



2018 LANDFILL GAS SYSTEM
EXPANSION
RECORD DOCUMENTATION AND
CONSTRUCTION CERTIFICATION REPORT

LORAIN II LANDFILL
OBERLIN, OHIO

PREPARED FOR

LORAIN II LANDFILL
43502 OBERLIN ELYRIA ROAD
OBERLIN, OHIO 44074

DATED AUGUST 2018

PREPARED BY

BEL ENVIRONMENTAL ENGINEERING, LLC.
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EXECUTIVE SUMMARY

The Phase I Landfill Gas System Expansion construction at Lorain II Landfill was updated to include the following major components:

- 1,201-feet of 6-inch diameter SDR-17 HDPE gas conveyance piping,
- 1,079-feet of 2-inch diameter SDR-9 HDPE airline piping,
- 1,079-feet of 3-inch diameter SDR-11 HDPE force main piping,
- Buried 424-feet of 12-inch diameter SDR-17 HDPE above ground gas conveyance piping.
- Buried 188-feet of 6-inch diameter SDR-17 HDPE above ground gas conveyance piping.
- Re-Drilled 5 vertical gas extraction wells,
- Drilled 6 new vertical gas extraction wells,

**RECORD DOCUMENTATION AND CONSTRUCTION CERTIFICATION
LORAIN II LANDFILL
2018 PHASE 1 LANDFILL GAS MANAGEMENT SYSTEM**

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1.0 INTRODUCTION

Lorain II Landfill (Lorain), in 2018 completed landfill gas system (LFG) modifications and expansion at the solid waste facility located in Oberlin, Lorain County, Ohio. Construction activities started May 18, 2018 and were substantially completed July 13, 2018.

BEL Environmental Engineering, LLC (BEL) of Willoughby, Ohio, prepared the Construction Plans and Boring Schedule utilizing aerials provided by Cooper Aerial Surveys Co. of Philadelphia, Pennsylvania, survey information provided by Wellert Engineering Inc. (Wellert) of New Philadelphia, Ohio and landfill base liner grades also provided by Wellert. BEL was also retained by Lorain to provide full-time third-party quality assurance monitoring and documentation of construction activities associated with the Phase 1 2018 landfill system construction.

American Environmental Group, LTD. (AEG), of Richfield, Ohio, installed the landfill gas extraction wells, LFG conveyance piping system, and other ancillary components related to the gas and liquid collection system.

Wellert Engineering Inc. (Wellert) of Medina, Ohio provided surveying services and prepared the gas collection system as-built drawings.

This report, along with the accompanying appendices and record drawings, provides documentation of the gas collection system construction. Included within this report are the following items:

- Certification of facility construction,
- Extraction well boring and construction logs,
- Gas conveyance piping air pressure testing results,
- Liner repair log and trial welds,
- Photo Documentation,
- BEL Daily Field Reports,
- Pertinent Documents,
- Resumes, and
- Gas collection system record drawings and details.

1.1 REFERENCE DOCUMENTS

The following reference documents are applicable to the Lorain II Landfill Phase 1 2018 landfill gas system modification and expansion:

- The Construction Quality Assurance/Quality Control Plan (CQA/QC) Plan, Dated May 2009, Revised January 2015.
- The Gas Collection and Control System (GCCS) Design Plan Lorain County II Landfill, Dated June 1997, Revised February 2004.
- Title V Operating Permit No. P0114469 approved February 27, 2014

1.2 PROJECT PERSONNEL

The key personnel and companies involved with the construction of the 2018 Phase 1 landfill gas system expansion and modification at Carbon Limestone Landfill are listed below:

Lorain II Landfill – Owner

Christina Pearse – Environmental Manager
Rick Kostelnick – Facility Manager

BEL Environmental Engineering, LLC. – Design and Construction Certification

Brian Barninger PE – Certifying Engineer/Design Engineer
Janet Todia – Project Manager
Jake Cornelius – CQA Technician
Shane Whitehouse – CQA Technician

American Environmental Group, Ltd. – Contractor

Bob Minor – Project Manager – Pipeline Construction
Dean Back – Superintendent – Pipeline Construction
Jeff Enochs – Project Manager – Drill Crew
Clayton Johnson – Superintendent – Drill Crew

Wellert Engineering, Inc. – Surveying Services

Kyle Danals – Project Manager

In accordance with OAC 3745-27-08(H) (7) all BEL personnel that worked this project had the appropriate training and experience to complete the necessary construction oversight and testing. Their qualifications are as follows:

Brian Barninger, PE – Mr. Barninger is a Registered Professional Engineer in the State of Ohio and has 14 years of experience with environmental construction, including project management, remedial design, and construction quality assurance. Mr. Barninger has acted as a Landfill Engineer/Project Manager for over 100 solid and hazardous waste landfill construction projects at 40 different landfill facilities in 5 states.

Janet Todia – Ms. Todia has 20 years of experience and knowledge in every aspect of landfill design, landfill gas CQA, GCCSs, construction, compliance, operations, maintenance, closure and post-closure care. She has served as a Quality Control Manager/Project Manager for the past eight years. She is experienced with drilling, pipe fusion welding and pressure testing, transmission line installation, and re-compacted soils and geosynthetic repair procedures and documentation.

Jake Cornelius – Mr. Cornelius has 10 years of experience in environmental construction and construction quality assurance. He has served as a construction quality control technician on numerous landfill projects working with multiple earthworks, geosynthetic, and piping contractors. As a Construction Foreman/Supervisor, Mr. Cornelius performed over 43 large scale and 24 small scale LFG construction projects where he installed thousands of feet of LFG piping, flare stations, leachate collection tanks, pump stations, and performed several O&M projects.

Personnel resumes are included in Appendix F.

1.3 ALTERATIONS

In accordance with OAC Rule 3745-27-08(H) (2), this report notes the alterations from the approved PTI Application. During the course of the construction/installation activities, there were no significant alterations/deviations implemented for the 2018 Phase 1 landfill gas system construction at Lorain County II Landfill.

1.4 OTHER CHANGES

In accordance with OAC Rule 3745-27-08(H) (2) (c), the following is a list of changes during the 2017 Phase 1 landfill gas system construction that enhanced quality and benefited constructability.

- Some of the piping layout was constructed differently from the authorizing documents due to landfill layout such as active waste disposal areas and lined drainage channels.
- Any minor differences in the construction details compared to the authorizing documents are a result of Lorain implementing standard landfill gas details. Any changes denote an increase in detail or an upgrade in materials.

1.5 SUMMARY OF WEATHER AND EQUIPMENT IMPACT

In accordance with OAC Rule 3745-27-08(H) (1) (b) it is being noted that no significant difficulties or limitations were encountered during construction due to weather and equipment. Please refer to the Daily Field Reports in Appendix D for details on any minor weather delays.

1.6 SUMMARY OF DESIGN AND CONSTRUCTION SPECIFICATIONS

The 2018 Phase 1 gas management system construction consisted of three (3) engineered components: LFG Extraction Wells, LFG Conveyance Piping System, and LFG Condensate Management System. Each component was constructed per the design and construction specifications except where noted in section 1.3 of this narrative. A summary of their specifications are as follows:

- LFG Extraction Wells – Each borehole was drilled at a minimum diameter of 3 feet and to a depth no less than 15 feet from the landfill base liner. The well casing was constructed of a 6-inch or 8-inch diameter solid and perforated HDPE pipe. The backfill consisted of washed low-carbonate stone placed to a minimum depth of 2-feet above the perforated pipe, the remainder of the backfill consisted of a geonet ring, two hydrated bentonite plugs and clean soil. See Sheet 2 Detail 1 in Appendix G.
- LFG Conveyance Piping System – The piping consisted of 6-inch, 8-inch, and 12-inch diameter SDR-17 HDPE constructed with conventional butt fusion welding. All piping was subjected to air pressure testing and installed at a minimum 3 percent slope within limits of waste and a minimum of 1 percent slope outside the limits of waste. All piping was subjected to air pressure testing. See Sheet 1 in Appendix G for as-built pipe locations.
- LFG Condensate Management System – Improvements consisted of the installation of 2-inch diameter SDR 9 HDPE airline piping and 3-inch and 4-inch SDR-11 HDPE force main constructed with butt fusion welding. All piping was subjected to air pressure testing. See Appendix G, Sheet 1 for individual component locations.

2.0 CONSTRUCTION PROCEDURES

The Lorain II Landfill gas system expansion consisted of vertical extraction wells and temporary horizontal collectors connected to a gas conveyance piping system via wellhead attachments as depicted in the record details. The new conveyance system was connected to the existing 12-inch & 18-inch diameter HDPE header piping. In general, the landfill gas management system installed as part of this project consists of the following components:

- Vertical extraction wells equipped with wellheads,
- Remote wellheads implemented to meet grade requirements,
- Lateral and header piping lines,
- Airlines to operate pneumatic pumps installed in the condensate pump station and vertical extraction wells,
- Force main to convey gas condensate,
- Other ancillary components included valves, valve stations, pumps, and other fittings necessary to operate the landfill gas collection system.

The following provides a description of the construction activities:

2.1 SURVEY AND LAYOUT

Prior to drilling the landfill gas extraction wells, the proposed borehole locations and surface elevations were surveyed by Wellert and marked with field lath. The surface elevation survey provided a means to ensure that the landfill base liner was not damaged during the drilling operation. BEL compared surveyed elevations with the design drilling schedule elevations and made modifications as necessary. BEL then provided a final drilling schedule for review and approval by BEL, Wellert, and Republic. Wellert also provided survey locations for the gas conveyance piping and several existing header/lateral locations. Republic, AEG, and BEL evaluated the conveyance piping design location and made improvements to enhance the gas collection operations while also improving future tie-in locations. Wellert performed as-built surveying of the gas management components as they were constructed, See Appendix G, Sheet 1 for Record Drawings depicting the gas piping layout.

2.2 LFG EXTRACTION WELLS

The 2018 Phase 1 expansion of Lorain's LFG system includes five (5) re-drilled vertical gas extraction wells and six (6) new wells. See the As-Built Well Schedule on Sheet 2 in Appendix G for a list of re-drilled extraction wells. As built extraction well locations are shown on Sheet 1 in Appendix G.

Wells were drilled by a Soil MEC SR30 track mounted drill rig, equipped with a 36-inch diameter bucket auger. The cover soils and refuse removed during the drilling process were collected and transported to the landfill's active disposal area. As indicated on the Well Schedule and Extraction Well Detail on Sheet 2 in Appendix G, the borings were drilled to maintain a minimum 15-foot separation between the bottom of the borehole and the top of protective cover within the landfill base liner system. CQA Boring logs are included in Appendix A.

Following the completion of a boring, the extraction well piping was installed. The well piping consisted of 6-inch or 8-inch diameter SDR 11 perforated and solid pipe with a butt-fusion end cap at the bottom of the perforated pipe. A 20-foot length of solid pipe was installed as the uppermost section of well casing to minimize the potential for surface air intrusion during future gas extraction operations. The extraction well casing extended a minimum of 3-feet above the existing ground elevation as shown on the Extraction Well Detail on Sheet 2, Detail 1 in Appendix G.

A safety grate was positioned across the surface of the borehole when the well piping was set. The well piping was lowered into the borehole utilizing the drill rig cable system and an excavator with nylon straps. The piping was raised 1-foot off the bottom, centered in the borehole, and secured to the safety grate with a nylon strap.

A collection medium, consisting of coarse aggregate generally 1-inch to 3-inch diameter washed low-carbonate gravel, was placed in the borehole annulus around the well piping and extended from the bottom of the well boring to a minimum 2-feet above the perforated/solid pipe joint. A geocomposite ring was placed above the collection medium, and overlain by a 1-foot minimum thick clean soil plug. A 2-foot thick No. 8 mesh hydrated bentonite seal was installed above the soil plug. The borehole was then backfilled with clean soils from the bentonite seal to approximately 5-feet below the existing intermediate cover soils. A second hydrated bentonite seal, 2-feet thick, was placed in the borehole and then filled with clean soil to existing grade. AEG installed a welded safety grate 6 inches below the surface and then graded surface soils to promote surface water flow away from the well. The well borehole depth and backfill material depths were verified by visual confirmation of taped measurements. The LFG extraction wells were constructed as depicted on Detail 1, Sheet 2, in Appendix G. Appendix A includes construction logs that show actual constructed well dimensions and materials used in construction.

The gas extraction well record survey locations and elevations, compiled by Wellert Engineering, Inc. (Wellert), are shown on Sheet 1 and 2 in Appendix G.

2.3 LFG CONVEYANCE PIPING SYSTEM

The gas conveyance system was constructed with 6-inch, 8-inch, or 12-inch diameter SDR-17 HDPE pipe with SDR-11 HDPE fittings. Piping was installed with joints completed by conventional butt fusion welding. The gas conveyance pipe trenches were excavated to provide a minimum of three (3) percent slope for piping installed inside limits of waste. Metallic locator tape was installed over the pipe at an approximate trench depth of 1-foot. The trenching was completed by a Caterpillar 320E track excavator and was generally performed at a minimum width of 24-inches. Air and condensate force main lines were generally installed in the same trench as the header pipe, as shown in Appendix G, Sheet 3, Detail 1. Trenches excavated within the limits of refuse were bedded with clean compacted soils to provide a smooth surface above the waste, protecting the pipe and maintaining a consistent grade. Additional clean backfill soil was placed to existing ground surface. BEL monitored all activities to ensure the collection pipe was not damaged during installation. At road crossings, LFG conveyance piping was encased in a protective pipe; see Sheet 3, Detail 3 in Appendix H.

The new header and lateral connections were tied into the existing LFG system utilizing fusion welding and existing flange connections. See Sheet 2, Detail 6 in Appendix G for a typical flange connection. In areas where conventional LFG laterals were not feasible due to current grades, remote wellheads were utilized, see Sheet 4, Detail 5 in Appendix G for a typical remote wellhead.

One 12-inch control valve was installed in the conveyance system during construction. Valve locations are shown on Sheet 1 in Appendix G. See Sheet 4, Detail 1 for a typical underground valve detail.

2.4 LFG CONDENSATE MANAGEMENT SYSTEM

The 2018 Phase 1 LFG System construction included the installation of air and forcemain piping, and pneumatic pumps. The air piping consisted of 2-inch diameter SDR-9 HDPE. The forcemain was 3-inch and 4-inch SDR-11 HDPE. Piping was installed with joints completed by conventional butt fusion welding techniques and flange connections. Air and condensate forcemain lines were typically installed in the same trench, as shown in Appendix G, Sheet 3, Detail 1.

The force main trench was excavated using CAT 320E track excavators. Typical trench dimensions were 24-inches wide by 3-feet deep and were generally installed with gas conveyance piping, see Sheet 3, Detail 1 in Appendix G for a typical trench detail. Pipe bedding consisted of clean compacted soils to provide a smooth surface. The piping was then placed and backfilled within 1 foot of final elevation where metallic caution tape was placed. Remainder of trench was backfilled and compacted with the excavator bucket and graded to match existing conditions. Record survey of the installed landfill conveyance piping system is shown on Sheet 1 and 2 in Appendix G.

3.0 CONSTRUCTION QUALITY ASSURANCE

BEL provided construction quality assurance services during the installation of the 2018 Phase 1 landfill gas system expansion at Lorain II Landfill. Services included observation of conveyance piping, piping systems construction, air pressure testing, and documentation of construction materials and procedures.

3.1 GAS CONVEYANCE PIPING AIR PRESSURE TESTING

LFG conveyance piping was air-pressure tested following fusion welding to evaluate the system continuity. Air pressure testing was performed on header and lateral piping by pressurizing the piping system to a minimum of 10-psig through a fabricated blind flange containing a valve stem with an in-line air pressure gauge. The forcemain piping was pressurized to 100-psig and airline piping was pressurized to 100-psig in the same manner. Following a brief system stabilization period, initial and final pressures were observed and recorded through an elapsed time of one (1) hour. The system pressure test results were determined to be acceptable if pressure loss was less than 10%. The final test results are provided in Appendix B.

3.2 CONSTRUCTION MONITORING

BEL performed construction observation during the Lorain II Landfill gas management system installation to verify the general conformance of materials and construction procedures to the design specifications. The activities and items observed and documented included, but were not limited to, the following:

- Gas conveyance piping material, SDR designation, sizing, and installation,
- Gas conveyance pipe trench and backfill,
- Gas conveyance pipe pressure testing,
- Extraction well boring and construction,
- Air and force main piping material, SDR designation, sizing and installation, and

4.0 CERTIFICATION SUMMARY

BEL Environmental Engineering, LLC. provided construction quality assurance (CQA) observation and documentation during the Lorain II Landfill 2018 Phase 1 landfill gas expansion system construction. The services provided by BEL included: observation of construction procedures, coordination with surveyors and site personnel, CQA monitoring, and air monitoring. The CQA monitoring services included: monitoring the installation of LFG extraction wells, installation of new header and lateral piping, pipe pressure testing, backfilling, and associated construction as detailed above. A summary of construction activities documented by BEL personnel was reported on the Daily Field Reports included in Appendix D. Selected construction photographs are included as Appendix C.

The observations and tests performed by BEL personnel as described in this report during the construction of the 2018 Phase 1 Landfill Gas System at Lorain II Landfill indicate that the materials tested conform to the project requirements and construction was performed in compliance with the reference documents listed in Section 1.1.

I certify that this document and all attachments were prepared under my direction or supervision in conformance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiries of the persons who were directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete.



Brian P. Barninger, P.E.
BEL Environmental Engineering, LLC.

Certifying Engineer

Ohio Professional Engineer

No. E-73061

Date

APPENDIX A

LFG EXTRACTION WELL BORING AND CONSTRUCTION LOGS

DATE: 5/30/2018

NORTHING:	597, 323
EASTING:	2,059,678
ELEVATION:	345

AEG/ C. Johnson

BEL REPRESENTATIVE: *Shane K. Whitehouse*

GAS EXTRACTION WELL LOG



WELL ID: EW-159R DATE: 5/30/2018

PROJECT NAME: Lorain II 2018 Spring GCCS NORTHING: 597, 323
 BEL PROJECT#: 2018.126 EASTING: 2,059,678
 ELEVATION: 345

CONTRACTOR/SUPERVISOR: AEG/ C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	50% plastic, 30% wood, 20% metal	YES	NO	NO
5-10	50% plastic, 30% wood, 20% textile	NO	NO	NO
10-15	40% plastic, 20% wood, 20% textile, 10% paper, 10% metal	NO	NO	NO
15-20	40% plastic, 20% wood, 20% textile, 10% rubber, 10% paper	NO	NO	NO
20-25	40% plastic, 20% paper, 20% textile, 10% metal, 10% wood	NO	NO	NO
25-30	40% plastic, 20% paper, 20% textile, 10% metal, 10% wood	NO	NO	NO
30-35	30% plastic, 30% paper, 30% textile, 10% wood	NO	NO	NO
35-40	30% plastic, 30% paper, 30% textile, 10% rubber	NO	NO	NO
40-45	40% plastic, 20% paper, 20% rubber, 10% wood, 10% metal	NO	NO	NO
45-50	40% plastic, 20% paper, 20% rubber, 10% wood, 10% metal	NO	NO	NO
50-55	40% plastic, 20% paper, 20% rubber, 10% wood, 10% metal	NO	NO	NO
55-60	40% plastic, 20% paper, 20% rubber, 10% wood, 10% metal	NO	NO	NO
60-65	30% plastic, 20% wood, 20% rubber, 20% textile, 10% metal	NO	NO	NO
65-70	30% plastic, 30% textile, 20% rubber, 10% metal, 10% paper	NO	NO	NO
70-75				
75-80				
80-85				
85-90				
90-95				
95-100				
100-105				
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

GAS EXTRACTION WELL LOG



WELL ID: EW-160R

DATE: 5/31/2018

PROJECT NAME: Lorain II 2018 Spring GCCS
 BEL PROJECT#: 2018.126

NORTHING: 597,114
 EASTING: 2,059,140
 ELEVATION: 905

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

BORING LOG					GAS WELL DIAGRAM	
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)		
0-2	NONE	LITTLE	NORMAL	76		
2-5	NONE	LITTLE	NORMAL	77		
5-10	NONE	LITTLE	NORMAL	78		
10-15	NONE	LITTLE	NORMAL	86		
15-20	NONE	LITTLE	NORMAL	92		
20-25	NONE	LITTLE	NORMAL	100		
25-30	NONE	LITTLE	NORMAL	110		
30-35	NONE	LITTLE	NORMAL	115		
35-40	NONE	LITTLE	NORMAL	120		
40-45	NONE	SOME	NORMAL	128		
45-50	NONE	SOME	NORMAL	134		
50-55	NONE	SOME	NORMAL	128		
55-60	NONE	MODERATE	DAMP	126		
60-65	NONE	MODERATE	DAMP	130		
65-70	NONE	MODERATE	DAMP	134		
70-75	NONE	MODERATE	DAMP	138		
75-80	NONE	MODERATE	DAMP	136		
80-85	NONE	MODERATE	DAMP	138		
85-90	NONE	MODERATE	DAMP	138		
90-95	NONE	MODERATE	DAMP	140		
95-100	NONE	MUCH	WET	142		
100-105	NONE	MUCH	WET	142		
105-110	NONE	MUCH	WET	144		
110-115	NONE	MUCH	WET	146		
115-120						
120-125						
125-130						
130-135						
135-140						
LEGEND						
	None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated			
MATERIAL LIST						
Bore Size (inch):		36				
Bore Depth (ft):		115'				
Pipe Size (inch):		6"				
Pipe Material:		HDPE				
Solid Pipe Above Ground (ft):		3'				
Solid Pipe Below Ground (ft):		20'				
Perforated Pipe Length (ft):		94'				
Cover Depth (ft):		3'				
Bentonite Layer Thickness (ft):		2'(x2)				
Gravel Pack (ft):		96'				
Joint Connections:		Fusion				
Pump Installed:		NO				
Well Grate Installed:		YES				
Notes:						

Pipe Size:	6" HDPE	
Existing Ground Surface		
Well Grate		
Cover Soil		
3-foot Foam Plug		
On Site Soil		
Solid Pipe		
3-foot Foam Plug -		
1-ft (min) of Clean Soil		
Geocomposite Ring		
#3 Stone Extends Above Perf / Solid Interface		
Perf Pipe		
Bore Diameter 36 inches		

3'

