluation
- [ ] Proofrolling
- [x] In-Place Density
- [ ] Other (Explain)

Observations/Remarks:

Lite rain falling onsite @ 7am this morning. Earnhardt moved off structural fill, and switched over to hauling topsoil (SS) to the North intercell berm on Cell 1. Dressing up LCS lines in Cell 1 w/a skid-steer loader.

PFF showed up, decided not to work, to wet.

ABC hauling ash out of pond 3 into Cell 2B, piling on grid line 4. Compaction effort in progress on 2B side North berm.

SEFA hauling dry ash into Cell 2A for subgrade fill. I ran two fdt's on 2A side today, both failed. I informed Daniel of non-compliance test results. Will rework failing areas for retesting. I took in sample SG-5 for proctor testing.

Crowder Const. poured half of the 6 inch slab @ 7 this morning, 20cy of 4000 psi. I ran slump & air test on each load of concrete. 1st = tK#2701 - slump - 3¾" - air - 3.4%. No cylds. molded.
2nd = tK#2721 - slump - 4" - air - 3.5%. " " "

GunnCo did Cell 1 pump start up.

On-Site Representative/Company

Jimmy Addis
S&ME Personnel

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S&ME Form FRLF03

9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953

Field Report

Date	Job No.
07/09/09	1356-06-825 Ph. 9

Project/Location
Allen Steam Station

Contractor	Weather/Temp
Crowder	Rainy / 80

Present at Site
Kyle Baucom & Jimmy Addis, S&ME, Inc;
Sandy Brown & John Hitt, Crowder;
Andre Steyn, GunnCo

Time	Mileage
1:00-3:30	40 mi. round trip

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density

Other (Explain)
LCS/LDS Pump Start Up

Observations/Remarks:

1300 arrived on site and headed to control panel area just south of Cell 1. Andre was at the control panel area. Attendees consisted of myself (S&ME), Jimmy Addis (S&ME), Sandy Brown (Crowder), John Hitt (Crowder), another Crowder attendee, Andre Steyn (GunnCo), another GunnCo attendee, Katie Strack (Duke Energy), and several other Duke Energy attendees. Andre explained that each LDS and LCS riser was connected to a discharge pipe. The discharge pipes were connected to the pumps installed by GunnCo. Each pump was connected to a flow meter and control panel. The control panel has switches for the pumps, level indicators, and flow indicators. The pump will automatically begin pumping at a specified level. Andre demonstrated this on the LDS pump by lowering the specified level below the actual level. The pump automatically began pumping when the specified level equaled the actual level. The LCS pumping system consisted of a low-flow pump (#1) and a high-flow pump (#2). Pump #1 begins automatically pumping at a level of 24 inches and pumps down to a level of 12 inches and shuts off. However, if pump #1 turns on at 24 inches, but the level increases and reaches 30 inches, then pump #2 automatically turns on. With both pumps on, the leachate is pumped until the level is down to 12 inches and both pumps shut off. Andre demonstrated this by hooking up a simulator to the level indicator. He simulated the level rising to 24 inches, then past 30 inches, then lowering to 12 inches. Each pump automatically turned on and off as specified. Andre explained that a field start up report would be included with the Operations and Maintenance Manuals for the pumps. Left site at 1530 to head back to the office.

END OF REPORT

On-Site Representative/Company	Kyle Baucom S&ME Personnel

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S&ME
9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
July 10, 2009	1356-06-825-09
Project/Location	
Plant Allen RAB Ash LF/Belmont NC	
Contractor	**Weather/Temp**
EG/PFF/ABC/Crowder	Sunny / 67-87°
Present at Site	
Tony K. Jimmy C. Dalton L. Steve H.	
Time	**Mileage**

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☑ In-Place Density
- ☐ Other (Explain)

Observations/Remarks:

Plastic Fusion filled sandbags until 9:30 this morning, ran out of screenings. Earnhardt ordered one more load of screenings ~3 total thus far. PFF put down one panel of the rain cover, start on the NE corner of Cell 1B pulled to the SE corner, approximately 780'x60'. Eighteen inches of the rain cover was placed in a eight inch "v's deep anchor trench. Sand bags placed every ten feet starting at the East side toe of slope, and across panel; sandbags sewed shut after filling. Earnhardt backfilled the entire East side anchor trench along panel #1. PFF spent the afternoon filling & sewing sandbags.

ABC hauling ash out of pond 3, into Cell 2B for subgrade, piling on line 4. I ran two fdt's on Cell 2B North berm, both passed.

I ran two retest on Cell 2A side (SEFA), which were reworked late yesterday. Both of these test passed.

Crowder Const. saw cut 6 inch slab & adjacent curb @ scale pad area. Cleaned up around scale area.