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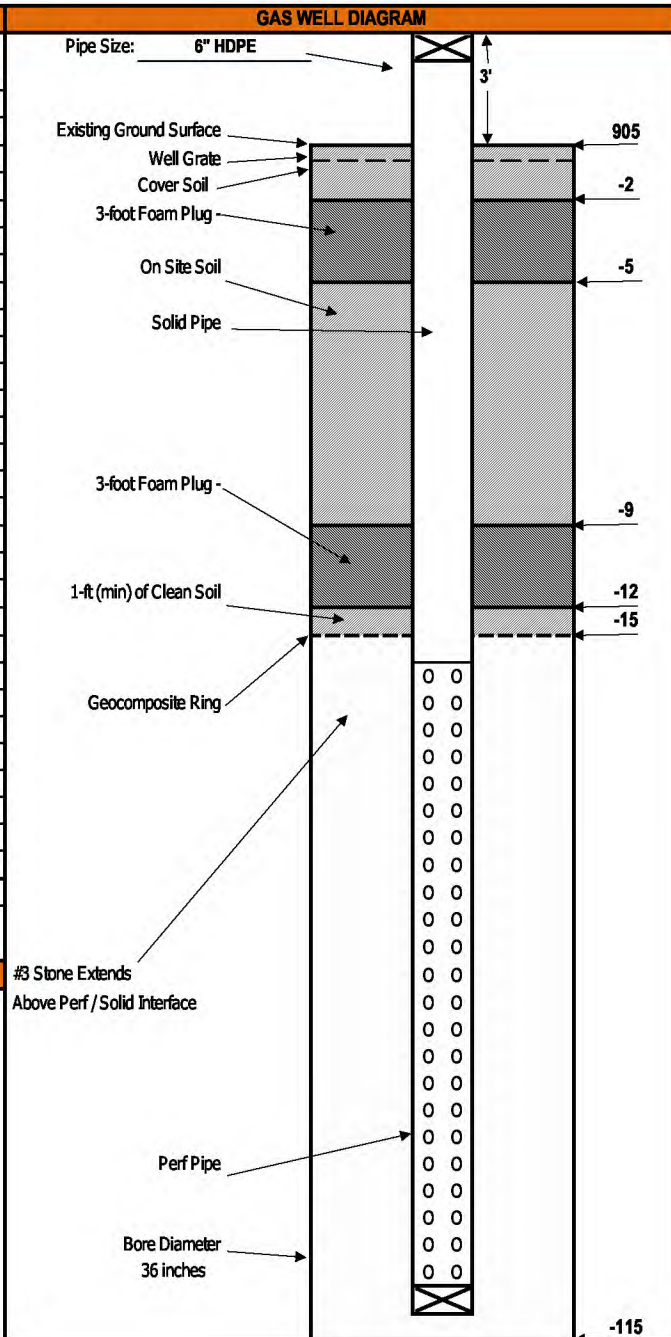
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BEL REPRESENTATIVE: Shane K. Whitehouse

GAS EXTRACTION WELL LOG



WELL ID:	<u>EW-160R</u>	DATE:	<u>5/31/2018</u>
PROJECT NAME:	<u>Lorain II 2018 Spring GCCS</u>	NORTHING:	<u>597,114</u>
BEL PROJECT#:	<u>2018.126</u>	EASTING:	<u>2,059,140</u>
CONTRACTOR/SUPERVISOR:	<u>AEG/C. Johnson</u>	ELEVATION:	<u>905</u>

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	50% plastic, 20% textile, 20% wood, 10% paper	YES	NO	NO
5-10	50% plastic, 20% textile, 20% wood, 10% metal	NO	NO	NO
10-15	50% plastic, 20% paper, 20% wood, 10% textile	NO	NO	NO
15-20	50% plastic, 30% paper, 10 % rubber, 10% metal	NO	NO	NO
20-25	40% plastic, 40% paper, 10% wood, 10% metal	NO	NO	NO
25-30	50% plastic, 30% paper, 10%wood, 10% metal	NO	NO	NO
30-35	50% plastic, 20% paper, 20% textile, 10% rubber	NO	NO	NO
35-40	60% plastic, 20% wood, 20% paper	NO	NO	NO
40-45	50%plastic, 20% paper, 20% rubber, 10% metal	NO	NO	NO
45-50	50% plastic, 20% paper, 20% wood, 10% rubber	NO	NO	NO
50-55	50% plastic, 30% paper, 10% metal, 10% rubber	NO	NO	NO
55-60	60% plastic, 30% paper, 10% textile	NO	NO	NO
60-65	60% plastic, 30% wood, 10% paper	NO	NO	NO
65-70	60% plastic, 20% wood, 10% rubber, 10% textile	NO	NO	NO
70-75	50% plastic, 20% wood, 20% textile, 10% paper	NO	NO	NO
75-80	50% plastic, 20% wood, 10% textile, 10% metal, 10% paper	NO	NO	NO
80-85	40% plastic, 30% wood, 10% paper, 10% rubber, 10% metal	NO	NO	NO
85-90	50% plastic, 30% wood, 10% paper, 10% metal	NO	NO	NO
90-95	30% plastic, 30% wood, 30% paper, 10% metal	NO	NO	NO
95-100	30% plastic, 30% wood, 20% paper, 10% textile, 10% rubber	NO	NO	NO
100-105	30% plastic, 50% textile, 20% wood	NO	NO	YES
105-110	40% plastic, 40% textile, 20% wood	NO	NO	YES
110-115	30% plastic, 30% textile, 30% wood, 10% rubber	NO	NO	YES
115-120				
120-125				
125-130				
130-135				
135-140				

GAS EXTRACTION WELL LOG



WELL ID: EW-301R3

DATE: 5/25/2018

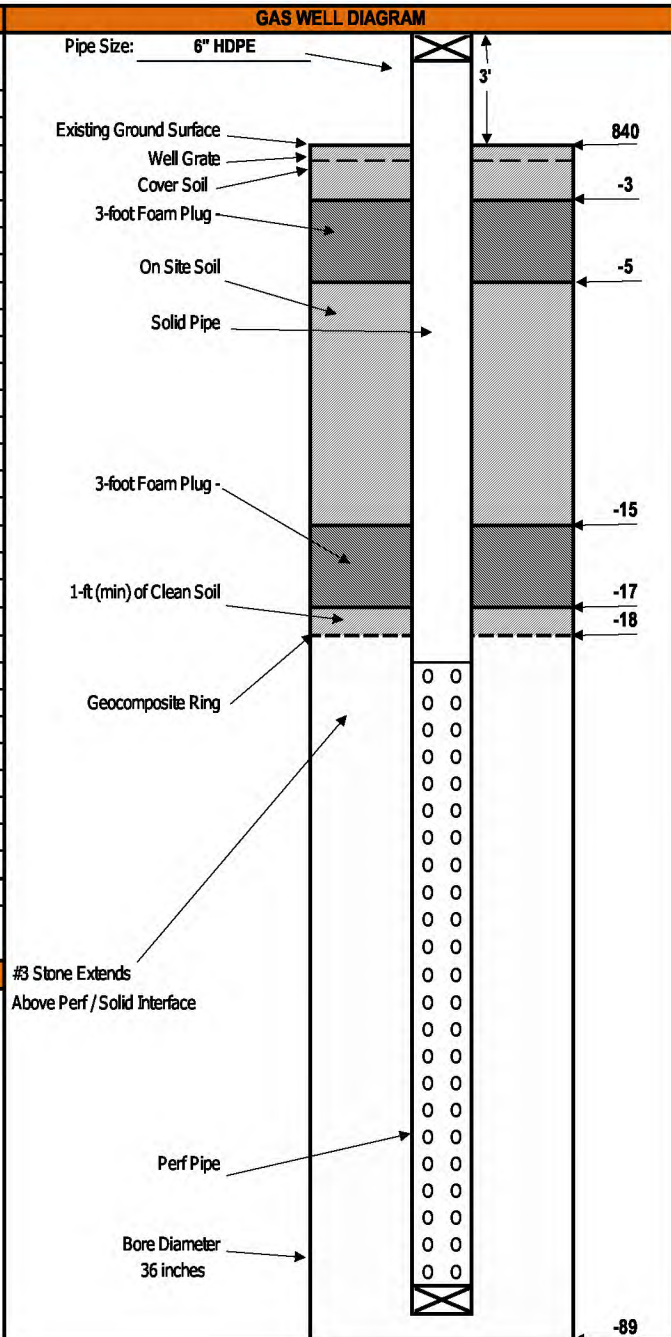
PROJECT NAME: Lorain II 2018 Spring GCCS
 BEL PROJECT#: 2018.126

NORTHING: 597,927
 EASTING: 2,069,856
 ELEVATION: 840

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

BORING LOG					GAS WELL DIAGRAM	
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)		
0-2	NONE	LITTLE	NORMAL	60		
2-5	NONE	LITTLE	NORMAL	65		
5-10	NONE	LITTLE	NORMAL	70		
10-15	NONE	LITTLE	NORMAL	90		
15-20	NONE	SOME	NORMAL	120		
20-25	NONE	SOME	NORMAL	120		
25-30	NONE	SOME	NORMAL	120		
30-35	NONE	SOME	NORMAL	124		
35-40	NONE	MODERATE	NORMAL	129		
40-45	NONE	MODERATE	NORMAL	127		
45-50	NONE	MODERATE	NORMAL	126		
50-55	NONE	MODERATE	NORMAL	128		
55-60	NONE	MODERATE	NORMAL	132		
60-65	NONE	MODERATE	DAMP	130		
65-70	NONE	MODERATE	NORMAL	128		
70-75	NONE	MODERATE	NORMAL	126		
75-80	NONE	MODERATE	NORMAL	126		
80-85	NONE	MODERATE	DAMP	120		
85-90	NONE	MUCH	WET	116		
90-95						
95-100						
100-105						
105-110						
110-115						
115-120						
120-125						
125-130						
130-135						
135-140						
LEGEND						
	None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated			
MATERIAL LIST						
Bore Size (inch):		36"				
Bore Depth (ft):		89'				
Pipe Size (inch):		6"				
Pipe Material:		HDPE				
Solid Pipe Above Ground (ft):		3'				
Solid Pipe Below Ground (ft):		20'				
Perforated Pipe Length (ft):		68'				
Cover Depth (ft):		3'				
Bentonite Layer Thickness (ft):		2'(x2)				
Gravel Pack (ft):		70'				
Joint Connections:		Fusion				
Pump Installed:		NO				
Well Grate Installed:		YES				
Notes:						

Pipe Size:	6" HDPE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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BEL REPRESENTATIVE: Shane K. Whitehouse

GAS EXTRACTION WELL LOG



WELL ID: EW-301R3

DATE: 5/25/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 597,927

BEL PROJECT#: 2018.126

EASTING: 2,069,856

ELEVATION: 840

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	50% plastic, 20% rubber, 20% wood, 10% paper	YES	NO	NO
5-10	60% plastic, 20% paper, 10% wood, 10% metal	NO	NO	NO
10-15	50% plastic, 30% wood, 10% paper, 10% textile	NO	NO	NO
15-20	40% plastic, 30% wood, 20% paper, 10% metal	NO	NO	NO
20-25	50% plastic, 20% wood, 10% textile, 10% paper, 10% metal	NO	NO	NO
25-30	50% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
30-35	50% plastic, 20% wood, 20% paper, 10% metal	NO	NO	NO
35-40	60% plastic, 20% wood, 20% metal	NO	NO	NO
40-45	50% plastic, 40% textile, 10% metal	NO	NO	NO
45-50	50% plastic, 40% textile, 10% wood	NO	NO	NO
50-55	30% plastic, 30% textile, 30% paper, 10% rubber	NO	NO	NO
55-60	30% plastic, 30% textile, 30% paper, 10% metal	NO	NO	NO
60-65	50% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
65-70	50% plastic, 20% textile, 20%, 10% rubber	NO	NO	NO
70-75	60% plastic, 10% textile, 10% wood, 10% metal, 10% paper	NO	NO	NO
75-80	50% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
80-85	40% plastic, 30% wood, 20% paper, 10% rubber	NO	NO	YES
85-90	50% plastic, 20% wood, 20% paper, 10% rubber	NO	NO	YES
90-95				
95-100				
100-105				
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

DATE: 5/30/2018

NORTHING:	598,006
EASTING:	2,059,544
ELEVATION:	877

AEG/C. Johnson

BEL REPRESENTATIVE: *Shane K. Whitehouse*

GAS EXTRACTION WELL LOG



WELL ID: EW-307R3

DATE: 5/30/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,006

BEL PROJECT#: 2018.126

EASTING: 2,059,544

ELEVATION: 877

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	30% plastic, 30% organic, 30% textile, 10% wood	YES	NO	NO
5-10	30% plastic, 20% organic, 20% textile, 20% wood, 10% metal	NO	NO	NO
10-15	40% plastic, 20% wood, 20% rubber, 10% paper, 10% organic	NO	NO	NO
15-20	50% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
20-25	50% plastic, 20% textile, 20% wood, 10% metal	NO	NO	NO
25-30	50% plastic, 20% paper, 20% organic, 10% textile	NO	NO	NO
30-35	50% plastic, 20% textile, 20% wood, 10% metal	NO	NO	NO
35-40	50% plastic, 20% textile, 20% wood, 10% organic	NO	NO	NO
40-45	50% plastic, 30% textile, 20% wood	NO	NO	NO
45-50	50% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
50-55	50% plastic, 30% wood, 10% organic, 10% paper	NO	NO	NO
55-60	50% plastic, 20% rubber, 20% wood, 10% metal	NO	NO	NO
60-65	60% plastic, 20% rubber, 10% wood, 10% textile	NO	NO	NO
65-70	50% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
70-75	40% plastic, 20% paper, 20% wood, 20% textile	NO	NO	NO
75-80	50% plastic, 20% paper, 20% textile, 10% rubber	NO	NO	NO
80-85	50% plastic, 20% metal, 20% wood, 10% paper	NO	NO	NO
85-90	50% plastic, 20% wood, 20% paper, 10% metal	NO	NO	NO
90-95	50% plastic, 10% metal, 10% rubber, 10% wood, 10% textile, 10% paper	NO	NO	NO
95-100	60% plastic, 20% metal, 10% wood, 10% paper	NO	NO	NO
100-105	50% plastic, 20% textile, 20% wood, 10% metal	NO	NO	NO
105-110	40% plastic, 20% rubber, 20% wood, 20% paper	NO	NO	NO
110-115	50% plastic, 20% dirt, 20% organic, 10% paper	NO	NO	NO
115-120	60% plastic, 20% wood, 10% metal, 10% rubber	NO	NO	NO
120-125	60% plastic, 20% rubber, 10% textile, 10% paper	NO	NO	NO
125-130				
130-135				
135-140				

DATE: 5/18/2018

NORTHING:	598,904
EASTING:	2,058,383
ELEVATION:	833

AEG/ C. Johnson

BEL REPRESENTATIVE: *Shane K. Whitehouse*

GAS EXTRACTION WELL LOG



WELL ID: EW-355R

DATE: 5/18/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,904

BEL PROJECT#: 2018.126

EASTING: 2,058,383

ELEVATION: 833

CONTRACTOR/SUPERVISOR: AEG/ C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	30% dirt, 50% plastic, 10% wood, 10% paper	YES	NO	NO
5-10	50% textile, 30% plastic, 10% paper, 10% metal	NO	NO	NO
10-15	40% textile, 30% plastic, 10% paper, 10% metal	NO	NO	NO
15-20	50% plastic, 30% textile, 10% rubber, 10% metal	NO	NO	NO
20-25	40% plastic, 20% textile, 20% wood, 20% metal	NO	NO	NO
25-30	40% plastic, 20% textile, 10% wood, 10% paper, 10% metal, 10% rubber	NO	NO	NO
30-35	50% plastic, 30% wood, 10% textile, 10% metal	NO	NO	NO
35-40	70% plastic, 30% textile	NO	NO	NO
40-45	40% plastic, 20% wood, 20% metal, 10% paper, 10% rubber	NO	NO	NO
45-50	60% plastic, 20% textile, 10% paper, 10% wood	NO	NO	NO
50-55				
55-60				
60-65				
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
95-100				
100-105				
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

DATE: 5/18/2018

NORTHING:	598,963
EASTING:	2,058,781
ELEVATION:	809

BORING LOG					GAS WELL DIAGRAM	
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)		
0-2	NONE	LITTLE	NORMAL	55		
2-5	NONE	LITTLE	NORMAL	60		
5-10	NONE	LITTLE	NORMAL	66		
10-15	NONE	LITTLE	NORMAL	72		
15-20	NONE	LITTLE	NORMAL	76		
20-25	NONE	LITTLE	NORMAL	78		
25-30	NONE	LITTLE	NORMAL	78		
30-35	NONE	SOME	NORMAL	79		
35-40	NONE	MODERATE	NORMAL	80		
40-45	NONE	MODERATE	NORMAL	81		
45-50						
50-55						
55-60						
60-65						
65-70						
70-75						
75-80						
80-85						
85-90						
90-95						
95-100						
100-105						
105-110						
110-115						
115-120						
120-125						
125-130						
130-135						
135-140						

LEGEND

None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated
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MATERIAL LIST

Bore Size (inch):	36"
Bore Depth (ft):	41'
Pipe Size (inch):	6"
Pipe Material:	HDPE
Solid Pipe Above Ground (ft):	3'
Solid Pipe Below Ground (ft):	20'
Perforated Pipe Length (ft):	20'
Cover Depth (ft):	3'
Bentonite Layer Thickness (ft):	2'(x2)
Gravel Pack (ft):	23'
Joint Connections:	Fusion
Pump Installed:	NO
Well Grate Installed:	YES

GAS WELL DIAGRAM

Notes:

BEL REPRESENTATIVE: *Shane K. Whitehouse*

GAS EXTRACTION WELL LOG



WELL ID: EW-359

DATE: 5/18/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,963

BEL PROJECT#: 2018.126

EASTING: 2,058,781

ELEVATION: 809

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	30% dirt, 30% plastic, 20% rubber, 20% paper	YES	NO	NO
5-10	60% plastic, 20% rubber, 20% paper	NO	NO	NO
10-15	60% plastic, 10% rubber, 10% paper, 10% metal, 10% wood	NO	NO	NO
15-20	50% plastic, 30% rubber, 20% paper	NO	NO	NO
20-25	50% plastic, 30% wood, 10% paper, 10% metal	NO	NO	NO
25-30	60% plastic, 10% wood, 10% paper, 10% textile, 10% metal	NO	NO	NO
30-35	50% plastic, 20% textile, 10% wood, 10% paper, 10% metal	NO	NO	NO
35-40	50% plastic, 20% textile, 20% paper, 10% rubber	NO	NO	NO
40-45	60% plastic, 10% rubber, 10% paper, 10% metal, 10% wood	NO	NO	NO
45-50				
50-55				
55-60				
60-65				
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
95-100				
100-105				
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

GAS EXTRACTION WELL LOG



WELL ID: EW-360

DATE: 5/21/2018

PROJECT NAME: Lorain II 2018 Spring GCCS
 BEL PROJECT#: 2018.126

NORTHING: 598,806
 EASTING: 2,058,869
 ELEVATION: 858

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

BORING LOG					GAS WELL DIAGRAM	
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)		
0-2	NONE	LITTLE	NORMAL	50		
2-5	NONE	LITTLE	NORMAL	52		
5-10	NONE	LITTLE	NORMAL	56		
10-15	NONE	LITTLE	NORMAL	60		
15-20	NONE	LITTLE	NORMAL	64		
20-25	NONE	LITTLE	NORMAL	66		
25-30	NONE	LITTLE	NORMAL	72		
30-35	NONE	LITTLE	NORMAL	80		
35-40	NONE	LITTLE	NORMAL	92		
40-45	NONE	LITTLE	NORMAL	88		
45-50	NONE	LITTLE	NORMAL	84		
50-55	NONE	LITTLE	NORMAL	88		
55-60	NONE	LITTLE	NORMAL	88		
60-65	NONE	LITTLE	NORMAL	88		
65-70	NONE	LITTLE	NORMAL	86		
70-75	NONE	LITTLE	NORMAL	88		
75-80	NONE	LITTLE	NORMAL	90		
80-85	NONE	LITTLE	NORMAL	100		
85-90	NONE	LITTLE	NORMAL	104		
90-95	NONE	LITTLE	NORMAL	104		
95-100						
100-105						
105-110						
110-115						
115-120						
120-125						
125-130						
130-135						
135-140						
LEGEND						
	None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated			
MATERIAL LIST						
Bore Size (inch):		36"				
Bore Depth (ft):		95'				
Pipe Size (inch):		6"				
Pipe Material:		HDPE				
Solid Pipe Above Ground (ft):		3'				
Solid Pipe Below Ground (ft):		20'				
Perforated Pipe Length (ft):		74'				
Cover Depth (ft):		3'				
Bentonite Layer Thickness (ft):		2'(x2)				
Gravel Pack (ft):		76'				
Joint Connections:		Fusion				
Pump Installed:		NO				
Well Grate Installed:		YES				
Notes:						

Pipe Size:	6" HDPE	
Existing Ground Surface		
Well Grate		
Cover Soil		
3-foot Foam Plug		
On Site Soil		
Solid Pipe		
3-foot Foam Plug -		
1-ft (min) of Clean Soil		
Geocomposite Ring		
#3 Stone Extends Above Perf / Solid Interface		
Perf Pipe		
Bore Diameter 36 inches		

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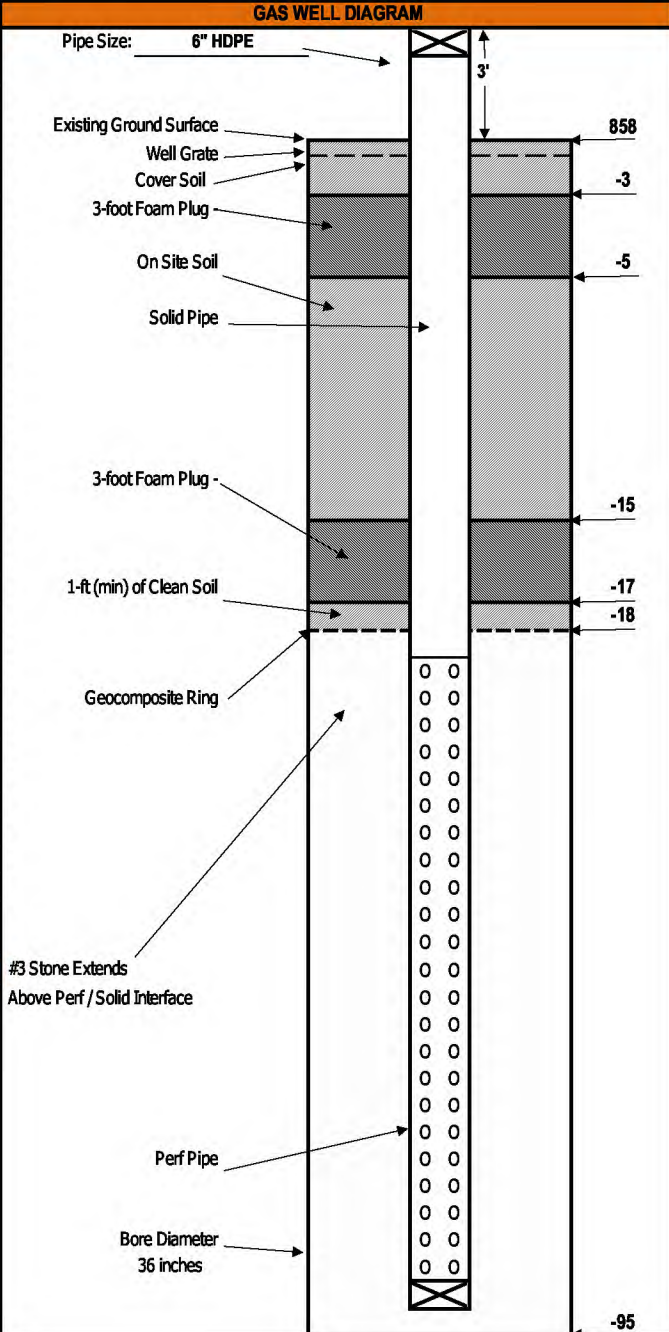
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BEL REPRESENTATIVE: Shane K. Whitehouse

GAS EXTRACTION WELL LOG



WELL ID: EW-360

DATE: 5/21/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,806

BEL PROJECT#: 2018.126

EASTING: 2,058,869

ELEVATION: 858

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	30% dirt, 30% plastic, 30% paper, 10% wood	YES	NO	NO
5-10	40% plastic, 40% paper, 20% textile	NO	NO	NO
10-15	40% plastic, 20% paper, 20% textile, 10% metal, 10% rubber	NO	NO	NO
15-20	50% plastic, 30% textile, 10% metal, 10% paper	NO	NO	NO
20-25	50% plastic, 20% paper, 20% wood, 10% dirt	NO	NO	NO
25-30	50% plastic, 30% paper, 10% textile, 10% wood	NO	NO	NO
30-35	40% plastic, 20% paper, 20% textile, 20% wood	NO	NO	NO
35-40	30% plastic, 30% paper, 20% wood, 10% textile, 10% metal	NO	NO	NO
40-45	40% plastic, 20% wood, 10% metal, 10% paper	NO	NO	NO
45-50	60% plastic, 20% wood, 10% metal, 10% paper	NO	NO	NO
50-55	50% plastic, 40% textile, 10% paper	NO	NO	NO
55-60	50% plastic, 20% wood, 20% textile, 10% metal	NO	NO	NO
60-65	60% plastic, 20% textile, 20% wood	NO	NO	NO
65-70	40% plastic, 20% wood, 20% metal, 20% paper	NO	NO	NO
70-75	50% plastic, 20% wood, 20% textile, 10% paper	NO	NO	NO
75-80	40% plastic, 20% textile, 20% wood, 10% paper	NO	NO	NO
80-85	30% plastic, 30% wood, 30% metal, 10% paper	NO	NO	NO
85-90	30% plastic, 30% wood, 20% metal 10% paper, 10% rubber	NO	NO	NO
90-95	40% plastic, 20% wood, 20% metal, 20% paper	NO	NO	NO
95-100				
100-105				
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

GAS EXTRACTION WELL LOG



WELL ID: EW-361

DATE: 5/24/2018

PROJECT NAME: Lorain II 2018 Spring GCCS
 BEL PROJECT#: 2018.126

NORTHING: 598,640
 EASTING: 2,058,433
 ELEVATION: 880

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

BORING LOG					GAS WELL DIAGRAM	
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)		
0-2	NONE	LITTLE	NORMAL	58		
2-5	NONE	LITTLE	NORMAL	60		
5-10	NONE	LITTLE	NORMAL	64		
10-15	NONE	LITTLE	NORMAL	70		
15-20	NONE	LITTLE	NORMAL	78		
20-25	NONE	LITTLE	NORMAL	86		
25-30	NONE	LITTLE	NORMAL	92		
30-35	NONE	LITTLE	NORMAL	90		
35-40	NONE	LITTLE	NORMAL	88		
40-45	NONE	LITTLE	NORMAL	86		
45-50	NONE	LITTLE	NORMAL	82		
50-55	NONE	SOME	NORMAL	88		
55-60	NONE	SOME	NORMAL	96		
60-65	NONE	SOME	NORMAL	95		
65-70	NONE	SOME	DAMP	94		
70-75	NONE	SOME	DAMP	96		
75-80	NONE	SOME	DAMP	98		
80-85	NONE	MODERATE	DAMP	104		
85-90	NONE	MODERATE	DAMP	110		
90-95	NONE	MUCH	DAMP	108		
95-100	NONE	MUCH	WET	106		
100-105	NONE	MUCH	WET	106		
105-110	NONE	MUCH	WET	104		
110-115	NONE	MUCH	SATURATED	102		
115-120	NONE	MUCH	SATURATED	100		
120-125						
125-130						
130-135						
135-140						
LEGEND						
	None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated			
MATERIAL LIST						
Bore Size (inch):		36"				
Bore Depth (ft):		120'				
Pipe Size (inch):		8"				
Pipe Material:		HDPE				
Solid Pipe Above Ground (ft):		3'				
Solid Pipe Below Ground (ft):		20'				
Perforated Pipe Length (ft):		99'				
Cover Depth (ft):		3'				
Bentonite Layer Thickness (ft):		2'(x2)				
Gravel Pack (ft):		101'				
Joint Connections:		Fusion				
Pump Installed:		NO				
Well Grate Installed:		YES				
Notes:						

Pipe Size: 8" HDPE	
Existing Ground Surface	
Well Grate	
Cover Soil	
3-foot Foam Plug	
On Site Soil	
Solid Pipe	
3-foot Foam Plug	
1-ft (min) of Clean Soil	
Geocomposite Ring	
#3 Stone Extends Above Perf / Solid Interface	
Perf Pipe	
Bore Diameter 36 inches	

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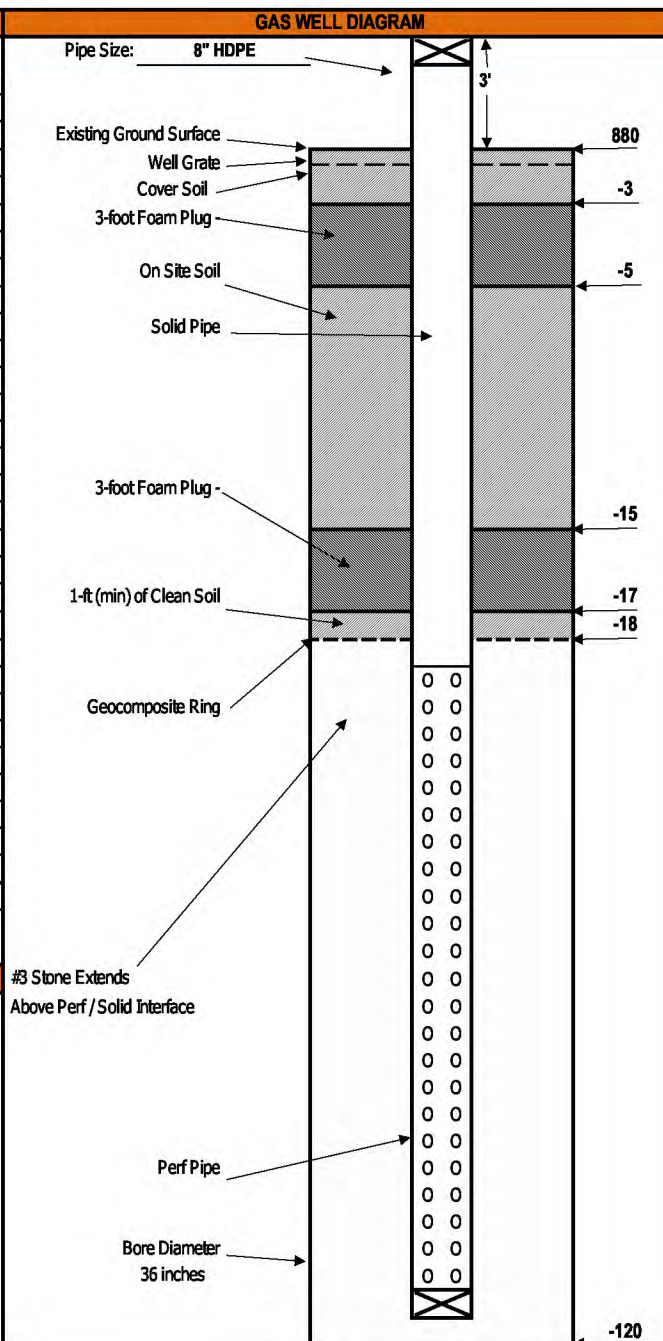
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BEL REPRESENTATIVE: Shane K. Whitehouse

GAS EXTRACTION WELL LOG



WELL ID: EW-361 DATE: 5/24/2018

PROJECT NAME: Lorain II 2018 Spring GCCS NORTHING: 598,640
 BEL PROJECT#: 2018.126 EASTING: 2,058,433
 ELEVATION: 880

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	50% textile, 40% plastic, 10% wood	YES	NO	NO
5-10	50% textile, 40% plastic, 10% metal	NO	NO	NO
10-15	30% plastic, 30% wood, 30% paper, 10% textile	NO	NO	NO
15-20	50% paper, 30% plastic, 10% wood, 10% metal	NO	NO	NO
20-25	50% paper, 30% plastic, 10% wood, 10% rubber	NO	NO	NO
25-30	30% plastic, 20% wood, 20% paper, 10% textile	NO	NO	NO
30-35	40% plastic, 20% wood, 20% textile, 10% paper, 10% metal	NO	NO	NO
35-40	40% plastic, 30% textile, 10% paper, 10% metal, 10% rubber	NO	NO	NO
40-45	50% plastic, 20% wood, 20% paper, 10% textile	NO	NO	NO
45-50	50% plastic, 20% textile, 20% wood, 10% metal	NO	NO	NO
50-55	60% plastic, 10% textile, 10% paper, 10% wood, 10% metal	NO	NO	NO
55-60	70% plastic, 10% paper, 10% wood, 10% metal	NO	NO	NO
60-65	60% plastic, 20% wood, 20% paper	NO	NO	NO
65-70	60% plastic, 30% paper, 10% wood	NO	NO	NO
70-75	50% plastic, 30% textile, 10% paper, 10% wood	NO	NO	NO
75-80	50% plastic, 30% textile, 10% wood, 10% metal	NO	NO	NO
80-85	70% dirt, 20% plastic, 5% wood, 5% paper	YES	NO	YES
85-90	70% plastic, 20% wood, 10% paper	NO	NO	YES
90-95	70% plastic, 20% wood, 10% paper	NO	NO	YES
95-100	60% plastic, 20% textile, 10% paper, 10% metal	NO	NO	YES
100-105	50% plastic, 30% wood, 10% paper, 10% metal	NO	NO	YES
105-110	50% plastic, 30% wood, 20% metal	NO	NO	YES
110-115	60% plastic, 30% wood, 10% metal	NO	NO	YES
115-120	70% rubber, 10% metal, 10% wood, 10% paper	NO	NO	YES
120-125				
125-130				
130-135				
135-140				

GAS EXTRACTION WELL LOG



WELL ID: EW-362

DATE: 5/21/2018

PROJECT NAME: Lorain II 2018 Spring GCCS
 BEL PROJECT#: 2018.126

NORTHING: 598,819
 EASTING: 2,058,619
 ELEVATION: 858

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

BORING LOG					GAS WELL DIAGRAM	
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)		
0-2	NONE	LITTLE	NORMAL	58		
2-5	NONE	LITTLE	NORMAL	62		
5-10	NONE	LITTLE	NORMAL	66		
10-15	NONE	LITTLE	NORMAL	67		
15-20	NONE	LITTLE	NORMAL	69		
20-25	NONE	LITTLE	NORMAL	76		
25-30	NONE	LITTLE	NORMAL	85		
30-35	NONE	LITTLE	NORMAL	92		
35-40	NONE	LITTLE	NORMAL	90		
40-45	NONE	LITTLE	NORMAL	88		
45-50	NONE	LITTLE	NORMAL	94		
50-55	NONE	LITTLE	NORMAL	102		
55-60	NONE	LITTLE	NORMAL	100		
60-65	NONE	SOME	NORMAL	96		
65-70	NONE	SOME	NORMAL	98		
70-75	NONE	SOME	NORMAL	98		
75-80	NONE	SOME	NORMAL	100		
80-85						
85-90						
90-95						
95-100						
100-105						
105-110						
110-115						
115-120						
120-125						
125-130						
130-135						
135-140						
LEGEND						
	None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated			
MATERIAL LIST						
Bore Size (inch):		36"				
Bore Depth (ft):		78'				
Pipe Size (inch):		6'				
Pipe Material:		HDPE				
Solid Pipe Above Ground (ft):		3'				
Solid Pipe Below Ground (ft):		20'				
Perforated Pipe Length (ft):		57'				
Cover Depth (ft):		3'				
Bentonite Layer Thickness (ft):		2'(x2)				
Gravel Pack (ft):		59'				
Joint Connections:		Fusion				
Pump Installed:		NO				
Well Grate Installed:		YES				

Pipe Size: 6" HDPE

Existing Ground Surface

Well Grate

Cover Soil

3-foot Foam Plug

On Site Soil

Solid Pipe

3-foot Foam Plug -

1-ft (min) of Clean Soil

Geocomposite Ring

#3 Stone Extends Above Perf / Solid Interface

Perf Pipe

Bore Diameter 36 inches

3'

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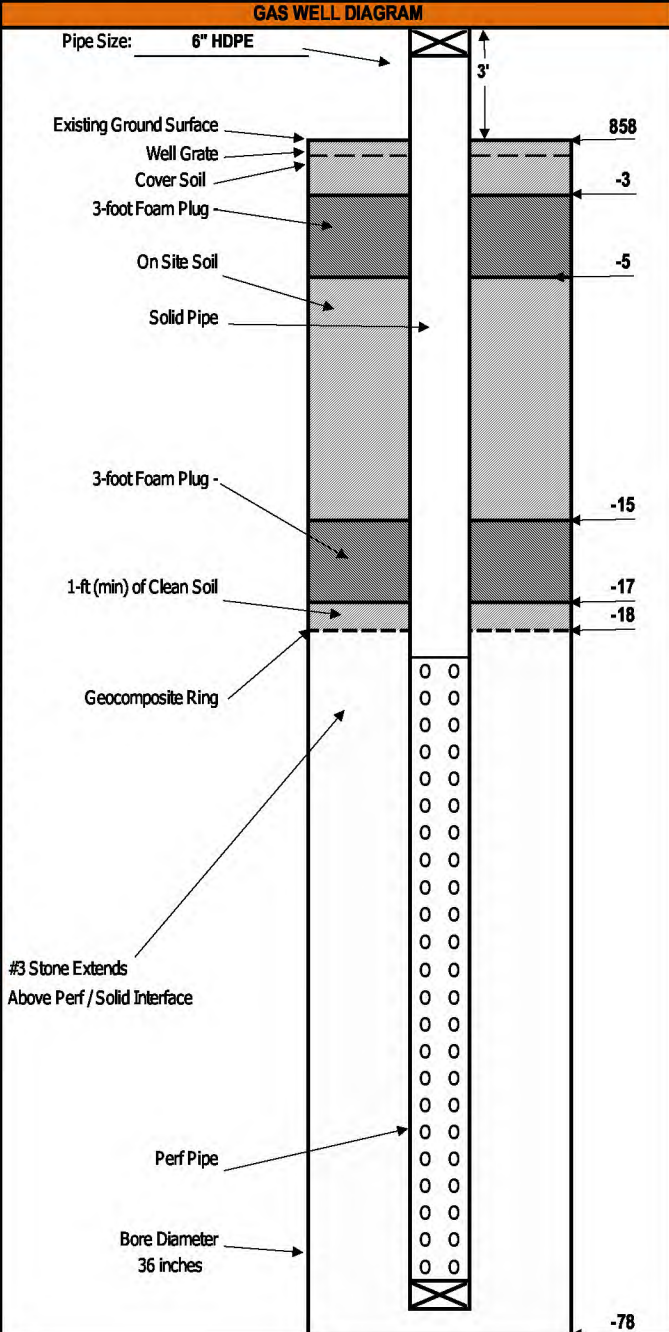
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BEL REPRESENTATIVE: Shane K. Whitehouse

GAS EXTRACTION WELL LOG



WELL ID: EW-362

DATE: 5/21/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,819

BEL PROJECT#: 2018.126

EASTING: 2,058,619

ELEVATION: 858

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	30% plastic, 20% wood, 20% rubber, 20% dirt	YES	NO	NO
5-10	30% plastic, 30% rubber, 20% wood, 20% paper	NO	NO	NO
10-15	40% plastic, 40% rubber, 20% metal	NO	NO	NO
15-20	40% plastic, 30% rubber, 20% metal, 10% wood	NO	NO	NO
20-25	40% plastic, 20% textile, 20% rubber, 10% wood, 10% paper	NO	NO	NO
25-30	50% plastic, 20% rubber, 20% textile, 10% wood	NO	NO	NO
30-35	30% plastic, 30% rubber, 30% textile, 10% metal	NO	NO	NO
35-40	30% plastic, 30% rubber, 30% textile, 10% metal	NO	NO	NO
40-45	30% plastic, 30% rubber, 30% textile, 10% wood	NO	NO	NO
45-50	30% plastic, 30% textile, 20% rubber, 20% wood	NO	NO	NO
50-55	40% plastic, 30% textile, 20% metal, 10% wood	NO	NO	NO
55-60	30% rubber, 20% plastic, 20% wood, 20% metal, 10% organic	NO	NO	NO
60-65	30% plastic, 20% textile, 20% rubber, 10% wood, 10% dirt, 10% metal	NO	NO	NO
65-70	30% plastic, 30% wood, 30% textile, 10% dirt	NO	NO	NO
70-75	50% plastic, 20% textile, 10% paper, 10% wood, 10% metal	NO	NO	NO
75-80	70% plastic, 20% textile, 10% paper	NO	NO	NO
80-85				
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90-95				
95-100				
100-105				
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120-125				
125-130				
130-135				
135-140				

GAS EXTRACTION WELL LOG



WELL ID: EW-363

DATE: 5/23/2018

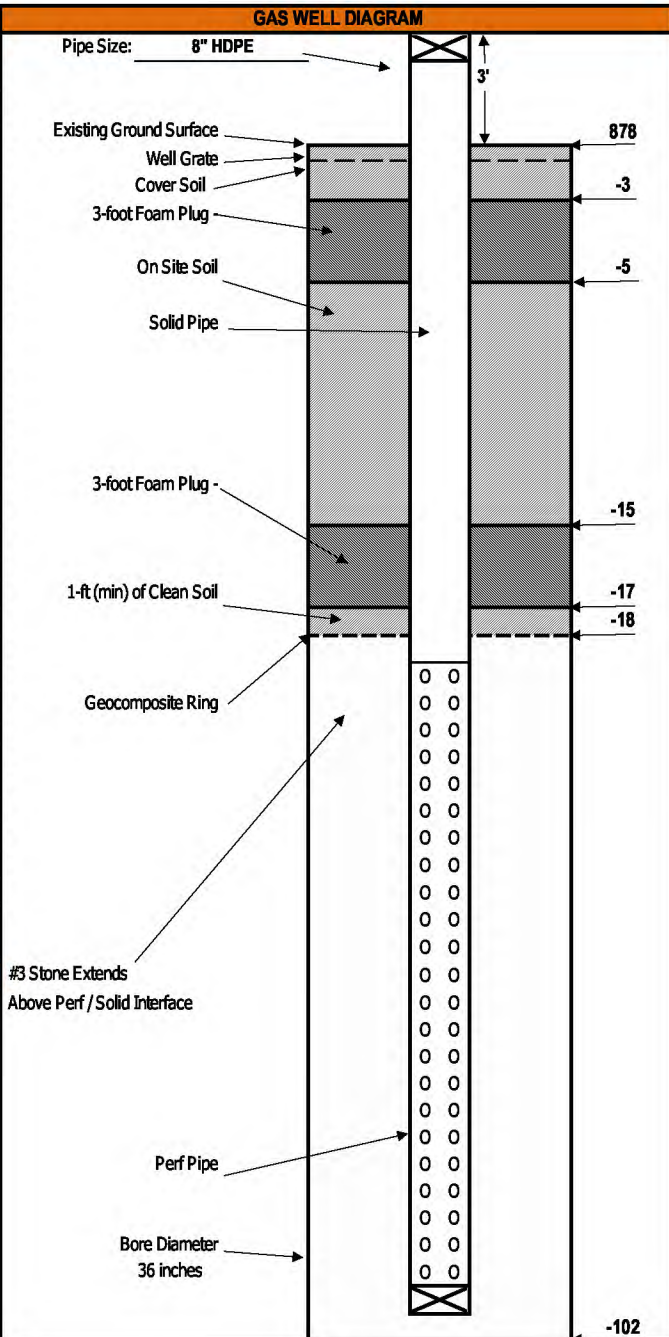
PROJECT NAME: Lorain II 2018 Spring GCCS
 BEL PROJECT#: 2018.126

NORTHING: 598,637
 EASTING: 2,058,639
 ELEVATION: 878

CONTRACTOR/SUPERVISOR: _____

BORING LOG					GAS WELL DIAGRAM		
Depth (FT)	Gas Pressure	Degree of Decomposition	Degree of Moisture	Approx. Temp. (F°)			
0-2	NONE	LITTLE	DAMP	58			
2-5	NONE	LITTLE	NORMAL	64			
5-10	NONE	LITTLE	NORMAL	68			
10-15	NONE	LITTLE	NORMAL	64			
15-20	NONE	LITTLE	NORMAL	58			
20-25	NONE	LITTLE	NORMAL	60			
25-30	NONE	LITTLE	NORMAL	64			
30-35	NONE	LITTLE	NORMAL	66			
35-40	NONE	LITTLE	NORMAL	70			
40-45	NONE	LITTLE	NORMAL	72			
45-50	NONE	LITTLE	NORMAL	84			
50-55	NONE	SOME	NORMAL	88			
55-60	NONE	SOME	NORMAL	94			
60-65	NONE	SOME	NORMAL	96			
65-70	NONE	SOME	NORMAL	98			
70-75	NONE	MODERATE	NORMAL	96			
75-80	NONE	MODERATE	NORMAL	94			
80-85	NONE	MODERATE	NORMAL	94			
85-90	NONE	MODERATE	NORMAL	92			
90-95	NONE	MODERATE	DAMP	92			
95-100	NONE	MODERATE	DAMP	90			
100-105	NONE	MUCH	WET	90			
105-110							
110-115							
115-120							
120-125							
125-130							
130-135							
135-140							
LEGEND							
	None, Minor, Moderate, Much, Excessive	Little, Some, Moderate, Much, Severe	Dry, Normal, Damp, Wet, Saturated				
MATERIAL LIST							
Bore Size (inch):		36"					
Bore Depth (ft):		102'					
Pipe Size (inch):		8"					
Pipe Material:		HDPE					
Solid Pipe Above Ground (ft):		3'					
Solid Pipe Below Ground (ft):		20'					
Perforated Pipe Length (ft):		81'					
Cover Depth (ft):		3'					
Bentonite Layer Thickness (ft):		2'(x2)					
Gravel Pack (ft):		83'					
Joint Connections:		Fusion					
Pump Installed:		NO					
Well Grate Installed:		YES					
Notes:							