On-Site Representative/Company

Jimmy Adkins
S&ME Personnel

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S&ME Form FRLF03

S&ME
9751 Southern Pine Blvd
Charlotte, NC 28273
(704) 523-4726
(704) 525-3953 fax

Field Report

Date	Job No.
July 11, 2009	1356-06-825-09

Project/Location: Plant Allen RAB Ash LF / Belmont NC.

Contractor	Weather/Temp
EG/PFF	PC / 72-86°

Present at Site: Al C. Tony K.

Time	Mileage

To: File

Services Performed

- ☐ Concrete Testing
- ☐ Cylinder Pickup
- ☐ Asphalt Testing
- ☐ Steel Testing
- ☐ Asphalt Coring
- ☐ Concrete Coring
- ☐ Undercut Evaluation
- ☐ Foundation Evaluation
- ☐ Proofrolling
- ☐ In-Place Density
- ☑ Other (Explain): Sacrificial Geomembrane

Observations/Remarks:

Observed installation of the rain cover by PFF. Today 3 panels were deployed on Cell 1 ~ 1B side working East to West. Seams were double seam, and sand bags placed every 10 feet. Wind picked up as panel 3 was put out, contractor tried there best to walk out air bubbles and place sand bags simultaneous. Panel 4 deployed afterlunch, was seam to panel 3, and left folded up, to much wind. Leading edge sand bagged, PFF quit @ 2:15.
ABC worked in pond 3, no hauling.

On-Site Representative/Company

S&ME Personnel

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S&ME Form FRLF03

Notices of Change

S&ME

NOTICE OF CHANGE

OWNER:	Duke Energy	**Date:** 6/5/09	**Job No.:** 1356-06-825-09
DESCRIPTION:	LCS Pipe	Duke Energy – Allen Steam Station	
		Ash Landfill	
NOTICE OF CHANGE NO.	13		
CHANGE ORDER NOS:			

Description of design change:

The LCS/LDS lateral detail was modified for the southernmost lateral and added as Detail 22A on Drawing D6. Drainage aggregate will be placed over the LDS geocomposite up to the top of the LDS lateral trench. Drainage aggregate will be covered with an 8 oz/yd^2 non-woven geotextile filter.

Reason for design change:

To allow for an intersection of the southernmost lateral pipe and header pipes in the sump area.

Effective date of design change:

Immediately.

Financial and schedule considerations:

None anticipated.

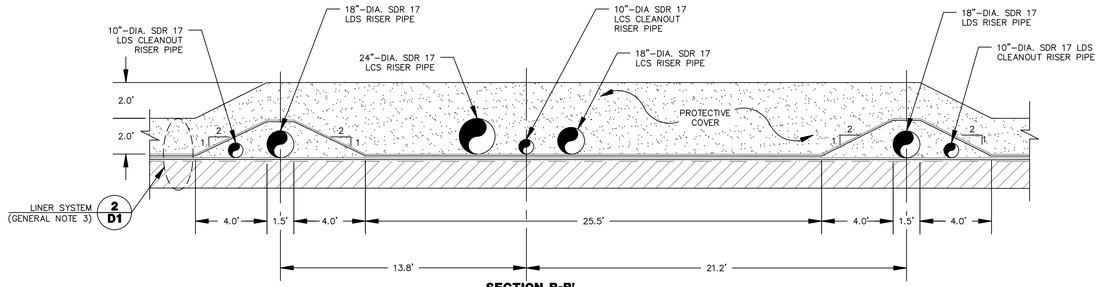
Attachments:

Revision 1 of Drawing D6

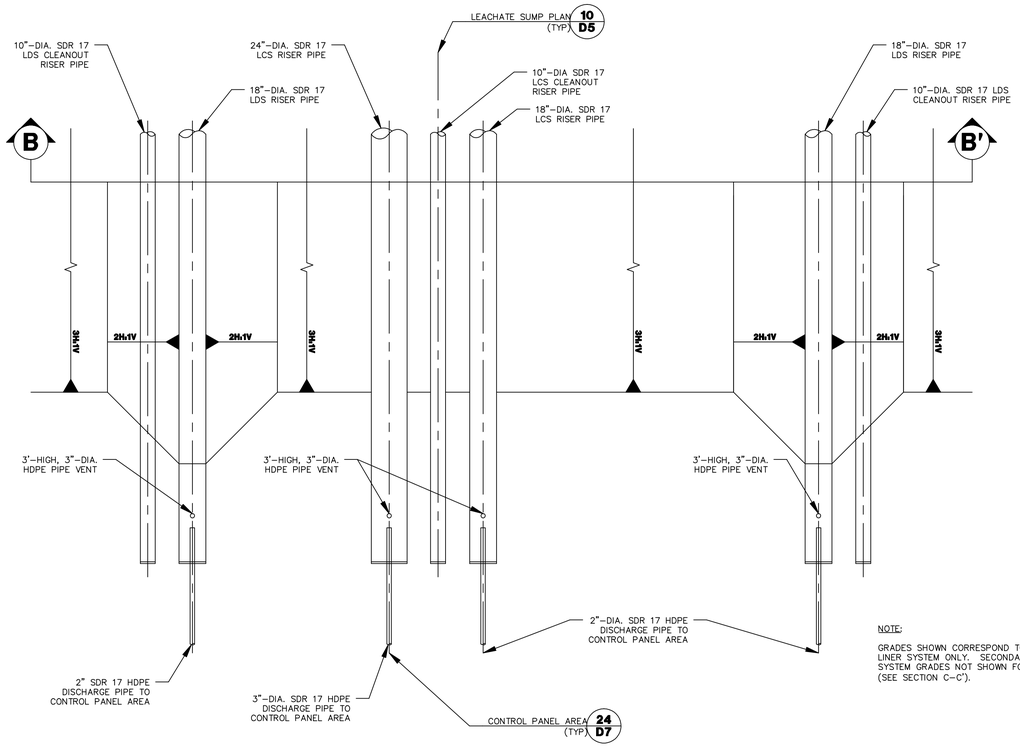
6/8/09		6/3/09	
Engineer of Record	**Date**	**Prepared By**	**Date**
Kenneth Daly, P.E.		Kyle Baucom, E.I.	

Copies to:

- ☒ Ted Manes, Duke Energy
- ☒ S&ME File No. 1356-06-825
- ☐
- ☒ Mark LeGrand, Earnhardt Grading, Inc.
- ☐
- ☐



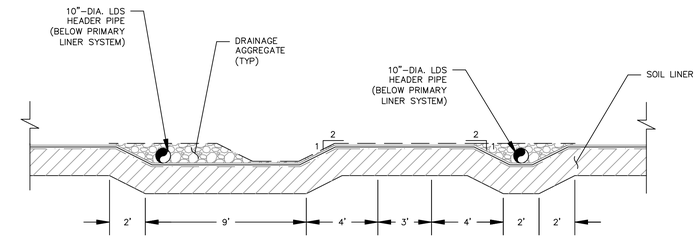
SECTION B-B'
SCALE: 1"=4'



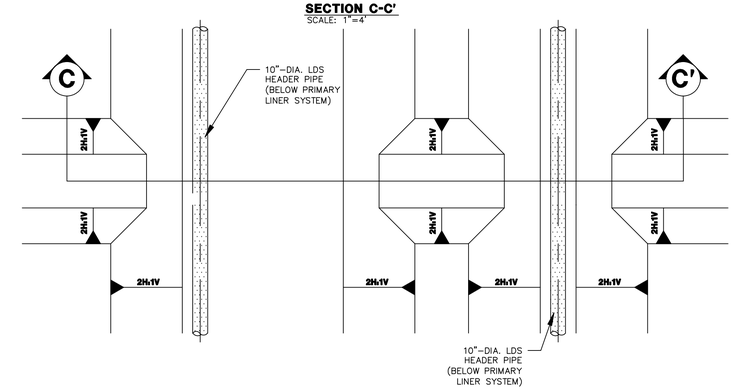
NOTE:

GRADES SHOWN CORRESPOND TO PRIMARY LINER SYSTEM ONLY. SECONDARY LINER SYSTEM GRADES NOT SHOWN FOR CLARITY (SEE SECTION C-C').

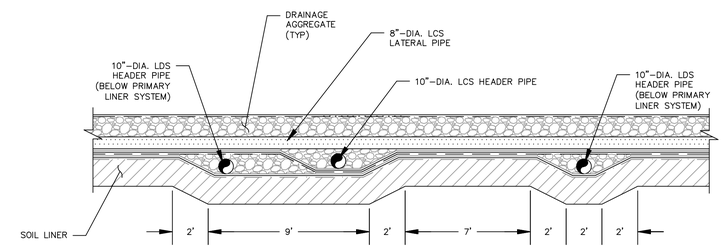
19 D6 RISER OUTLET PLAN DETAIL
SCALE: 1"=4'



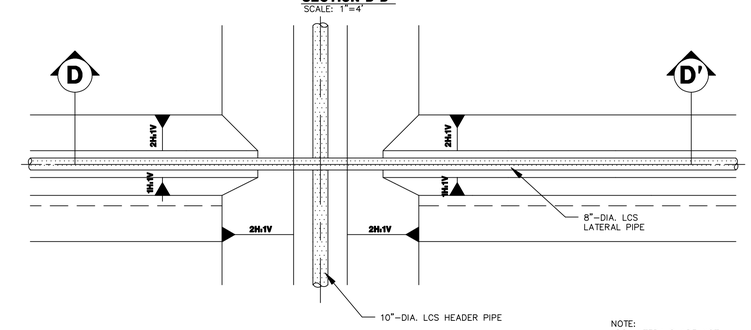
SECTION C-C'
SCALE: 1"=4'