Pipe Size: 8" HDPE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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BEL REPRESENTATIVE: Shane K. Whitehouse

GAS EXTRACTION WELL LOG



WELL ID: EW-363

DATE: 5/23/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,637

BEL PROJECT#: 2018.126

EASTING: 2,058,639

ELEVATION: 878

CONTRACTOR/SUPERVISOR: _____

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	30% plastic, 20% textile, 20% paper, 20% dirt, 10% wood	YES	NO	NO
5-10	30% plastic, 30% textile, 30% paper, 10% metal	NO	NO	NO
10-15	30% plastic, 30% textile, 30% dirt, 10% metal	NO	NO	NO
15-20	30% dirt, 30% plastic, 30% textile, 10% rubber	NO	NO	NO
20-25	50% plastic, 20% textile, 20% paper, 10% paper	NO	NO	NO
25-30	40% plastic, 20% textile, 30% metal, 10% wood	NO	NO	NO
30-35	50% plastic, 40% paper, 10% metal	NO	NO	NO
35-40	50% plastic, 20% paper, 20% textile, 10% wood	NO	NO	NO
40-45	50% plastic, 20% paper, 20% textile, 10% wood	NO	NO	NO
45-50	60% plastic, 30% paper, 10% textile	NO	NO	NO
50-55	50% plastic, 30% textile, 10% paper, 10% metal	NO	NO	NO
55-60	40% plastic, 30% textile, 20% paper, 10% metal	NO	NO	NO
60-65	40% plastic, 20% textile, 20% paper, 10% wood, 10% metal	NO	NO	NO
65-70	60% plastic, 20% textile, 10% paper, 10% metal	NO	NO	NO
70-75	50% plastic, 20% textile, 20% paper, 10% metal	NO	NO	NO
75-80	50% plastic, 20% wood, 10% rubber, 10% paper, 10% metal	NO	NO	NO
80-85	60% plastic, 20% wood, 10% paper, 10% metal	NO	NO	NO
85-90	40% plastic, 40% textile, 20% rubber	NO	NO	NO
90-95	40% plastic, 20% wood, 20% rubber, 10% paper, 10% metal	NO	NO	NO
95-100	40% plastic, 20% wood, 20% rubber, 10% paper, 10% metal	NO	NO	NO
100-105	30% plastic, 30% textile, 20% wood, 10% paper, 10% brick	NO	NO	NO
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

DATE: 5/18/2018

NORTHING:	598,936
EASTING:	2,058,578
ELEVATION:	822

AEG/C. Johnson

BEL REPRESENTATIVE: *Shane K. Whitehouse*

GAS EXTRACTION WELL LOG



WELL ID: EW-364

DATE: 5/18/2018

PROJECT NAME: Lorain II 2018 Spring GCCS

NORTHING: 598,936

BEL PROJECT#: 2018.126

EASTING: 2,058,578

ELEVATION: 822

CONTRACTOR/SUPERVISOR: AEG/C. Johnson

WASTE DESCRIPTION				
Depth (FT)	Waste Makeup by Percentage	Distinct Layers	Unusual Odor/Color	Sludge and or Liquids
0-2	100% dirt	NO	NO	NO
2-5	50% dirt, 30% plastic, 20% wood	YES	NO	NO
5-10	30% plastic, 30% wood, 30% paper, 10% metal	NO	NO	NO
10-15	40% plastic, 20% wood, 20% metal, 20% paper	NO	NO	NO
15-20	50% plastic, 20% textile, 20% paper, 10% wood	NO	NO	NO
20-25	60% plastic, 10% wood, 10% metal, 10% paper, 10% rubber	NO	NO	NO
25-30	40% plastic, 20% wood, 20% rubber, 10% metal	NO	NO	NO
30-35	50% plastic, 20% textile, 20% metal, 10% paper	NO	NO	NO
35-40	60% plastic, 10% wood, 10% metal, 10% rubber, 10% glass	NO	NO	NO
40-45	80% paper, 10% plastic, 10% wood	NO	NO	NO
45-50				
50-55				
55-60				
60-65				
65-70				
70-75				
75-80				
80-85				
85-90				
90-95				
95-100				
100-105				
105-110				
110-115				
115-120				
120-125				
125-130				
130-135				
135-140				

APPENDIX B

LFG CONVEYANCE PIPING AIR PRESSURE TESTING RESULTS

BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 6/25/2018
 Project No: 2018.126 BEL Representative: Shane Whitehouse
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	130	ADJ. TO TRENCH
Station/Additional Info:		EW-158R2 --> EW-48R2		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	17	10	10	0%
10	17	10	10	0%
20	17	10	10	0%
30	17	10	10	0%
40	17	10	10	0%
50	17	10	10	0%
60	17	10	10	0%

Time Start: 1015
 Time End: 1115
 Pi: 10 Ti (Celsius): 17
 Result: ☒ Pass ☐ Fail
 Yes ☐ No ☐
 Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
Station/Additional Info:				
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0				
10				
20				
30				
40				
50				
60				

Time Start: _____
 Time End: _____
 Pi: _____ Ti (Celsius): _____
 Result: ☐ Pass ☐ Fail
 Yes ☐ No ☐
 Retest: ☐ ☐

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
Station/Additional Info:				
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0				
10				
20				
30				
40				
50				
60				

Time Start: _____
 Time End: _____
 Pi: _____ Ti (Celsius): _____
 Result: ☐ Pass ☐ Fail
 Yes ☐ No ☐
 Retest: ☐ ☐

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

BEL Representative: Shane Whitehouse

PI = Initial Test Pressure
 TI = Initial Temperature
 t = Time in minutes from initiation of test
 Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"

***Note* Air and Condensate lines to be tested at 100 psig, header/laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise**

Tt = Temperature in Celsius @ Time "t"
 Pt = Test Pressure in psig @ Time "t"
 $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$
 $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$

BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 6/28/2018
 Project No: 2018.126 BEL Representative: Shane Whitehouse
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	65	ADJ. TO TRENCH
Station/Additional Info:		EW-307R2 --> EW-307R3		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	22	10	10	0%
10	22	10	10	0%
20	22	10	10	0%
30	22	10	10	0%
40	22	10	10	0%
50	22	10	10	0%
60	22	10	10	0%

Time Start: 930

Time End: 1030

Pi: 10 Ti (Celsius): 22

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	65	ADJ. TO TRENCH
Station/Additional Info:		EW-307R2 --> EW-307R3		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	22	100	100	0%
10	22	100	100	0%
20	22	100	100	0%
30	22	100	100	0%
40	22	100	100	0%
50	22	100	100	0%
60	22	100	100	0%

Time Start: 930

Time End: 1030

Pi: 100 Ti (Celsius): 22

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	65	ADJ. TO TRENCH
Station/Additional Info:		EW-307R2 --> EW-307R3		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	22	100	100	0%
10	22	100	100	0%
20	22	100	100	0%
30	22	100	100	0%
40	22	100	100	0%
50	22	100	100	0%
60	22	100	100	0%

Time Start: 930

Time End: 1030

Pi: 100 Ti (Celsius): 22

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

BEL Representative: Shane Whitehouse

PI = Initial Test Pressure TI = Initial Temperature t = Time in minutes from initiation of test Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"	*Note Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise	Tt = Temperature in Celsius @ Time "t" Pt = Test Pressure in psig @ Time "t" $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$ % Drop = $((Pc - PI) / Pc) * 100$
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BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 6/29/2018
 Project No: 2018.126 BEL Representative: Janet Todia
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	130	ADJ. TO TRENCH
Station/Additional Info:		EW-348 --> 12" TIE-IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	31	10	10	0%
10	31	10	10	0%
20	31	10	10	0%
30	31	10	10	0%
40	31	10	10	0%
50	31	10	10	0%
60	31	10	10	0%
Time Start: <u>1220</u> Time End: <u>1320</u> Pi: <u>10</u> Ti (Celsius): <u>31</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☒ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA				

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	130	ADJ. TO TRENCH
Station/Additional Info:		EW-348 --> 12" TIE-IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	31	100	100	0%
10	31	100	100	0%
20	31	100	100	0%
30	31	100	100	0%
40	31	100	100	0%
50	31	100	100	0%
60	31	100	100	0%
Time Start: <u>1220</u> Time End: <u>1320</u> Pi: <u>100</u> Ti (Celsius): <u>31</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☒ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA				

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	130	ADJ. TO TRENCH
Station/Additional Info:		EW-348 --> 12" TIE-IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	31	100	100	0%
10	31	100	100	0%
20	31	100	100	0%
30	31	100	100	0%
40	31	100	100	0%
50	31	100	100	0%
60	31	100	100	0%
Time Start: <u>1220</u> Time End: <u>1320</u> Pi: <u>100</u> Ti (Celsius): <u>31</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☒ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA				

BEL Representative: Janet Todia

PI = Initial Test Pressure
TI = Initial Temperature
t = Time in minutes from initiation of test
Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"
***Note** Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise
Tt = Temperature in Celsius @ Time "t"
Pt = Test Pressure in psig @ Time "t"
 $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$
 $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$

BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/2/2018
 Project No: 2018.126 BEL Representative: Janet Todia
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	285	ADJ. TO TRENCH
Station/Additional Info:		EW-340R --> EW-348		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	32	10	10	0%
10	32	10	10	0%
20	32	10	10	0%
30	32	10	10	0%
40	32	10	10	0%
50	32	10	10	0%
60	32	10	10	0%
Time Start: <u>1247</u> Time End: <u>1347</u> Pi: <u>10</u> Ti (Celsius): <u>32</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☐ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	285	ADJ. TO TRENCH
Station/Additional Info:		EW-340R --> EW-348		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	32	100	100	0%
10	32	100	100	0%
20	32	100	100	0%
30	32	100	100	0%
40	32	100	100	0%
50	32	100	100	0%
60	32	100	100	0%
Time Start: <u>1247</u> Time End: <u>1347</u> Pi: <u>100</u> Ti (Celsius): <u>32</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☐ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	285	ADJ. TO TRENCH
Station/Additional Info:		EW-340R --> EW-348		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	32	100	100	0%
10	32	100	100	0%
20	32	100	100	0%
30	32	100	100	0%
40	32	100	100	0%
50	32	100	100	0%
60	32	100	100	0%
Time Start: <u>1247</u> Time End: <u>1347</u> Pi: <u>100</u> Ti (Celsius): <u>32</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☐ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

BEL Representative: Janet Todia

PI = Initial Test Pressure TI = Initial Temperature t = Time in minutes from initiation of test Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"	*Note* Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise	Tt = Temperature in Celsius @ Time "t" Pt = Test Pressure in psig @ Time "t" $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$ $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$
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BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/6/2018
 Project No: 2018.126 BEL Representative: Janet Todia
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	345	ADJ. TO TRENCH
Station/Additional Info:		EW-363 --> EW-362 --> EW-364		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	33	10	10	0%
10	33	10	10	0%
20	33	10	10	0%
30	33	10	10	0%
40	33	10	10	0%
50	33	10	10	0%
60	33	10	10	0%
Time Start: <u>1235</u> Time End: <u>1335</u> Pi: <u>10</u> Ti (Celsius): <u>33</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☐ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	345	ADJ. TO TRENCH
Station/Additional Info:		EW-363 --> EW-362 --> EW-364		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	33	100	100	0%
10	33	100	100	0%
20	33	100	100	0%
30	33	100	100	0%
40	33	100	100	0%
50	33	100	100	0%
60	33	100	100	0%
Time Start: <u>1235</u> Time End: <u>1335</u> Pi: <u>100</u> Ti (Celsius): <u>33</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☐ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	345	ADJ. TO TRENCH
Station/Additional Info:		EW-363 --> EW-362 --> EW-364		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	33	100	100	0%
10	33	100	100	0%
20	33	100	100	0%
30	33	100	100	0%
40	33	100	100	0%
50	33	100	100	0%
60	33	100	100	0%
Time Start: <u>1235</u> Time End: <u>1335</u> Pi: <u>100</u> Ti (Celsius): <u>33</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☐ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

BEL Representative: Janet Todia

PI = Initial Test Pressure TI = Initial Temperature t = Time in minutes from initiation of test Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"	*Note* Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise	Tt = Temperature in Celsius @ Time "t" Pt = Test Pressure in psig @ Time "t" $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$ $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$
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BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/10/2018
 Project No: 2018.126 BEL Representative: Jake Cornelius
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	126	ADJ. TO TRENCH
Station/Additional Info:		EW-305R --> 24" TIE-IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	24	100	100	0%
10	24	100	100	0%
20	24	100	100	0%
30	25	100	100	0%
40	26	101	100	0%
50	26	101	100	0%
60	26	101	100	0%
Time Start: <u>920</u> Time End: <u>1020</u> Pi: <u>100</u> Ti (Celsius): <u>24</u> Result: ☒ Pass ☐ Fail Yes ☐ No Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	126	ADJ. TO TRENCH
Station/Additional Info:		EW-305R --> 24" TIE-IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	100	100	0%
10	26	100	100	0%
20	26	100	100	0%
30	26	100	100	0%
40	26	100	100	0%
50	27	101	100	0%
60	27	101	100	0%
Time Start: <u>1000</u> Time End: <u>1100</u> Pi: <u>100</u> Ti (Celsius): <u>26</u> Result: ☒ Pass ☐ Fail Yes ☐ No Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
Station/Additional Info:				
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0				
10				
20				
30				
40				
50				
60				
Time Start: _____ Time End: _____ Pi: _____ Ti (Celsius): _____ Result: ☒ Pass ☐ Fail Yes ☐ No Retest: ☐ ☐				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

BEL Representative: Robert J. Cornelius

PI = Initial Test Pressure
TI = Initial Temperature
t = Time in minutes from initiation of test
Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"
***Note** Air and Condensate lines to be tested at 100 psig, header/laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise
Tt = Temperature in Celsius @ Time "t"
Pt = Test Pressure in psig @ Time "t"
 $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$
 $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$

BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/11/2018
 Project No: 2018.126 BEL Representative: Jake Cornelius
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	45	ADJ. TO TRENCH
Station/Additional Info:		EW-301R3 --> EW-301R2		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	19	100	100	0%
10	19	100	100	0%
20	19	100	100	0%
30	20	100	100	0%
40	20	100	100	0%
50	21	101	100	0%
60	21	101	100	0%

Time Start: 745

Time End: 845

Pi: 100 Ti (Celsius): 19

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	45	ADJ. TO TRENCH
Station/Additional Info:		EW-301R3 --> EW-301R2		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	19	100	100	0%
10	19	100	100	0%
20	19	100	100	0%
30	20	100	100	0%
40	20	100	100	0%
50	21	101	100	0%
60	21	101	100	0%

Time Start: 745

Time End: 845

Pi: 100 Ti (Celsius): 19

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	45	ADJ. TO TRENCH
Station/Additional Info:		EW-301R3 --> EW-301R2		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	19	10	10	0%
10	19	10	10	0%
20	19	10	10	0%
30	20	10	10	0%
40	20	10	10	0%
50	21	10	10	0%
60	21	10	10	0%

Time Start: 745

Time End: 845

Pi: 10 Ti (Celsius): 19

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

BEL Representative: Robert J. Cornelius

PI = Initial Test Pressure
 TI = Initial Temperature
 t = Time in minutes from initiation of test
 Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"

***Note* Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise**

Tt = Temperature in Celsius @ Time "t"
 Pt = Test Pressure in psig @ Time "t"
 $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$
 $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$

BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/11/2018
 Project No: 2018.126 BEL Representative: Jake Cornelius
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	96	ADJ. TO TRENCH
Station/Additional Info:		EW-155R REMOTE LATERAL LINE		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	23	10	10	0%
10	23	10	10	0%
20	23	10	10	0%
30	24	10	10	0%
40	24	10	10	0%
50	27	11	10	0%
60	27	11	10	0%
Time Start: <u>1050</u> Time End: <u>1150</u> Pi: <u>10</u> Ti (Celsius): <u>23</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☒ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	46	ADJ. TO TRENCH
Station/Additional Info:		EW-159R --> EW-159		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	100	100	0%
10	26	100	100	0%
20	26	100	100	0%
30	26	100	100	0%
40	26	100	100	0%
50	26	100	100	0%
60	26	100	100	0%
Time Start: <u>1330</u> Time End: <u>1430</u> Pi: <u>100</u> Ti (Celsius): <u>26</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☒ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	46	ADJ. TO TRENCH
Station/Additional Info:		EW-159R --> EW-159		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	100	100	0%
10	26	100	100	0%
20	26	100	100	0%
30	26	100	100	0%
40	26	100	100	0%
50	26	100	100	0%
60	26	100	100	0%
Time Start: <u>1330</u> Time End: <u>1430</u> Pi: <u>100</u> Ti (Celsius): <u>26</u> Result: ☒ Pass ☐ Fail Yes ☐ No ☒ Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

BEL Representative: Robert J. Cornelius

PI = Initial Test Pressure TI = Initial Temperature t = Time in minutes from initiation of test Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"	*Note* Air and Condensate lines to be tested at 100 psig, header/laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise	Tt = Temperature in Celsius @ Time "t" Pt = Test Pressure in psig @ Time "t" $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$ $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$
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BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/11/2018
 Project No: 2018.126 BEL Representative: Jake Cornelius
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	46	ADJ. TO TRENCH
Station/Additional Info:		EW-159R --> EW-159		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	10	10	0%
10	26	10	10	0%
20	26	10	10	0%
30	26	10	10	0%
40	26	10	10	0%
50	26	11	10	0%
60	26	11	10	0%
Time Start: <u>1330</u> Time End: <u>1430</u> Pi: <u>10</u> Ti (Celsius): <u>26</u> Result: ☒ Pass ☐ Fail Yes ☐ No Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	52	ADJ. TO TRENCH
Station/Additional Info:		EW-160R --> EW-160		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	100	100	0%
10	26	100	100	0%
20	26	100	100	0%
30	26	100	100	0%
40	26	100	100	0%
50	26	100	100	0%
60	26	100	100	0%
Time Start: <u>1345</u> Time End: <u>1445</u> Pi: <u>100</u> Ti (Celsius): <u>26</u> Result: ☒ Pass ☐ Fail Yes ☐ No Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	52	ADJ. TO TRENCH
Station/Additional Info:		EW-160R --> EW-160		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	100	100	0%
10	26	100	100	0%
20	26	100	100	0%
30	26	100	100	0%
40	26	100	100	0%
50	26	100	100	0%
60	26	100	100	0%
Time Start: <u>1335</u> Time End: <u>1435</u> Pi: <u>100</u> Ti (Celsius): <u>26</u> Result: ☒ Pass ☐ Fail Yes ☐ No Retest: ☐ ☒				
Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable:				NA

BEL Representative: Robert J. Cornelius

PI = Initial Test Pressure TI = Initial Temperature t = Time in minutes from initiation of test Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"	*Note* Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise	Tt = Temperature in Celsius @ Time "t" Pt = Test Pressure in psig @ Time "t" $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$ $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$
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BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/11/2018
 Project No: 2018.126 BEL Representative: Jake Cornelius
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	52	ADJ. TO TRENCH
Station/Additional Info:		EW-160R --> EW-160		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	26	10	10	0%
10	26	10	10	0%
20	26	10	10	0%
30	26	10	10	0%
40	26	10	10	0%
50	26	11	10	0%
60	26	11	10	0%

Time Start: 1345

Time End: 1445

Pi: 10 Ti (Celsius): 26

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
Station/Additional Info:				
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0				
10				
20				
30				
40				
50				
60				

Time Start: _____

Time End: _____

Pi: _____ Ti (Celsius): _____

Result: ☐ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☐

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
Station/Additional Info:				
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0				
10				
20				
30				
40				
50				
60				

Time Start: _____

Time End: _____

Pi: _____ Ti (Celsius): _____

Result: ☐ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☐

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

BEL Representative: Robert J. Cornelius

PI = Initial Test Pressure
 TI = Initial Temperature
 t = Time in minutes from initiation of test
 Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"

***Note* Air and Condensate lines to be tested at 100 psig, header/laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise**

Tt = Temperature in Celsius @ Time "t"
 Pt = Test Pressure in psig @ Time "t"
 $Pc = (((PI + 14.7)(Tt + 273)) / (TI + 273)) - 14.7$
 $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$

BEL Pipe Pressure Test Report



Project Name: Lorain II Landfill - Phase IGCCS Expansion Date: 7/12/2018
 Project No: 2018.126 BEL Representative: Jake Cornelius
 Contractor: American Environmental Group, LTD.

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
6	17	HDPE	46	ADJ. TO TRENCH
Station/Additional Info:		EW-34R3 --> TIE IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	27	10	10	0%
10	27	10	10	0%
20	27	10	10	0%
30	27	10	10	0%
40	27	10	10	0%
50	27	11	10	0%
60	27	11	10	0%

Time Start: 1430

Time End: 1530

Pi: 10 Ti (Celsius): 27

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
2	9	HDPE	50	ADJ. TO TRENCH
Station/Additional Info:		EW-34R3 --> TIE IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	27	100	100	0%
10	27	100	100	0%
20	27	100	100	0%
30	27	100	100	0%
40	27	100	100	0%
50	27	100	100	0%
60	27	100	100	0%

Time Start: 1430

Time End: 1530

Pi: 100 Ti (Celsius): 27

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

Pipe Dia.	SDR	Material	Overall Segment Length (ft)	Location of Test Segment
3	11	HDPE	50	ADJ. TO TRENCH
Station/Additional Info:		EW-34R3 --> TIE IN POINT		
Time (min.)	Tt (Celsius)	Pt (psig)	Pc (psig)	% Drop
0	27	100	100	0%
10	27	100	100	0%
20	27	100	100	0%
30	27	100	100	0%
40	27	100	100	0%
50	27	100	100	0%
60	27	100	100	0%

Time Start: 1430

Time End: 1530

Pi: 100 Ti (Celsius): 27

Result: ☒ Pass ☐ Fail

Yes ☐ No ☐

Retest: ☐ ☒

Description/Nature of Leak or Repairs of Tested / Retested Segment, if applicable: NA

BEL Representative: Robert J. Cornelius

PI = Initial Test Pressure
 TI = Initial Temperature
 t = Time in minutes from initiation of test
 Pc = Initial Pressure in psig corrected for Temperature (TI) @ TI "t"

***Note* Air and Condensate lines to be tested at 100 psig, header laterals @ 10 psig & outer containment piping at 50 psig for 1 hour unless permit or regulations require otherwise**

Tt = Temperature in Celsius @ Time "t"
 Pt = Test Pressure in psig @ Time "t"
 $Pc = ((PI + 14.7)(Tt + 273)) / (TI + 273) - 14.7$
 $\% \text{ Drop} = ((Pc - PI) / Pc) * 100$

APPENDIX C
PHOTOGRAPHIC DOCUMENTATION

LORAIN COUNTY II LANDFILL

2018 PHASE I LFG EXPANSION

OBERLIN, OH



Photo # 1

AEG ensuring that heating plates reach correct temperature before fusion of HDPE materials.



Photo # 2

Example of a typical HDPE butt fusion made during the 2018 LFG Expansion.

Photo # 3

AEG performing bore on a LFG extraction well ensuring odor neutralizing pellets are placed while boring and ensuring waste is kept to a minimum.



LORAIN COUNTY II LANDFILL

2018 PHASE I LFG EXPANSION

OBERLIN, OH



Photo # 4

AEG setting a well casing in bore.



Photo # 5

AEG slowly placing washed #3 stone in bore annulus.



Photo # 6

AEG installing a geo-ring to separate stone layer from bentonite and dirt layers.



LORAIN COUNTY II LANDFILL

2018 PHASE I LFG EXPANSION

OBERLIN, OH



Photo # 7

AEG preparing a hydrated bentonite plug for installation in well bore.



Photo # 8

AEG installing a hydrated bentonite plug in bore annulus.

Photo # 9

AEG completing a well bore with safety grate in temporary position before final install and dress-up.



LORAIN COUNTY II LANDFILL

2018 PHASE I LFG EXPANSION

OBERLIN, OH



Photo # 10

A typical trench performed during the 2018 LFG Phase I Expansion.



Photo # 11

A typical example of conveyance piping being placed in trench prior to tie-in to active system.

Photo # 12

All 2018 LFG Expansion well casing abandonments utilized a bentonite plug around the location of the abandonment.



LORAIN COUNTY II LANDFILL

2018 PHASE I LFG EXPANSION

OBERLIN, OH



Photo # 13

AEG trenching and installing above grade header line below grade.



Photo # 14

AEG lowering above grade header connection below grade.

Photo # 15

AEG performing backfill and dress-up of worked upon areas.



APPENDIX D
BEL DAILY FIELD REPORTS

Project No.: 2016.126
Date: 5/18/18
Report No.: 1



BEL Daily Field Report

Site Name: Corain Page: 1 of 1
Project Name/Location: Corain II 2018 Spring GCLLS
Contractor/ Personnel: American Environmental Group, LTD. /
Visitors: Janet Tadie (BEL) Anthony Vunilburg (AEG)
Weather: AM OC PM OC OC - Overcast MC - Mostly Cloudy
Temperature (°F): AM 64 PM 78 CL - Clear PC - Partly Cloudy

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

Today's SOW: 0600 Skw on-site AEG prepares for
days work / awaits for signed well schedule
0700 AEG continues to wait
0815 AEG begins drilling well EW-359
0930 Janet Tadie on-site, AEG continues to drill
1000 AEG finishes boring at 41' at well EW-359
1030 AEG sets well casing
1100 AEG begins boring well EW-364
1230 AEG finishes boring well EW-364 @ 42'
Anthony Vunilburg on-site
1300 AEG begins boring well EW-355R
AEG completes well EW-354, Janet Tadie
off-site

Contractor Equipment (QTY) / Sketch

6 loads of waste

1400 AEG continues to bore well EW-355R, AEG sets well casing to EW-364
1500 AEG completes boring well EW-355R
1545 AEG sets casing to well EW-355R
1715 AEG completes well EW-364
1815 AEG completes well EW-355R
1830 Skw & AEG discuss tomorrow's scope of work
1845 Skw off-site AEG will be working on repairs

X/ no paper work

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0600</u>	<u>0530</u>
Off-site:	<u>1845</u>	<u>2030</u>
Add. Hours:	<u>1</u>	<u>2030</u>
Total:	<u>13.75</u>	<u>15</u>

*If additional hours off-site provide description in field activities.

BEL Representative:

Project No.: 2018-126
 Date: 5/21/18
 Report No.: 2



BEL Daily Field Report

Site Name: Corbin Page: 1 of 1
 Project Name/Location: Corbin II 2018 Spring GCLLS
 Contractor/ Personnel: American Environmental Group, LTD. /
 Visitors: _____

Weather: AM PL PM PL
 Temperature (°F): AM 52 PM 81

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW: 0600 SKW on-site, AEG on-site

AEG prepares for day's work
0645 AEG begins drilling EW-360
0800 AEG continues to drill EW-360
0900 AEG continues to drill
1000 AEG continues to drill
1045 AEG reaches maximum depth of 95' on
well EW-360
1100 AEG begins to drill well EW-362
1200 AEG continues to drill, AEG completes
well EW-360
1300 AEG continues to drill
1345 AEG finishes drilling well EW-362 @ 78'
1500 AEG works to complete well EW-362
1545 AEG completes well EW-362
1600 AEG covers waste in its designated area
1700 AEG continues to cover waste
1800 AEG finishes covering waste, SKW off-site, AEG off-site

Contractor Equipment (QTY) / Sketch

6 loads of waste

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0600</u>	<u>0600</u>
Off-site:	<u>1800</u>	<u>1800</u>
Add. Hours:	<u>—</u>	<u>—</u>
Total:	<u>12</u>	<u>12</u>

*If additional hours off-site provide description in field activities.

BEL Representative:

Project No.: 2018.126
Date: 5/23/18
Report No.: 3



BEL Daily Field Report

Site Name: Lorain Page: 1 of 1
Project Name/Location: Lorain to 2018 Spring 1600S
Contractor/ Personnel: American Environmental Group, LTD. /
Visitors: _____

Weather: AM PC PM CL
Temperature (°F): AM 64 PM 70

OC - Overcast MC - Mostly Cloudy
CL - Clear PC - Partly Cloudy

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

Today's SOW: 0630 Skid on-site. AEG prepares for
days work

0700 AEG begins to drill well EW-363

0800 AEG continues to drill

0900 AEG continues to drill

1000 AEG continues to drill

1100 AEG continues to drill

1200 AEG continues to drill

1300 AEG completes drilling well EW-363 @ 132'

AEG begins to install well casing

1415 AEG completes well EW-363

1445 AEG begins covering spoils

1545 AEG finishes covering spoils, skid off-site.

Contractor Equipment (QTY) / Sketch

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0630</u>	<u>0600</u>
Off-site:	<u>1545</u>	<u>1600</u>
Add. Hours:	<u>-</u>	<u>-</u>
Total:	<u>9.25</u>	<u>10</u>

*If additional hours off-site provide description in field activities.

BEL Representative: _____

Project No.: 2018.126
 Date: 5/24/18
 Report No.: 4



BEL Daily Field Report

Site Name: Lorain Page: 1 of 1
 Project Name/Location: Lorain TI 208 Spring C-CL5
 Contractor/ Personnel: American Environmental Group, LTD. /
 Visitors: -

Weather: AM PC PM CL
 Temperature (°F): AM 64 PM 84

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW: 0630 SOW on-site
0730 AEG begins drilling well BW-361
0900 AEG continues to drill
1000 AEG continues to drill
1100 AEG continues to drill
1200 AEG continues to drill
1300 AEG continues to drill
1330 AEG completes boring well BW-361
1415 AEG completes well BW-361
1445 SOW off-site AEG will prep for
well BW-301R3.

Contractor Equipment (QTY) / Sketch

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0630</u>	<u>0600</u>
Off-site:	<u>1445</u>	<u>-</u>
Add. Hours:	<u>-</u>	<u>-</u>
Total:	<u>8.25</u>	<u>-</u>

*If additional hours off-site provide description in field activities.

BEL Representative: [Signature]

Project No.: 2018.126
Date: 5/25/18
Report No.: 5



BEL Daily Field Report

Site Name: Loxam Page: 1 of 1
Project Name/Location: Loxam #1 2018 Spring GCLIS
Contractor/ Personnel: American Environmental Group, LTD. /
Visitors: _____

Weather: AM CL PM _____
Temperature (°F): AM 60 PM _____

OC - Overcast MC - Mostly Cloudy

CL - Clear PC - Partly Cloudy

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

Today's SOW: 0630 SKW on-site, AEG prepares for
days work

0700 AEG begins drilling well BW-301R3

0800 AEG continues to drill

0900 AEG continues to drill

1000 AEG continues to drill

1045 AEG finishes drilling well BW-301R3

1100 AEG sets well casing & clean up of spoils

1200 AEG continues to work on completing well

1300 AEG continues to work on completing well

1400 AEG completes well BW-301R3

1430 AEG cleans up area around well

SKW off-site

Contractor Equipment (QTY) / Sketch

* 2.5 hours drive time

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0630</u>	<u>0600</u>
Off-site:	<u>1430</u>	<u>1500</u>
Add. Hours:	<u>2.5</u>	<u>-</u>
Total:	<u>10.5</u>	<u>9</u>

*If additional hours off-site provide description in field activities.

BEL Representative: _____

Project No.: 2018.126
 Date: 5/30/18
 Report No.: 6



BEL Daily Field Report

Site Name: Lorain Page: 1 of 1
 Project Name/Location: Lorain TI 2018 Spring GCUS
 Contractor/ Personnel: American Environmental Group, LTD. /
 Visitors: ✓

Weather: AM PC PM MC
 Temperature (°F): AM 72 PM 85

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW: 0630 AEG preparing for day's work

Skus on-site

0700 AEG begin drilling well 307-R3

0800 AEG continues to drill

0900 AEG continues to drill

1000 AEG continues to drill

1100 AEG continues to drill

1200 AEG continues to drill

1215 AEG finishes drilling well EW-307R3 @

its maximum depth of 122'. AEG works to
complete well.

1330 AEG sets up & begins drilling well
EW-159R

1430 AEG continues to drill, well EW-307R3 is complete

1530 AEG continues to drill well

1545 AEG finishes drilling well, AEG starts completing well

1700 AEG continues to complete well

1730 AEG completes well EW-159R

1745 Skus off site

Contractor Equipment (QTY) / Sketch

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0630</u>	<u>0600</u>
Off-site:	<u>1745</u>	<u>-</u>
Add. Hours:	<u>-</u>	<u>-</u>
Total:	<u>11.25</u>	<u>-</u>

*If additional hours off-site provide description in field activities.

BEL Representative: [Signature]

Project No.: 2018.126
Date: 5/31/18
Report No.: 1



BEL Daily Field Report

Site Name: Cornin Page: 1 of 1
Project Name/Location: Cornin II 208 Spring CCUS
Contractor/ Personnel: American Environmental Group, LTD. /
Visitors:

Weather: AM PC PM MC
Temperature (°F): AM 71 PM 83

OC - Overcast MC - Mostly Cloudy
CL - Clear PC - Partly Cloudy

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

Today's SOW: 0630 Skw on-site, AEG begins

drilling well EW-160R
0700 AEG continues to drill
0800 AEG continues to drill
0900 AEG continues to drill
1000 AEG continues to drill
1100 AEG continues to drill
1200 AEG continues to drill
1215 AEG hits obstruction, sets well @ 115'
AEG begins to complete well
1430 AEG finishes well EW-160R
1445 Skw off site,

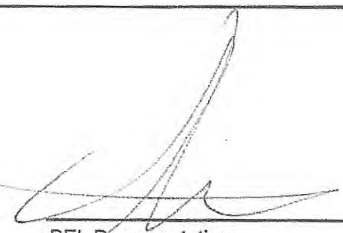
Contractor Equipment (QTY) / Sketch

~ 2.5 hours drive time

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0630</u>	<u>0600</u>
Off-site:	<u>1445</u>	<u>-</u>
Add. Hours:	<u>25</u>	<u>-</u>
Total:	<u>10.75</u>	<u>-</u>

*If additional hours off-site provide description in field activities.


BEL Representative:

Project No.: 2018.126
 Date: 6/25/18
 Report No.: 8



BEL Daily Field Report

Site Name: Larkin Page: 1 of 1
 Project Name/Location: Larkin TT 2018 GCLLS
 Contractor/ Personnel: AEG
 Visitors: —
 Weather: AM OC PM PC
 Temperature (°F): AM 65 PM 73

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW: 0800 Show on-site, AEG begins trenching from well EW-158R2 to EW-48R2

0900 AEG cont. trenching

1000 AEG cont. trenching

1015 AEG tests 100' of 6" HDPE pipe

1100 AEG cont. trenching

1115 Air test passes

1130 AEG finishes trenching, begins to install 6" lateral

1200 AEG abandons existing 6" lateral

1245 AEG fishes 8" T w/ 6" redneck to well EW-48R2

1330 AEG finishes fishing 6" lateral from well EW-48R2

1400 AEG begins to regrade trench

1500 AEG continues to regrade trench

1530 AEG finishes regrading trench, begins to backfill, put down caution tape, & survey stakes

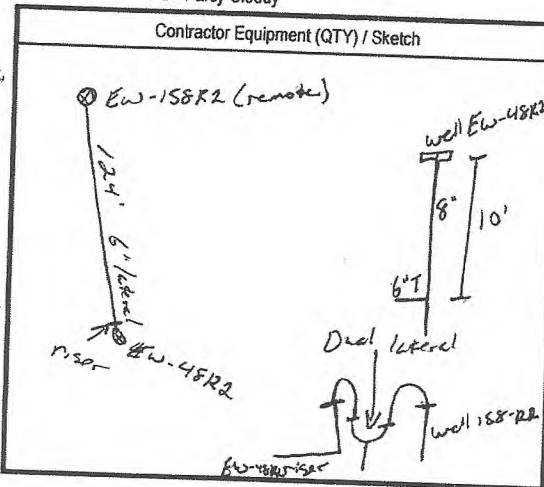
1600 AEG continues to backfill

1700 AEG continues to backfill install dual 6" riser to existing lateral from well EW-158R2

to lateral & well EW-48R2's riser to dual 6" riser

1730 AEG finishes backfilling

1745 AEG off-site, show off-site



*2 hours drive time

Summary of hours worked:		
	BEL	Contractor
On-site:	0800	0700
Off-site:	1745	1745
Add. Hours:	2	—
Total:	11.75	10.75

*If additional hours off-site provide description in field activities.

BEL Representative:

Project No.: 2018.126
 Date: 6/26/18
 Report No.: 9



BEL Daily Field Report

Site Name: Lorain
 Project Name/Location: Lorain II 2018 CCUS
 Contractor/Personnel: AEG
 Visitors: Janet Todric (BEL)

Page: 1 of 1

Weather: AM C1 PM C1
 Temperature (°F): AM 60 PM 78

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Todays SOW: 0800 Sk1 on-site, AEG prepares for days work

0900 AEG continues preparing for days work.
 1000 Construction / design meeting.
 1100 meeting ends, Janet Todric off-site, AEG begins modifications on well JW-1
 1200 AEG cont. modifications on JW-1
 • gravel pack → 6" perf. → 1' stone → felt/textile
 → 3' soil w/ liner 14' x 14' 1' below surface
 1300 AEG continues modifications
 1330 AEG finishes modification to well JW-1
 1400 AEG plans to fuse pipe & prepare for tomorrow work. Sk2 off-site

Contractor Equipment (QTY) / Sketch

Summary of hours worked:

	BEL	Contractor
On-site:	0800	0700
Off-site:	1400	-
Add. Hours:	-	-
Total:	6	-

*If additional hours off-site provide description in field activities.

BEL Representative: [Signature]

Project No.: 2018.126
 Date: 6/28/18
 Report No.: 10



BEL Daily Field Report

Site Name: Loan landfill
 Project Name/Location: Loan II 2018 GCUS
 Contractor/Personnel: AEG
 Visitors: -
 Weather: me AM cl PM
 Temperature (°F): 71 AM 77 PM

Page: 1 of 1

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

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

Today's SOW: 0700 SK on-site, AEG on-site
 AEG prepares for days work
 0730 AEG begins exposing well ELW-307R2
 0830 AEG exposes well ELW-307R2, begins
 trenching & exposing to well ELW-307R2
 0930 pressure tests begin on 6", 2" & 3" (SS)
 1030 pressure tests pass
 1100 AEG abandons well ELW-307R2
 1115 AEG applies vacuum to well ELW-307R2
 1145 AEG backfills, lays caution tape & survey stakes
 1200 AEG begins trenching @ well ELW-348
 1300 AEG cont. to trench
 1400
 1500
 1515 AEG installs 2", 3", & 6" (120")
 1530 AEG begins to backfill
 1630 AEG finishes backfilling, laying caution tape & survey stakes. Will spend rest of
 day stockpiling dirt, site off-site

Contractor Equipment (QTY) / Sketch

Summary of hours worked:

	BEL	Contractor
On-site:	<u>0700</u>	<u>0700</u>
Off-site:	<u>1430</u>	<u>-</u>
Add. Hours:	<u>2.5</u>	<u>-</u>
Total:	<u>10</u>	<u>-</u>

*If additional hours off-site provide description in field activities.

BEL Representative: [Signature]

Project No.: 2018.126
 Date: 6/29/18
 Report No.: 11



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction
 Visitors: N/A
 Weather: AM CL PM CL
 Temperature (°F): AM 73 PM 88
 OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW:

0700 arrive on site; safety meeting
 0730 dig 6" lateral for BW307R3
 0745, continue trenching (2,3,0) & 6" lateral from BW348 to BW340R (05') 50' @ 7' depth
 PRESSURE TEST
 (2,3,0) BW348 to 12" tie in
 1220 to 1320 PASS
 6" lateral BW348 to 12" tie in
 1700 to 1800 PASS
 Notify SCS of possible isolation Monday for tie in
 did not tie into 12" header because need tie in point from wellhead; wellhead will be on site Monday
 continue to haul cover dirt all afternoon; site will not load from borrow area Saturday
 delays not an issue on or off site
 used diverter pellets in all trenches
 completed:
 (1) 6" tie in
 (1) 2" tie in
 (1) 3" tie in
 (1) 6" abandonment
 (1) 2" well head

Contractor Equipment (QTY) / Sketch

(1) 320 E
 (1) 320 D
 (2) 725s
 (1) D5

Summary of hours worked:

	*BEL	Contractor
On-site:	0700	0700
Off-site:	1800	1800
Add. Hours:	8	8
Total:	11	11

*If additional hours off-site provide description in field activities.

John M. Loria
 BEL Representative:

Project No.: 2018.126
 Date: 7/2/18
 Report No.: 12



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction
 Visitors: N/A

Weather: AM CL PM CL
 Temperature (°F): AM 73 PM 90

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW:

0700 on site; safety meeting.
 0740 locate 12" header tie in point; complete (2,3,0) & 6" lateral from EW360 to EW361
 1020 called Christine - tie in point for EW340R & EW348 12" header is 10-11' below grade according to survey information - Pears decided to tie in to 6" lateral near that supplies vacuum to EW353; tie in will be conducted tomorrow; SCS notified of isolation for both tie ins; will bring 4 wells on line tomorrow

Contractor Equipment (QTY) / Sketch
(1) 320A
(1) 320E
(2) 725s
(1) D5

PRESSURE TEST
 6" lateral & (2,3,0) from EW360 to EW361 to 12" header (278 linear feet) 7247 to 1347 PASS
 SCS indicated - 35" WU @ vacuum near for tie in point
 Completed:

3" power main 278'
 2" air line 278'
 6" lateral 278'
 isolation @ 0700 tomorrow

Summary of hours worked:

	*BEL	Contractor
On-site:	0700	0700
Off-site:	1700	1800
Add. Hours:	0	0
Total:	10	11

*If additional hours off-site provide description in field activities.

[Signature]
 BEL Representative:

Project No.: 2018.126
 Date: 7/3/18
 Report No.: 13



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction
 Visitors: N/A

Weather: AM CH PM CL
 Temperature (°F): AM 74 PM 87

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW:

0700 arrive on site; safety meeting
 0740 SCS completed isolation of north slope
 0745 AEG uncovering tie in point for 6" x 12" tie in
 1345 completed tie in of 12" x 6" T
 1350 begin trenching RW340R to manhole riser @ RW353
 1532 completed 104' SART from RW340R to RW353 & completed second tie in; plant back to full capacity @ 1630 (approximate)
 Completed:
 (1) 6" flange
 (1) 12" flange
 (1) 6" x 12" T
 (1) 6" abandonment @ RW341R to cut off former lateral that supplied RW348
 SCS brought RW360, RW361, RW348, & RW340R on line this evening
 Rain could start all afternoon
 Left site @ 1700

Contractor Equipment (QTY) / Sketch

(1) 320 E
 (1) 320 D
 (2) 725s
 (1) D5

Summary of hours worked:

	*BEL	Contractor
On-site:	0700	0700
Off-site:	1700	1700
Add. Hours:	0	0
Total:	10	10

*If additional hours off-site provide description in field activities.

John L. Luria
 BEL Representative:

Project No.: 2018.126
 Date: 7/5/18
 Report No.: 14



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction
 Visitors: N/A

Page: 1 of 1

Weather: AM CL PM CL
 Temperature (°F): AM 70 PM 86

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW:

0700 arrive on site; safety meeting
 0750 trench from 12" header riser to remote well BW359
 1003 stop work for downpour of rain
 1050 continue work
 1145 complete trench from BW359 to 12" header riser (di)
 1230 continue driving pipe to prepare for the tie in tomorrow
 BW363 to BW367 to 12" header; will also tie in BW359R tomorrow (will dig trench early morning)
 1459 called SCS to inform we need an isolation Monday @ 0900; this will be an all day isolation work
 Monday will tie in BW359R, BW363 & BW367
 continue hauling cover dirt the rest of the day
 called Pearson on progress
 1700 leave site

Contractor Equipment (QTY) / Sketch

(1) 320 E
 (1) 320 D
 (2) 725s
 (1) A5

Summary of hours worked:

	*BEL	Contractor
On-site:	0700	0700
Off-site:	1700	1700
Add. Hours:	0	0
Total:	10	10

*If additional hours off-site provide description in field activities.

Paul Zebia
 BEL Representative:

Project No.: 2018.126
 Date: 7/6/18
 Report No.: 15



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnet: Republic Services/AEG Drilling/AEG Construction
 Visitors: N/A

Page: 1 of 1

Weather: AM CL PM CL
 Temperature (°F): AM 74 PM 89

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW:

0700 arrive on site; safety meeting
 0730 begin trenching RW363 to RW362 to RW364 to 12" header
 1230 complete trenching for 12,3,0) 4" 6" lateral RW363 to RW362 to RW364 to 12" header
 335 linear feet
 PROSECURE TEST:
 6" lateral 1235 to 1335 PASS
 2" air 1235 to 1335 PASS
 3" force main 1235 to 1335 PASS
 1440 call SCS for isolation Monday to tie into the 12" header approximately 0900
 1504 installing well grates: 3 total
 Completed:
 6" lateral 335'
 2" air line 335'
 3" force main 335'
 will prepare RW335R for tie in tomorrow from 0700 to 0900 so we can complete (2) tie ins w/ one isolation
 1700 leave site

Contractor Equipment (QTY) / Sketch

(1) 320 D
 (1) 320 E
 (2) 725s
 (1) DS

Summary of hours worked:

	*BEL	Contractor
On-site:	0700	0700
Off-site:	1700	1700
Add. Hours:	0	0
Total:	10	10

*If additional hours off-site provide description in field activities.