20 D6 LDS LATERAL-CORRIDOR INTERSECTION
SCALE: 1"=4'

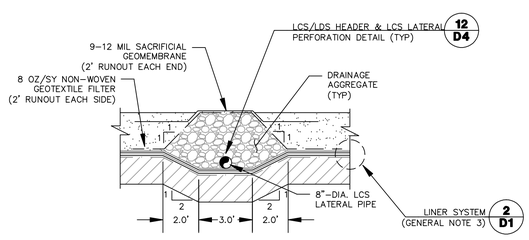


SECTION D-D'
SCALE: 1"=4'

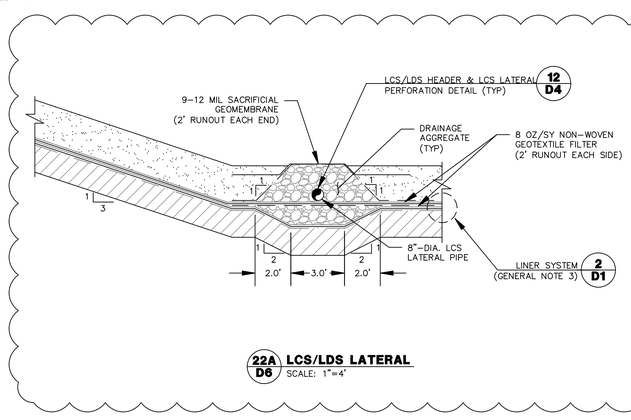


NOTE:
LDS LATERALS ARE NOT SHOWN IN PLAN FOR CLARITY.

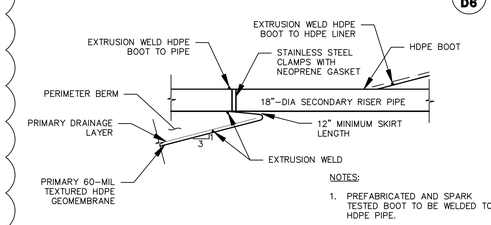
21 D6 LCS LATERAL-CORRIDOR INTERSECTION
SCALE: 1"=4'



22 D6 LCS/LDS LATERAL
SCALE: 1"=4'



22A D6 LCS/LDS LATERAL
SCALE: 1"=4'



NOTES:

1. PREFABRICATED AND SPARK TESTED BOOT TO BE WELDED TO HDPE PIPE.

23 D6 RISER PIPE PENETRATION DETAIL (TYP)
SCALE: N.T.S.

GENERAL NOTES:

1. STRUCTURAL FILL SHALL CONSIST OF BORROW SOILS CONSISTENT WITH SPECIFICATION SECTION 02320.
2. SUBGRADE FILL SHALL CONSIST OF BORROW SOILS AND/OR ASH FILL CONSISTENT WITH SPECIFICATION SECTION 02320.
3. DETAIL IS DRAWN TO SCALE WITH THE EXCEPTION OF THE GEOSYNTHETIC COMPONENTS WHICH ARE EXAGGERATED FOR CLARITY.
4. ANCHOR TRENCH BACKFILL AND PERIMETER BERM SHALL CONSIST OF SAME MATERIAL USED TO CONSTRUCT SOIL LINER CONSISTENT WITH SPECIFICATION SECTIONS 02321 AND 02324.
5. THIN, FLEXIBLE HIGHWAY-TYPE MARKER TO BE PROVIDED AT CHANGES IN ALIGNMENT, SPACED 100' O.C. (MAX.) AND 25' O.C. ON CURVES.

Duke Energy ©

S&ME
WWW.SMEINC.COM

NORTH CAROLINA PROFESSIONAL SEAL 023250 ENGINEER KENNETH R. DALY

NO.	DATE	DESCRIPTION	BY
1	6-5-09	NOC 13: LCS PIPE	
0	10-20-08	ISSUED FOR CONSTRUCTION	

LCS/LDS DETAILS IV

PHASE I RAB ASH LANDFILL
DUKE ENERGY - ALLEN STEAM STATION
BELMONT, NORTH CAROLINA

DRAWN BY: ELH	CHECKED BY: KRD
DESIGNED BY: CHR	APPROVED BY: KRD
PROJECT NUMBER: 1356-06-825	
SCALE: AS SHOWN	DATE: 7-31-08
DRAWING: D6	OF: 28

DRAWING PATH: Q:\1356\DUKE ENERGY\06-825 PLANT ALLEN\DWG\CONSTRUCTION\NOC 13 - LATERAL DETAIL\DETAILS 1-7.DWG