[Signature]
 BEL Representative:

Project No.: 2018.126
 Date: 7/9/18
 Report No.: 16



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction
 Visitors: N/A

Weather: AM CL PM CL
 Temperature (°F): AM 70 PM 82

OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW:

0700 arrive on site safety meeting
 0715 AEG begin trenching Pw35R
 and uncovering tie in point
 0830 SCS digates EOL
 0905 AEG begins tie in of 12" x
 10" and installation of 12" isolation
 valve
 1450 complete installation of 12"
 isolation valve, 2" air line tie in,
 3" force main tie in - 6" x 12" tie
 in
 1505 begin abandonment of Pw355
 1603 tie in Pw355R
 1710 install test ports on each side of 12" isolation
 valve
 continue to haul cover dirt
 SCS back to full plant power @ 1600 (approximately)
 Completed:
 - installed 6" x 12" tee flange connection
 - installed 12" butterfly valve, 4" valve stem riser, test ports
 - 2" air, 3" force main & 6" lateral tie in Pw363, Pw362, Pw364
 - abandon Pw355
 - tie in Pw355R 6" lateral, 2" air, 3" force main (72 linear feet)
 Will extend LRT first thing tomorrow morning

Contractor Equipment (QTY) / Sketch

(1) 320 D
 (1) 320 E
 (1) D5
 (2) 725s

Summary of hours worked:

	*BEL	Contractor
On-site:	0700	0700
Off-site:	1800	1800
Add. Hours:	0	0
Total:	11	11

*If additional hours off-site provide description in field activities.

[Signature]
 BEL Representative:

Project No.: 2018.126
 Date: 7/10/18 (TUES)
 Report No.: 17



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction 6 PERSONNEL
 Visitors:

Weather: AM CL PM CL
 Temperature (°F): AM 73 PM 84
 OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW: EW-305R; LR4

0830 - RJC ARRIVES ON SITE AND MEETS WITH JANE TODIA (BEL) ABOUT CURRENT PROJECT SCOPE AND STATUS.

- AEG EXPOSING 24" HEADER FOR 4" SDR 11 FORCE MAIN AND 2" SDR 9 AIR TIE-INS FOR EW-305R.

0920 - AEG BEGINS PRESSURE TEST ON 126' STRINGER OF 2" SDR 9 AT 100 PSI FOR 1 HOUR.

1000 - CONSTRUCTION STATUS MEETING: RSI/BEL/AEG

- AEG BEGINS PRESSURE TEST ON 126' STRINGER OF 3" SDR 11 AT 100 PSI FOR 1 HOUR.

1020 - CONSTRUCTION MEETING ENDS.

- 2" SDR 9 STRINGER PASSES PRESSURE TEST.

- AEG BEGINS INSTALLING 2" SDR 9 TEE AND 4" SDR 11 WYE AT HEADER FOR EW-305R; FUSING AT 450°F.

1100 - 3" SDR 11 STRINGER PASSES PRESSURE TEST; AEG BUILDING RAMP FOR LR4.

1200 - AEG CONTINUES LATERAL TIE-INS AT EW-305R; FUSING AT 450°F.

1230 - AEG COMPLETES TIE-INS AT EW-305R.

- AEG CONTINUES SHAPING RAMP FOR LR4.

1300 - AEG BEGINS EXTENDING LR4 WITH 43' SPOOL PIECE WITH 24" FLANGE CONNECTIONS.

1500 - AEG CONTINUES TO EXTEND LR4 WITH 24" SDR 7 SPOOL PIECE.

1545 - AEG EXTENDS 6" SDR 11 VACUUM LINE; FUSING @ 450°F.

1615 - AEG PERFORMING DRESS-UP AND BACKFILL AT EW-305R. CAUTION TAPE BEING ROLLED OUT, SURVEY RISERS PLACED AND TRENCH BEING BACKFILLED TO STANDARD.

1730 - AEG INSTALLING WELLHEAD ON LR4.

- AEG INSTALLING WELLHEAD ON REMOTE FOR LR7.

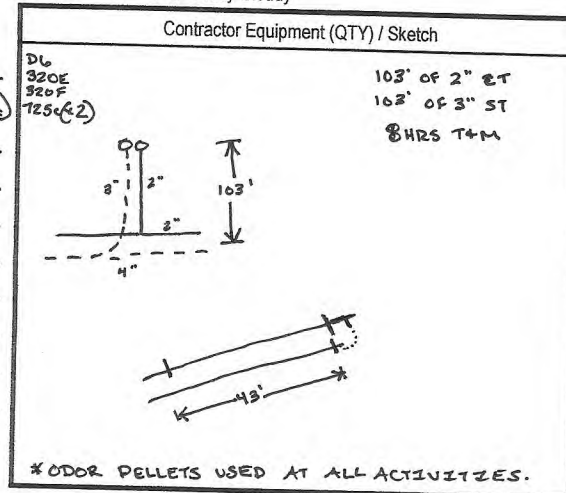
1800 - AEG PERFORMING BACKFILL AND SHAPING OF RAMP AT LR4.

1900 - AEG AND RJC OFF SITE.

Summary of hours worked:

	*BEL	Contractor
On-site:	0830	0700
Off-site:	1900	1900
Add. Hours:	3.5	
Total:	14	12

*If additional hours off-site provide description in field activities.



[Signature]
 BEL Representative.

Project No.: 2018.126
 Date: 7/11/18 (WED)
 Report No.: 18



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
 Project Name/Location: 2018 Phase I GCCS CQA
 Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction 6 PERSONNEL
 Visitors:

Weather: AM CL PM CL
 Temperature (°F): AM 65 PM 79
 OC - Overcast MC - Mostly Cloudy
 CL - Clear PC - Partly Cloudy

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

Today's SOW: EW-301R3, 12" HEADER + 6" LATERALS

0645- RSC ARRIVES ON SITE.

- AEG ARRIVES ON SITE AND BEGINS PERFORMING SAFETY MEETING AND PREPARING FOR THE DAY.

0730- AEG BEGINS PRE-FABRICATING MATERIALS FOR EW-301R3; FUSING AT 450°F.

0735- AEG BEGINS EXPOSING AT EW-301R2 FOR TIE-INS AND OLD WELL ABANDONMENT.

0745- AEG BEGINS PRESSURE TEST ON 44' STRINGER OF 3" SDR 11 AT 100 PSI FOR 1 HOUR.

- AEG BEGINS PRESSURE TEST ON 44' STRINGER OF 2" SDR 9 AT 100 PSI FOR 1 HOUR.

- AEG BEGINS PRESSURE TEST ON 44' STRINGER OF 6" SDR 17 AT 10 PSI FOR 1 HOUR.

- AEG BEGINS TRENCHING FROM EW-301R2 TO EW-301R3 FOR THE 6" SDR 17 VACUUM LATERAL WITH 2" SDR 9 AER AND 3" SDR 11 FORCE MAIN.

0830- AEG COMPLETES TRENCHING.

0845- AEG ABANDONS EW-301R2 WITH BUTT FUSION; FUSING AT 450°F.

- ALL PRESSURE TESTS PASS.

0900- AEG BEGINS TIE-INS FOR EW-301R3; FUSING @ 450°F.

0930- TIE-INS COMPLETE FOR EW-301R3.

- AEG BEGINS BACKFILL OF OPEN TRENCHES. CAUTION TAPE BEING ROLLED OUT AND TRENCH BEING BACKFILLED TO STANDARD.

1030- AEG PREFABRICATING MATERIALS; FUSING AT 450°F.

1040- AEG BEGINS TRENCHING FOR THE EXISTING ABOVE GROUND 12" SDR 17 HEADER AND ABOVE GRADE 6" SDR 17 VACUUM LATERALS.

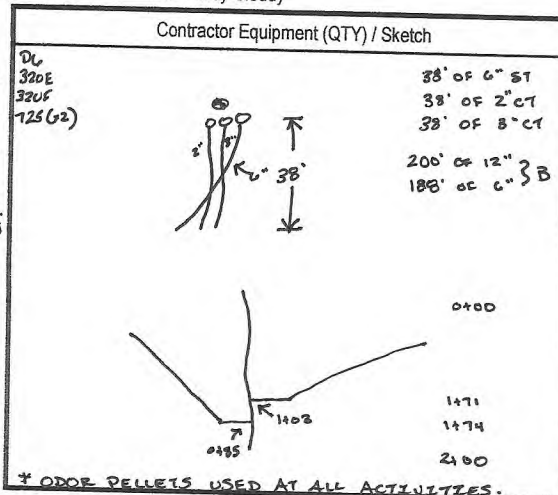
1050- AEG BEGINS PRESSURE TEST ON 96' STRINGER OF 6" SDR 17 AT 10 PSI FOR 1 HOUR.

1150- PRESSURE TEST ON 6" SDR 17 STRINGER PASSES.

Summary of hours worked:

	*BEL	Contractor
On-site:	0645	0645
Off-site:	1800	1800
Add. Hours:		
Total:	11	11

*If additional hours off-site provide description in field activities.



BEL Representative:

BEL Daily Field Report (Continued)

Project Name:

Lorain II Landfill - 2018 Phase I GCCS

Date: 7/11/18 (WED)

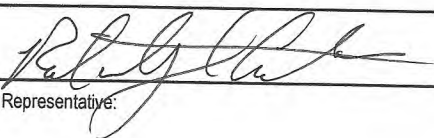
Page: 2

of

2

- 1200 - AEG CONTINUES TRENCHING ON 12" SDR 17 AND 6" SDR 17 ABOVE GROUND LINES.
- 1300 - AEG CONTINUES TRENCHING ON THE 12" SDR 17 HEADER AND 6" SDR 17 ABOVE GROUND LINES.
- 1330 - AEG BEGINS PRESSURE TEST ON 46' STRINGER OF 6" SDR 17 AT 10 PSI FOR 1 HOUR.
- AEG BEGINS PRESSURE TEST ON 46' STRINGER OF 2" SDR 9 AT 100 PSI FOR 1 HOUR.
 - AEG BEGINS PRESSURE TEST ON 46' STRINGER OF 3" SDR 11 AT 100 PSI FOR 1 HOUR.
- 1345 - AEG BEGINS PRESSURE TEST ON 52' STRINGER OF 6" SDR 17 AT 10 PSI FOR 1 HOUR.
- AEG BEGINS PRESSURE TEST ON 52' STRINGER OF 2" SDR 9 AT 100 PSI FOR 1 HOUR.
 - AEG BEGINS PRESSURE TEST ON 52' STRINGER OF 3" SDR 11 AT 100 PSI FOR 1 HOUR.
- 1415 - AEG BEGINS BACKFILLING 12" SDR 17 HEADER AND 6" SDR 17 VACUUM LATERALS.
- 1430 - FIRST THREE PRESSURE TESTS PASS.
- 1445 - SECOND THREE PRESSURE TESTS PASS.
- 1500 - AEG CONTINUES BACKFILLING 12" SDR 17 HEADER AND 6" SDR 17 VACUUM LATERALS. SURVEY RISERS BEING PLACED, CAUTION TAPE BEING ROLLED OUT AND TRENCH BEING BACKFILLED TO STANDARD.
- 1700 - AEG CONTINUES BACKFILL AND DRESS-UP.
- 1800 - RSL AND AEG OFF SITE.



BEL Representative: 



BEL
ENVIRONMENTAL
ENGINEERING

Site Name: Lorain II Landfill 2018 Phase I GCCS Page: 1 of 2

Project Name/Location: 2018 Phase I GCCS CQA

Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction 6 PERSONNEL

Visitors: _____

Weather: AM CL PM CL OC - Overcast MC - Mostly Cloudy

Temperature (°F): AM 59 PM 81 CL - Clear PC - Partly Cloudy

Today's SOW:

Today's SOW: 12" HEADER 90°; EW-155R; EW-34R3

0645. RJC ARRIVES ON SITE.

- ALL ARRIVES ON SITE AND BEGINS PERFORMING SAFETY MEETING AND PREPARING FOR THE DAY.

0730 - AEL BELT/JS EXPOSING ABOVE GROUND 12" HEADER SWEEPING
90° RISER TO LOWER HEADER BELOW GRADE.

- AEG PRE-FABRICATION MATERIALS; FUSING AT 450°F.

0830- AEL BEGINS THE REMOVAL OF 12" 90° ASSEMBLY.

0900 - AEG BEGINS FUSING NEW 12" SDR 11 MOLDED 90° ELBOW

WITH FLANGE ADAPTER ON 12" SDR 17 RISER; EUSTON 450°F

0930-AEG FUSING 12" SDR 17 FLANGE ADAPTER ON
EXISTING 12" SDR 17 HEADER; RSC & WELLER SURVEY.

1000 - AEG BOLTING 12" FLANGE CONNECTION

1040- AEG WRAPS 12" FLANGE CONNECTION IN PLASTIC.

1100- AEG BELINS BACKFILLING 12" HEADER BELOW GRADE.

- RSC AND WELLER CONTINUE AS-BUILT SURVEY.

1200 - AEG BELGIAN EXPOSING AND TRENCHING FOR THE 6" SDR 17 REMOTE LATERAL FOR EW-15SR.

2. AEL REMOVES EXISTING 6" VALVE AND REPLACES VACUUM LINE WITH MANIFOLD; USING 6" SDR 11 FLANGE CONNECTION.

1300- AEG BELTINS TIE-IN FUSES AT EW-155R FOR REMOTE LATERAL; FUSING AT 450°F.

1335 - AEL BELZUS BACKFILLING OPEN TRENCHES. CAUTION TAPE BEING ROLLED OUT, SURVEY RISERS BEING PLACED AND TRENCH BEING BACKFILLED TO STANDARD.

1415. AEG BELTINS TO EXPOSE AND TRENCH ON A 6" SDR 17 VACUUM LATERAL WITH 2" SDR 9 AIR AND 3" SDR 11 FORCE MAIN TO REPLACE DAMAGED LATERAL LINES AT EW-34R3.

- AEG BELGINS PRE-FABRICATING MATERIALS; FUSING AT 450°F.

1430. AEG CONTINUES TO TRENCH ON THE LATERAL LINES FOR EW-34R3

- AEG BEGINS PRESSURE TEST ON 6" SDR 17 LATERAL FOR A TOTAL OF 46' FOR 1 HOUR AT 100 PSI.

Summary of hours worked:

*BEL

Contractor

On-site:

0645

0645

Off-site:

1500

1500

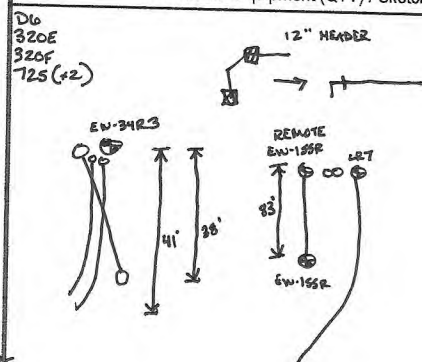
Add. Hours:

11

Total:

*If additional hours off-site provide description in field activities.

Contractor Equipment (QTY) / Sketch



* ODOR PELLETS USED AT ALL ACTIVITIES.

BEL Representative:

Representative: 

BEL Daily Field Report (Continued)

Project Name:

Lorain II Landfill - 2018 Phase I GCCS

Date:

7/12/13 (THUR)

Page:

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of

2

- AEG BEGINS PRESSURE TEST ON 48' STRENGTH OF 2" SDR 9 AT 100 PSI FOR 1 HOUR.

- AEG BEGINS PRESSURE TEST ON 48' STRENGTH OF 3" SDR 11 AT 100 PSI FOR 1 HOUR.

1530 - ALL THREE PRESSURE TESTS PASS.

1535 - AEG CONTINUES^{RC} BEGINS 6" SDR 17 VACUUM LATERAL TIE-IN FOR EW-34R3; FUSING AT 450°F.

- AEG BEGINS HAULING BACKFILL SOILS.

- AEG BEGINS PULLING SURVEY RISERS THAT HAVE COMPLETED AS-BUILT SURVEY.

1630 - AEG COMPLETES 6" SDR 17 TIE-IN.

1640 - AEG BEGINS 2" SDR 9 AIR AND 3" SDR 11 TIE-INS FOR EW-34R3; FUSING AT 450°F.

1700 - TIE-INS COMPLETE.

- AEG PERFORMING DRESS-UP OF WATER CHANNEL NEAR 12" 90° LOWER; REPLACING STONE IN WATER WAY.

- AEG BEGINS BACKFILLING EW-34R3. CAUTION TAPE BEING ROLLED OUT, SURVEY RISERS BEING PLACED AND TRENCH BEING BACKFILLED TO STANDARD.

1800 - R3C AND AEG OFF SITE.



BEL Representative:

A handwritten signature in black ink, appearing to be "R. J. G. L. H.", written over a horizontal line.

Project No.: 2018.126
Date: 7/13/18 (FRI)
Report No.: 20



BEL Daily Field Report

Site Name: Lorain II Landfill 2018 Phase I GCCS
Project Name/Location: 2018 Phase I GCCS CQA
Contractor/ Personnel: Republic Services/AEG Drilling/AEG Construction 6 PERSONNEL
Visitors:
Weather: AM CL PM PC
Temperature (°F): AM 60 PM 87
OC - Overcast MC - Mostly Cloudy
CL - Clear PC - Partly Cloudy

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

Today's SOW:

0645- RJC ARRIVES ON SITE.

- AEG ARRIVES ON SITE AND BEGINS PREPARING FOR THE DAY AND PERFORMING SAFETY MEETING.

0730- AEG BEGINS EXPOSING AT/NEAR EW-159 FOR TIE-INS AND ABANDONMENTS.

0815- AEG TRENCHING ON THE 6" SDR 17 REMOTE LATERAL WITH 2" SDR 9 AIR AND 3" SDR 11 FORCE MAIN.

0845- AEG ABANDONS EW-169 WITH BUTT FUSION; FUSING AT 450°F.

0900- AEG BEGINS TIE-INS FOR 2" SDR 9 AIR AND 3" SDR 11 FORCE MAIN; FUSING @ 450°F.

0920- AEG BEGINS PERFORMING 6" SDR 17 REMOTE LATERAL TIE-IN.

1000- AEG COMPLETES TIE-INS FOR EW-159R.

- AEG BEGINS DRESS-UP AND BACKFILL OF ALL WORKED ON AREAS DURING PROJECT.

- AEG PLACING HIGH-VIS TAPE ON ALL NEWLY INSTALLED RISERS.

1025- AEG BEGINS EXPOSING EW-160 FOR OLD WELL ABANDONMENT AND TIE-INS.

1110- AEG BEGINS TRENCHING ON THE 6" SDR 17 VACUUM LATERAL WITH 2" SDR 9 AIR AND 3" SDR 11 FORCE MAIN.

1210- AEG ABANDONS EW-160 WITH BUTT FUSION; FUSING AT 450°F.

1230- AEG PERFORMING TIE-INS FOR EW-160R; FUSING AT 450°F.

1330- AEG CONTINUES TIE-INS FOR EW-160R.

- AEG CONTINUES DRESS-UP OF ALL WORKED AREAS DURING PROJECT.

- AEG CONTINUES PLACING HIGH-VIS TAPE ON ALL NEWLY INSTALLED RISERS.

1445- AEG BEGINS BACKFILLING OPEN TRENCHES. CAUTION TAPE BEING ROLLED OUT AND SURVEY RISERS BEING PLACED. TRENCH BEING BACKFILLED TO STANDARD.

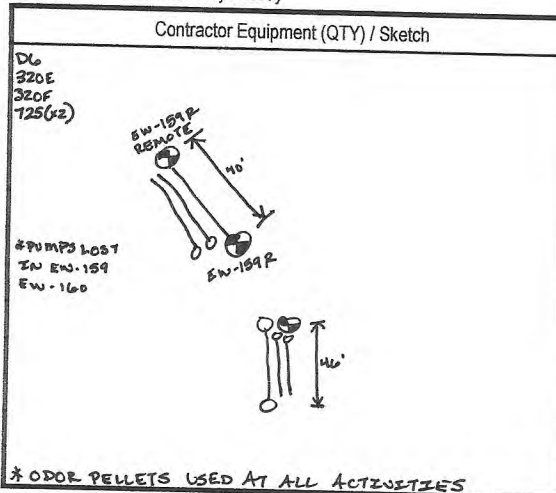
- AEG CONTINUES DRESS-UP.

- AEG CONTINUES PERFORMING CLEAN-UP.

Summary of hours worked:

	*BEL	Contractor
On-site:	0645	0645
Off-site:	1800	1800
Add. Hours:		
Total:	11	11

*If additional hours off-site provide description in field activities.



BEL Representative:

BEL Daily Field Report (Continued)

Project Name:

Lorain II Landfill - 2018 Phase I GCCS

Date:

7/13/15 (FRI)

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1500 - AEG CONTINUES BACKFILL AND DRESS-UP

1600 - AEG CONTINUES BACKFILL AND DRESS-UP, WORK/PROJECT SUBSTANTIALLY COMPLETED.

1800 - RJC AND AEG OFF SITE.



BEL Representative:

A handwritten signature in black ink, appearing to be "R. J. C.", written over a horizontal line.

APPENDIX E
PERTINENT DOCUMENTS

APPENDIX F
RESUMES

Janet Todia

SENIOR PROJECT MANAGER
BEL ENVIRONMENTAL ENGINEERING, LLC



TOTAL EXPERIENCE: 20 Years

WORK HISTORY:

- ❖ BEL Environmental Engineering, LLC – 1 Year
- ❖ T&M Associates – 3 Years
- ❖ Brown and Caldwell – 3 Years
- ❖ American Environmental Group – 6 years
- ❖ Environmental Information Logistics – 2 Years
- ❖ Monitoring Control and Compliance – 2 years
- ❖ Tyco Corporation – 1 Year
- ❖ Emcon/OWT – 3 Years

EDUCATION:

- ❖ University of Toledo College of Pharmacy

PROFESSIONAL REGISTRATION:

- ❖ John Zinc Landfill Gas Flare School, 2007-2010 Annually
- ❖ 40 Hour Hazmat Certification and Current 8 Hour OSHA Refresher
- ❖ NSPS/EG & Title V Compliance Training, 2007 – 2011 Annually
- ❖ 8 Hour OSHA Project Supervisor Training
- ❖ Hydraulic Conductivity & Triaxial Shear, 2017

QUALIFICATION HIGHLIGHTS:

- ❖ Ms. Todia has extensive experience and knowledge of every aspect of landfill design, landfill gas CQA, GCCSs, construction, compliance, operations, maintenance, closure and post-closure care.
- ❖ She has extensive experience in managing multidisciplinary project teams and directing professional consultants and contractors during project planning and execution.
- ❖ She has assessed, designed, planned, implemented and/or executed landfill fire, landfill dross reaction, GCCS investigations and remediation projects under state law, CERCLA, RCRA and/or other regulatory programs, as appropriate, in several US States.

RELEVANT PROJECT EXPERIENCE

Middle Point Landfill, Murfreesboro, Tennessee – 2010 – 2017 - Assembled Monthly Operations, Maintenance and Monitoring reports on behalf of Republic Services as required by Tennessee Department of Environmental Quality. Managed Gas Field Technicians and teamed with Republic Management to continuously assess Well Field Operations on this reaction site.

Bridgeton Landfill, Bridgeton, MO, 2010 – 2015 – Ms. Todia teamed with Republic Management to manage Gas Field Technician staff. She also assembled Monthly Operations Reports and worked with site Management to initiate an Operations, Maintenance, and Monitoring Plan as well as assembling Monthly Operations Reports on behalf of Republic Services as required by Missouri Department of Environmental Quality.

Countywide RDF Landfill, 2006-Current – LFG Operations and Maintenance Project Manager for Landfill Gas Management System. Worked with Ohio EPA NEDO through Findings and Orders and Implemented a Gas Technician Monitoring and Maintenance Program due to the ongoing dross reaction on site. Currently assembles monthly reports required by the site Operations, Maintenance and Monitoring Plan and presents data quarterly to NEDO on behalf of Republic Services.

Lorain County I Landfill, Lorain, Ohio 2010 - 2013 – Leachate Compliance Sampling in accordance with Site Direct Discharge Permit. Coordinated Permit renewals and coordinated with Lorain Wastewater Treatment Plant.

Cuyahoga Regional Sanitary Landfill, Nestle USA, Solon, Ohio 1999 – 2003 – LFG CQA Project Manager for Landfill Gas Management System designed to supply a 3.8 megawatt power plant on site and a 72 mmbtu boiler system to Nestle USA. Ms. Todia managed the coordination of field operations with pipeline and compression skid construction activities for the startup of the Nestle Gas-to-Energy Project. In addition, Ms. Todia was responsible for tuning and maintain the well field in addition to installation of air line, force main and pneumatic pumps.

Epperson Waste Disposal, Williamstown, Kentucky 2004 & 2005 – LFG Project Manager/Supervisor for Landfill Gas Technicians. Initiated the installation of pneumatic pumps and air and force main, Managed Environmental Compliance Reporting.

Valley View Landfill, Sulphur, KY – 2004 & 2005 – LFG Project Manager/Supervisor for Landfill Gas Technicians. Managed Environmental Compliance and Reporting.

Hazel Road Landfill, Akron, Ohio 2006-2014 – LFG Project Manager Gas Collection and Control System. Assisted Gas Technicians in trouble shooting potential gas migration issues and pump installation.

Hoffman Road Landfill, Toledo, Ohio 2004 - 2005 – LFG Project Manager for Gas Technician Services. Ms. Todia managed Environmental Compliance and reporting and assisted site technicians in small-scale construction repairs. Managed small-scale construction projects and flare upgrades.

Lake County Landfill, Chesterland, Ohio 2006-2014 – Ms. Todia served as the Project Manager for small-scale construction repairs, and managed Environmental Compliance for the facility.

Oakland Heights Development, Auburn Hills, Michigan 2006-2009 – Ms. Todia served as the LFG Project Manager for Operation and Maintenance

- ❖ Ms. Todia has routinely worked in cooperation with state, including the TDEQ, OEPA, PADEP, federal, and local regulatory agencies on problem resolution as well as project scope, planning, schedule and execution.
- ❖ She has managed landfill operations and maintenance including environmental compliance for 14 active and/or closed landfills
- ❖ She has managed an Operations and Maintenance Team consisting of 12 Technicians spread across 8 States. Responsibilities include managing, mentoring and development of the Operations and Maintenance staff.
- ❖ Ms. Todia also managed a team of 4 Data Compliance Managers prior to the implementation of National Database Systems to manage and monitor well field data.

Services. This gas system Project provided methane to the GM Lake Orion Boiler System. She managed budget and non-routine maintenance activities for the GCCS.

Pine Tree Acres Landfill, Lenox Township, Michigan 2006-2009 – Ms. Todia served as the Project Manager for well field technicians and aided in trouble shooting to increase gas flow to the energy plant on site. Ms. Todia was responsible for Environmental Compliance for the site.

Statewide Landfill, Canton, Ohio 2006-2014 – Ms. Todia managed the Well Field Technicians and aided in routine and non routine tuning, installation of pneumatic pumps, small-scale construction repairs, and troubleshooting potential landfill gas migration issues.

Eastern Sanitary Landfill, White Marsh, MD 2002-2004 – Ms. Todia performed monthly well field tuning as required. In addition, she monitored the site gas probes on a monthly basis and continuously worked to prevent off site migration on a site with challenging geology.

Landfill Air Compliance Reporting (2003 – 2008)

Deercroft Recycling and Disposal Facility, Waste Management, Michigan City, Indiana

Ms. Todia prepared semiannual Title V reports, semiannual New Source Performance Standards (NSPS) reports, and semiannual Startup, Shutdown, and Malfunction (SSM) reports. She submitted variance requests/alternative timeline requests, Title V Annual Compliance Certification, well decommissioning requests and Deviation Occurrence Reports.

Douglas County Recycling and Disposal Facility, Waste Management, Bennington, Nebraska

Ms. Todia prepared semiannual Title V reports, semiannual NSPS reports, semiannual SSM reports, and Title V annual compliance certifications.

ELDA Recycling and Disposal Facility, Waste Management, Cincinnati, Ohio

Ms. Todia prepared quarterly/semiannual Title V reports, semiannual EG reports, and semiannual SSM reports. She submitted variance requests/alternative timeline requests and well decommissioning requests.

Epperson Waste Disposal, Republic Services, Williamstown, Kentucky

Ms. Todia prepared semiannual NSPS reports and semiannual SSM reports. She also submitted alternative variance requests/alternative timeline requests and well decommissioning requests.

Greene Valley Recycling and Disposal Facility, Waste Management, Naperville, Illinois

Ms. Todia prepared semiannual EG Reports, semiannual SSM Reports, semiannual Clean Air Act Permit Program (CAAPP) reports, and annual CAAPP compliance certifications. She submitted CAAPP Form 405s on an as need basis.

Hardy Road Sanitary Landfill, Waste Management, Akron, Ohio

Ms. Todia prepared semiannual NSPS Reports, semiannual SSM Reports, quarterly/semiannual Title V Reports, annual Title V Compliance Certifications, and annual Solid Waste Reports. She also maintained the site Operating Record.

Hoffman Road Landfill, City of Toledo, Toledo, Ohio

Ms. Todia prepared semiannual NSPS Reports, semiannual SSM Reports, and quarterly/semiannual Title V Reports.

Lake County RDF, Waste Management, Chesterland, Ohio

Ms. Todia prepared semiannual EG Reports, semiannual SSM Reports, quarterly/semiannual Title V Reports, annual Title V Compliance Certifications, and annual Solid Waste Reports.

Lake Landfill, Waste Management, Northbrook, Illinois

Ms. Todia prepared semiannual EG Reports, semiannual SSM Reports, semiannual CAAPP Reports, and annual CAAPP Compliance Certifications. She also submitted CAAPP Form 405s on an as need basis.

Metro Park East Landfill, Waste Management, Mitchellville, Iowa

Ms. Todia prepared semiannual NSPS Reports, semiannual SSM Reports, semiannual Title V Reports, and annual Title V Compliance Certifications.

Valley View Landfill, Republic Services, Sulphur, Kentucky

Ms. Todia prepared semiannual NSPS Reports, semiannual SSM Reports, semiannual Title V Reports, and annual Compliance Certifications. She submitted variance requests/alternative timeline requests, and well decommissioning requests.

Wheeler Recycling and Disposal Facility, Waste Management, Wheeler, Indiana

Ms. Todia prepared semiannual EG Reports, semiannual SSM Reports, quarterly/semiannual Part 70 Compliance Certifications, and annual Part 70 Compliance Certifications. She submitted variance requests/alternative timeline requests, well decommissioning requests, and Deviation Occurrence Reports.

Woodland Recycling and Disposal Facility, Waste Management, South Elgin, Illinois

Ms. Todia prepared semiannual EG Reports, semiannual SSM Reports, semiannual Title V Reports, and annual Compliance Certifications. She submitted variance requests/alternative timeline requests, and well decommissioning requests.

Robert J. Cornelius

CQA FIELD TECHNICIAN
BEL ENVIRONMENTAL ENGINEERING, LLC



TOTAL EXPERIENCE: 10 YEARS

WORK HISTORY:

- ❖ BEL Environmental Engineering, LLC – 4 Years
- ❖ American Environmental Group, LTD. – 6 Years

TRAINING:

- ❖ Troxler Nuclear Moisture/Density Gauge Operator and Radiation Safety Officer Training
- ❖ HAZMAT Training
- ❖ 40-Hour HAZWOPER Training & 8-Hour Refresher
- ❖ Confined Space Entry Qualified
- ❖ Confined Space Entry Supervisor Qualified
- ❖ ISCO Fusion Certificates
- ❖ O&M Compliance & Wellfield Management

QUALIFICATION HIGHLIGHTS:

- ❖ Mr. Cornelius has 10 years of experience in environmental construction and construction quality assurance. He has served as a construction quality control technician on numerous landfill projects working with multiple earthworks, geosynthetic, and piping contractors.
- ❖ Mr. Cornelius has been responsible for communication with site personnel and contractors, provide documentation of daily field activities, and complete all necessary field testing.
- ❖ Mr. Cornelius has completed wellfield tuning and wellfield inspections for On Site Maintenance work with the LFG system on select landfills.
- ❖ He has acted as Construction Quality Assurance technician for solid waste landfill construction projects in Ohio, Kentucky, Michigan, West Virginia, Indiana and Pennsylvania. Projects included landfill baseliner repairs and closure construction, landfill gas management systems, and erosion control applications.
- ❖ As a Construction Foreman/Supervisor, Mr. Cornelius performed over 43 large scale and 24 small scale LFG construction projects where he installed thousands of feet of LFG piping, flare stations, leachate collection tanks, pump stations, and performed several O&M projects.
- ❖ He has assisted the Certifying Engineer in completing over 40 different Construction Certification Reports. His responsibilities included reviewing as-built construction drawings, geotechnical and geosynthetic installation data, and photo documentation of construction procedures.

RELEVANT PROJECT EXPERIENCE

Green Valley Landfill, Kentucky – CQA services for the installation of a LFG system expansion including extraction wells and collection piping. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed. Prepared draft narratives and reviewed record drawings for construction certification.

Sycamore Landfill – West Virginia – CQA services for the installation of a LFG system expansion including extraction wells and collection piping. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed. Prepared draft narratives and reviewed record drawings for construction certification.

Sauk Trail Hills – Michigan – CQA services for the installation of a LFG system expansion including extraction wells and collection piping. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed.

Adrian Landfill – Michigan – CQA services during the installation of the 2013 landfill gas system header regarding and expansion, and new header tie ins at the flare station. Services included observation of conveyance piping system air pressure testing and documentation of construction materials and procedures.

Greenridge Reclamation, LLC, Pennsylvania – Problem solving and helping in isolating air line and force main line breaks in LFG system piping. Mr. Cornelius has also performed the inspection of the Stream Culvert Inspection multiple times. CQA services for the installation of a LFG system expansion including extraction wells and collection piping. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed. Prepared draft narratives and reviewed record drawings for construction certification.

Imperial Landfill, Pennsylvania – CQA and services for the installation of a LFG system expansion including extraction wells and collection piping. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed. Prepared draft narratives and reviewed record drawings for construction certification and provided services during cell construction for berm, leachate collection, and stone placement. Mr. Cornelius also performed lead as meeting liaison for any gas related materials during the project.

Carbon Limestone Landfill, Ohio – CQA services for the installation of a LFG system expansion including extraction wells and collection piping, ensuring proper construction and expansion of the ADS collector system in Phase 2, proper repairs of the geosynthetics during ADS work, and CQA services for the earthworks for the tie in of Phase 2 and 3. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed. Prepared draft narratives and reviewed record drawings for construction certification

CECOS Landfill, Cincinnati – CQA services for the repair of the 24" concrete encasement in the hazardous waste areas. Mr. Cornelius ensured the proper handling of the hazardous materials and the preparation of emergency procedures.

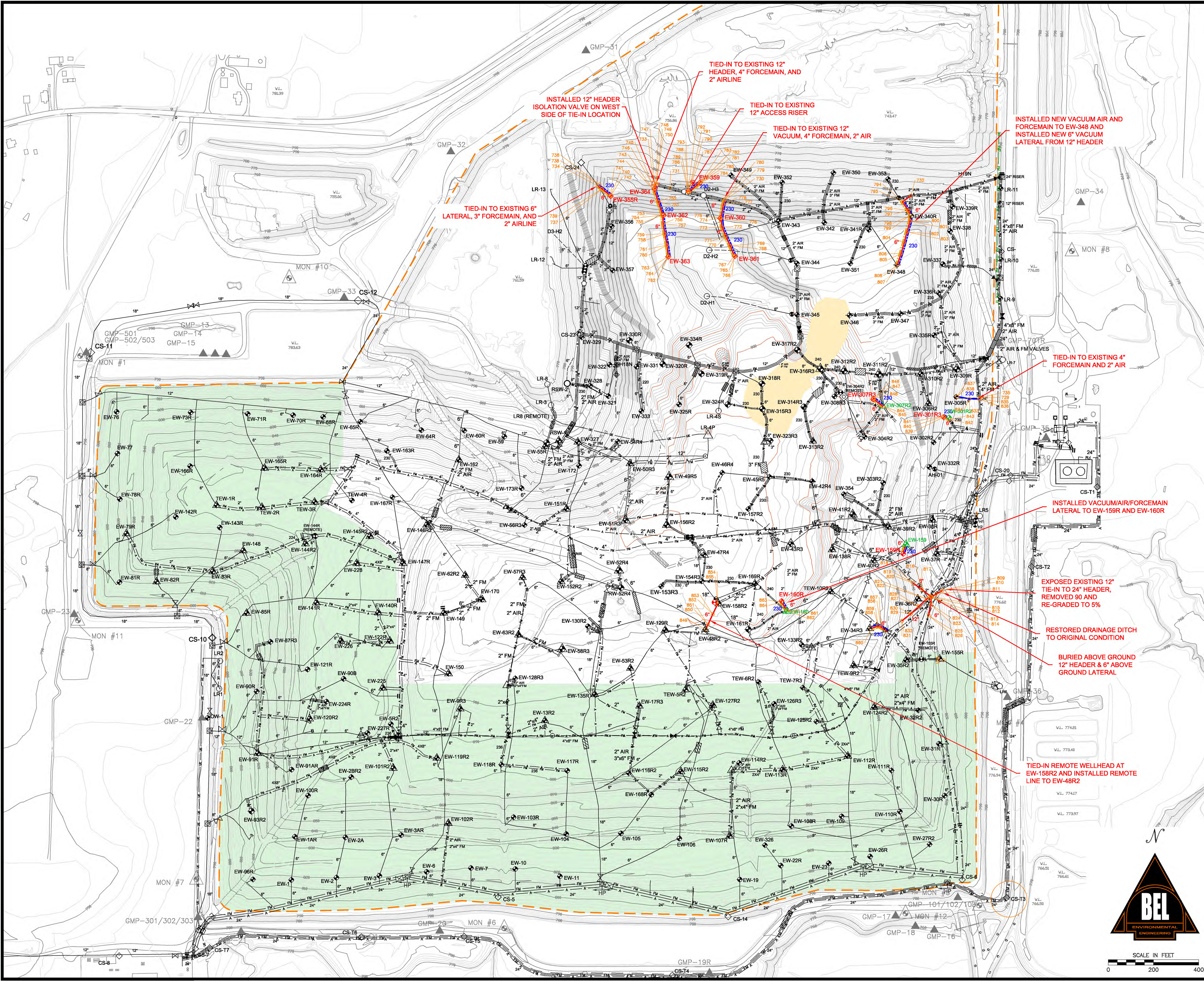
Northwest Landfill, Pennsylvania – CQA services for the repair of the Area 2 – 12' concrete leachate collection system, including the installation of new containment, pump refurbishment, float elevations and management, electrical installation, and proper handling of system controls. Prepared draft narratives and reviewed record drawings for construction certification.

Northwest Landfill, Pennsylvania – CQA services for earthworks and installation of geosynthetic materials during the final cap installation. Mr. Cornelius was responsible for the oversight of all earthworks prior to and post geosynthetic deployment, and ensuring proper grades were met. Mr. Cornelius also observed and documented all geosynthetic installation, repairs, and pressure testing.

Wabash Valley Landfill – Indiana – CQA services for the installation of a LFG system expansion including extraction wells and collection piping. Mr. Cornelius ensured the grading of the piping met the engineering specifics and oversaw all air testing of the piping before the installation and tie-ins were completed. Prepared draft narratives and reviewed record drawings for construction certification.

APPENDIX G
RECORD DRAWINGS

<u>Sheet No.</u>	<u>Drawing Title</u>
1	2018 Landfill Gas System Plan View
2	2018 Landfill Gas System Details And Well Schedule
3	2018 Landfill Gas System Details
4	2018 Landfill Gas System Details
5	2018 Landfill Gas System Details
6	2018 Landfill Gas System Details
7	2018 Landfill Gas System Survey Points



LEGEND

- PROPERTY BOUNDARY
- EXISTING SOLID WASTE CELL BOUNDARY
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 12"
- 6"
- EXISTING LANDFILL GAS HEADER
- EXISTING LANDFILL HORIZONTAL COLLECTOR
- EXISTING FORCE MAIN
- EXISTING AIRLINE
- EXISTING LEACHATE COLLECTION LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING ACTIVE LINES BUT NOT ACCESSABLE
- EXISTING AREA OF FINAL COVER PLACEMENT
- EXISTING ROADS
- EXISTING LFG EXTRACTION WELL / WELLHEAD
- EXISTING COMBINATION WELL
- EXISTING HORIZONTAL COLLECTOR WELLHEAD
- EXISTING HEADER ACCESS RISER
- EXISTING CONTROL VALVE
- EXISTING BLIND FLANGE
- EXISTING CONDENSATE DRIPLEG
- EXISTING ROCK SUMP
- EXISTING AIR RELEASE VALVE
- EXISTING CONDENSATE SUMP
- EXISTING LEACHATE ROCK SUMP
- EXISTING SELF DRAINING CONDENSATE TRAP
- REMOTE WELLHEAD
- CAP FOR LATERAL ABANDONMENT
- EXISTING CMP ROAD CROSSING
- EXISTING FORCEMAIN CLEANOUT
- 12"
- 3" FM FM FM FM
- AS-BUILT LFG HEADER/LATERAL
- AS-BUILT FORCEMAIN
- AS-BUILT AIR LINE
- AS-BUILT LFG EXTRACTION WELL/WELLHEAD
- ABANDONED LFG EXTRACTION WELL/WELLHEAD
- AS-BUILT REMOTE WELLHEAD
- AS-BUILT CONTROL VALVE

NOTES:
1. EXISTING AERIAL MAPPING CONTOURS DEVELOPED BY COOPER AERIAL SURVEYS CO. DATED NOVEMBER 15, 2017 & QUARTERLY AERIAL SURVEYS PROVIDED WELLERT CORPORATION DATED FEBRUARY 6, 2018 & MARCH 28, 2018.
2. AS-BUILT SURVEY DATA PROVIDED BY WELLERT CORPORATION DATED JULY 16, 2018.

STATE OF OHIO
BRIAN P. BARNINGER
E-73061
REGISTERED PROFESSIONAL ENGINEER
08/14/18

LORAIN COUNTY II LANDFILL

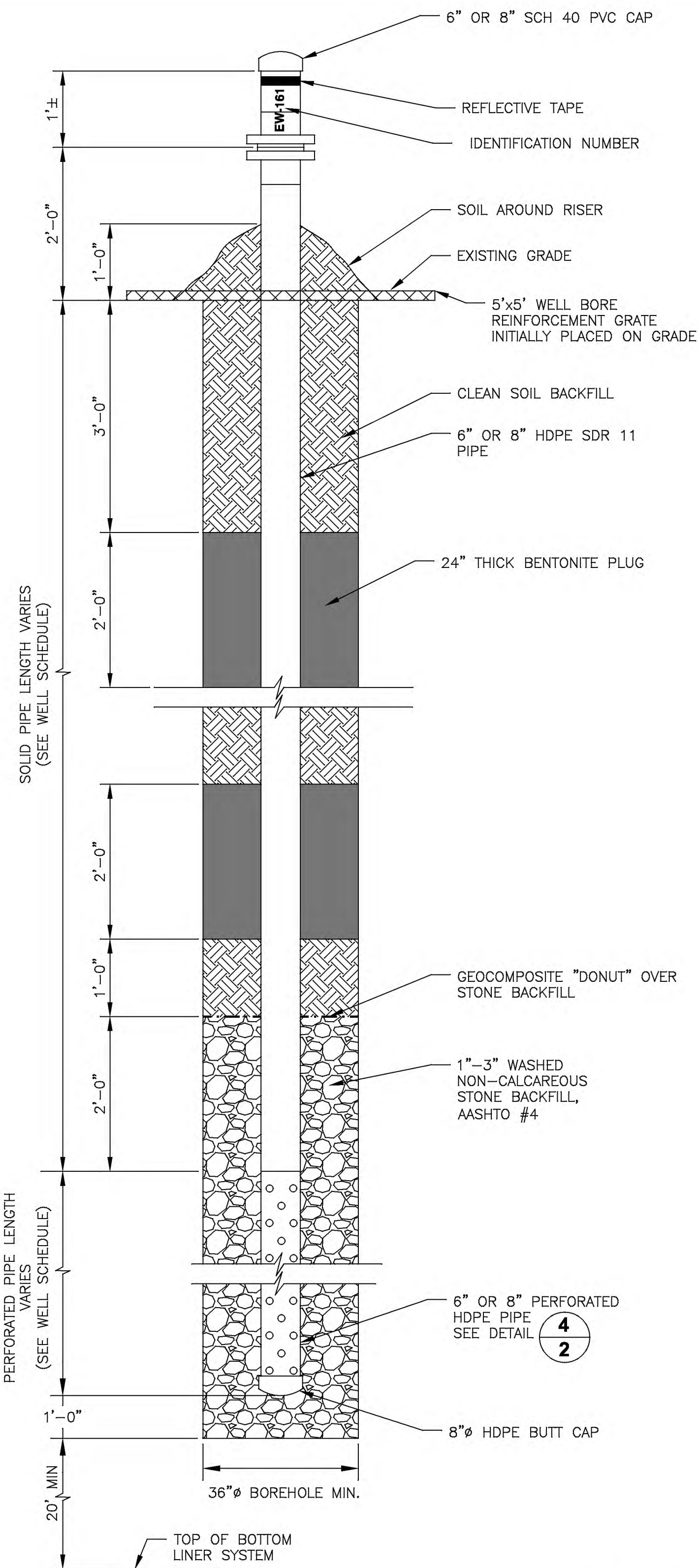
2018 LFG SYSTEM CONSTRUCTION RECORD DRAWING PLAN VIEW		DATE: 08/01/18 DRAWN BY: MMB	PROJECT NO: 2018.100
REV.	DATE	DESCRIPTION	CK. BY



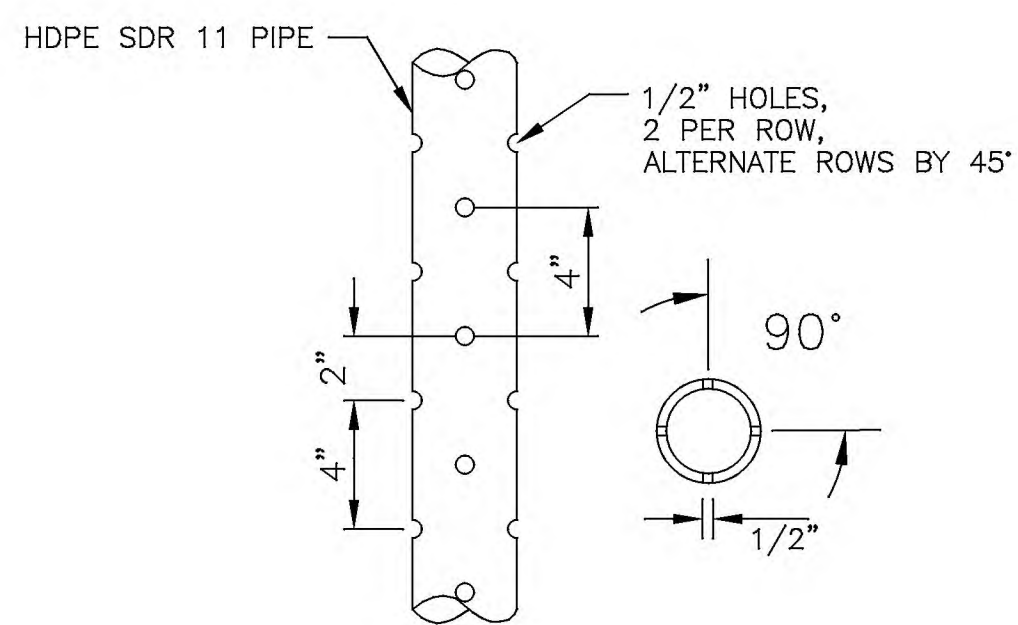
DRAWING:
1
OF 7



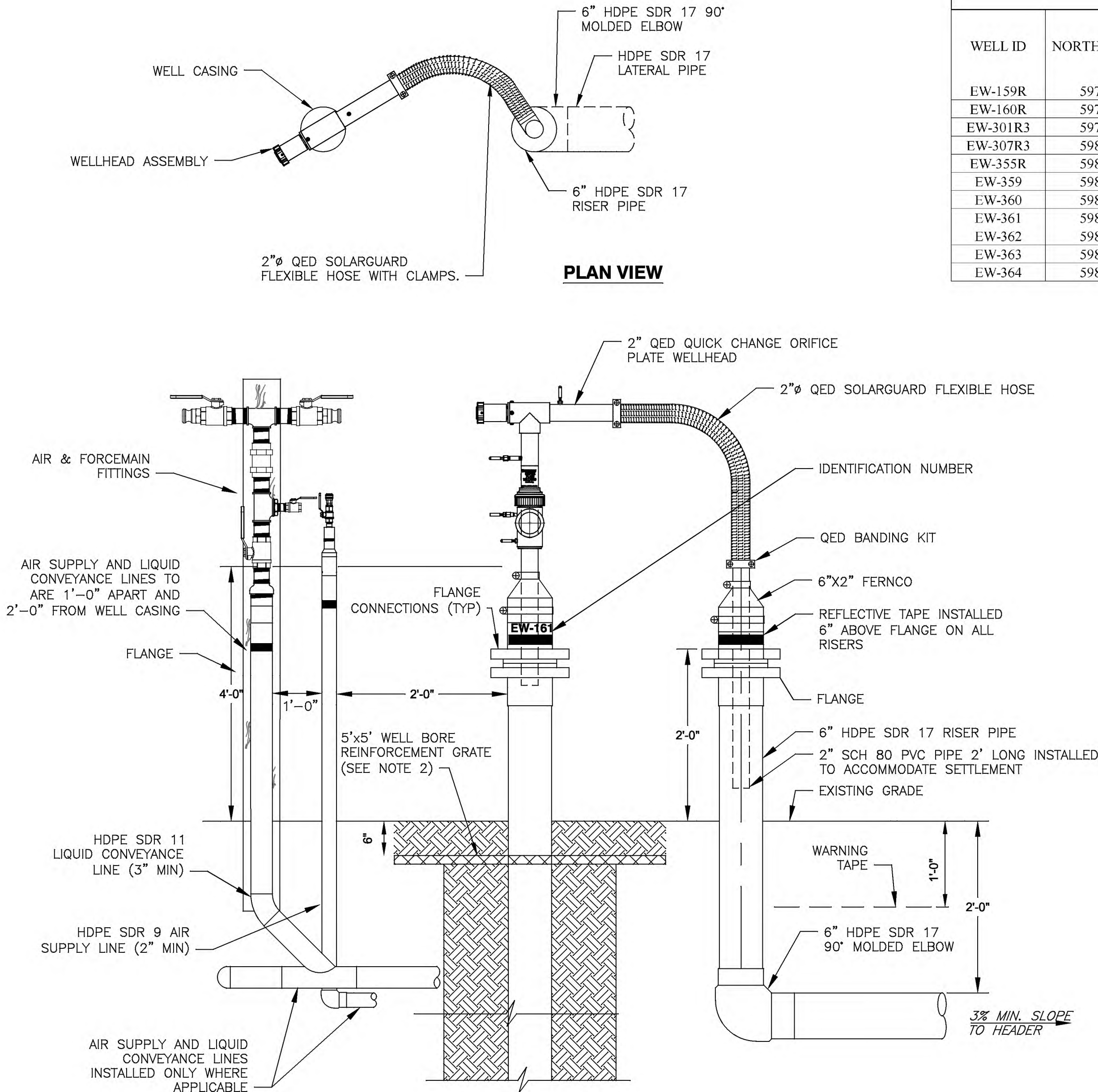
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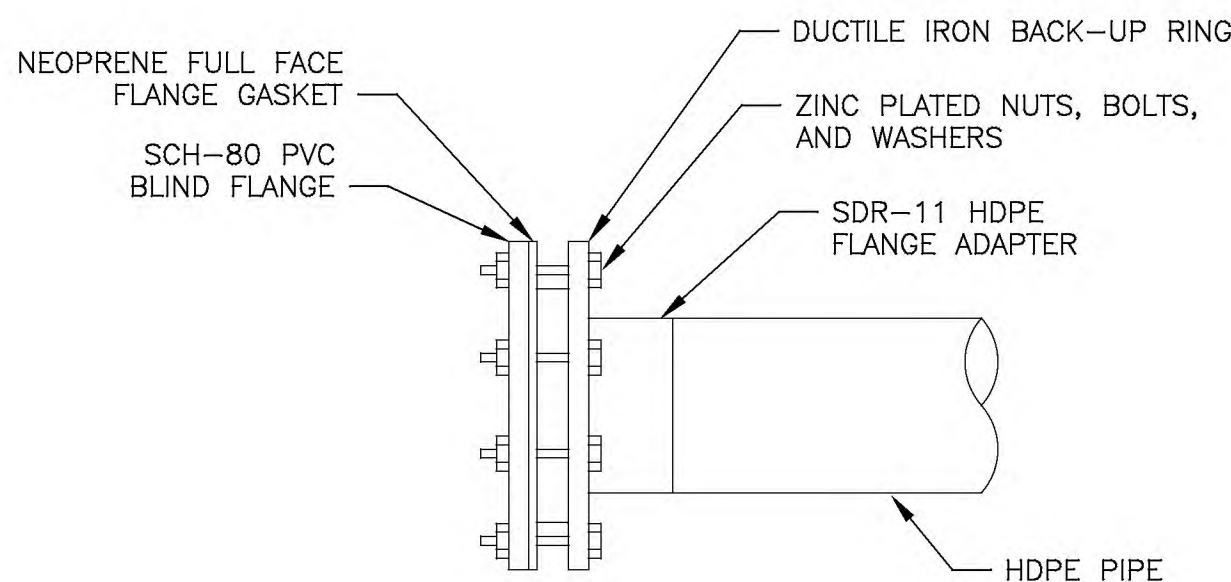
LFG EXTRACTION WELL DETAIL 1/2
NOT TO SCALE



PERFORATED PIPE DETAIL 4/2
NOT TO SCALE

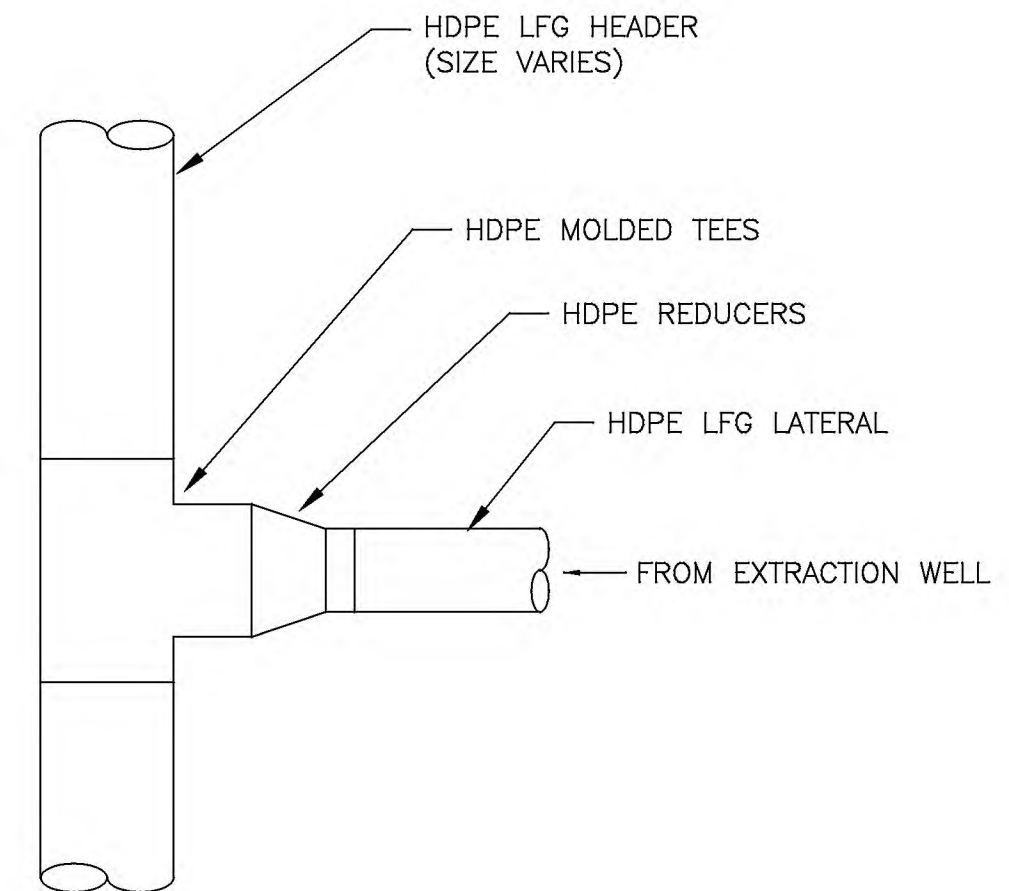


WELLHEAD DETAIL 2/2
NOT TO SCALE

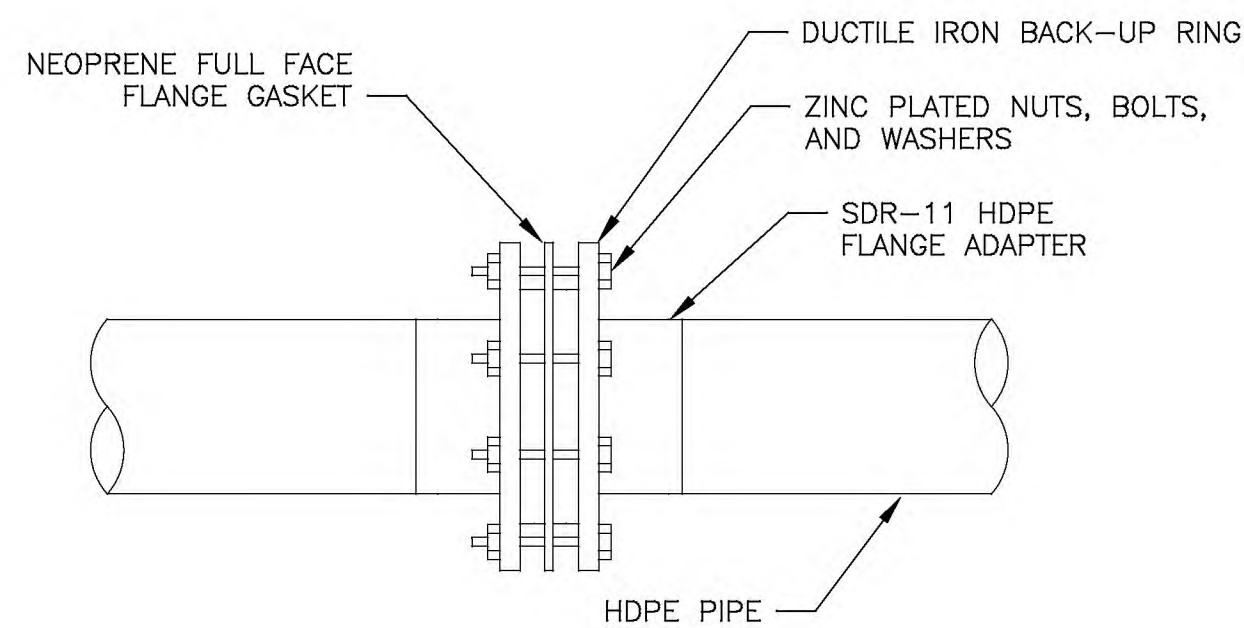


BLIND FLANGE ASSEMBLY DETAIL 5/2
NOT TO SCALE

2018 LORAIN COUNTY PHASE I AS-BUILT WELL SCHEDULE											
WELL ID	NORTHING (FT)	EASTING (FT)	APPROX. ELEVATION (FT)		BOREHOLE DEPTH (FT)	PIPE LENGTH (FT)			THICKNESS OF GRAVEL PACK (FT)	WELL CASING DIA. (IN)	FINAL COVER REPAIR
			GROUND SURFACE	BOTTOM OF BOREHOLE		PERFORATED	SOLID WALL	ABOVE GRADE RISER			
EW-159R	597,323	2,059,678	845	779	66	45	20	3	47	6	NO
EW-160R	597,114	2,059,140	905	790	115	94	20	3	96	6	NO
EW-301R3	597,927	2,059,856	840	751	89	68	20	3	70	6	NO
EW-307R3	598,006	2,059,544	877	755	122	101	20	3	103	6	NO
EW-355R	598,904	2,058,383	833	785	48	27	20	3	29	6	NO
EW-359	598,963	2,058,781	809	768	41	20	20	3	23	6	NO
EW-360	598,806	2,058,869	858	763	95	74	20	3	76	6	NO
EW-361	598,640	2,058,933	880	760	120	99	20	3	101	8	NO
EW-362	598,819	2,058,619	858	780	78	57	20	3	59	6	NO
EW-363	598,637	2,058,639	878	776	102	81	20	3	83	8	NO
EW-364	598,936	2,058,378	822	780	42	21	20	3	23	6	NO
Total:					918	687	220	33	710		



LFG LATERAL TIE-IN WITH TEE 3/2
NOT TO SCALE



FLANGE CONNECTION DETAIL 6/2
NOT TO SCALE



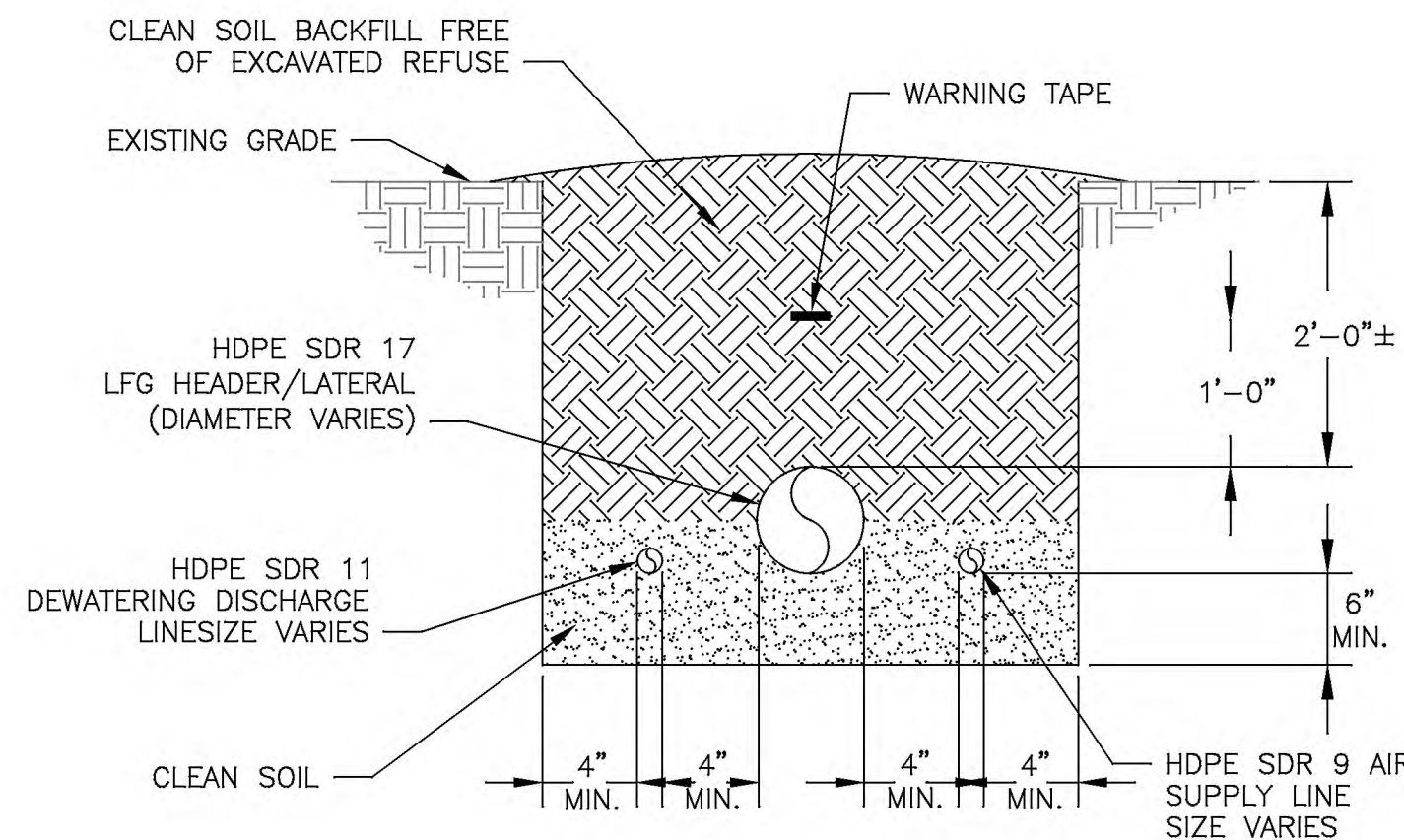
LORAIN COUNTY II LANDFILL

**2018 LFG SYSTEM
CONSTRUCTION
RECORD DRAWING
DETAILS - WELL SCHEDULE**

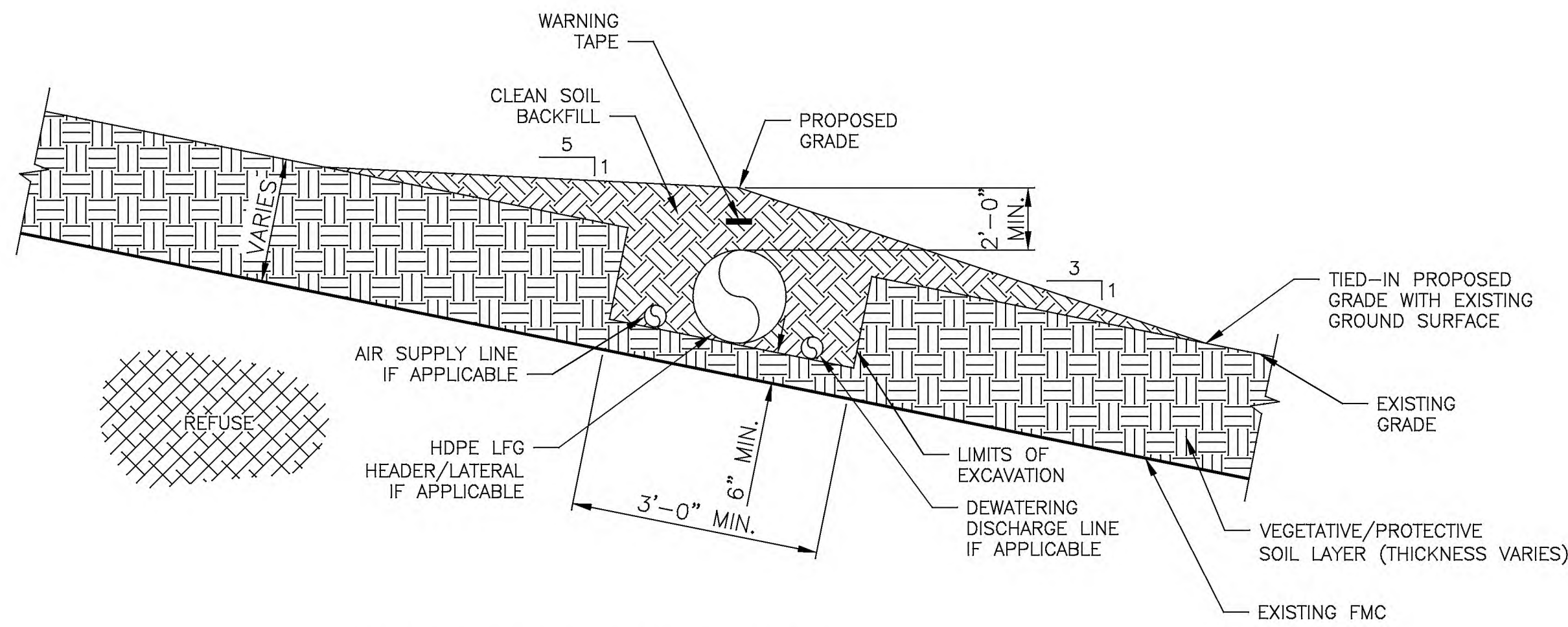
DATE: 08/01/18	DRAWN BY: MMB	PROJECT NO: 2018.100
REV.	DATE	DESCRIPTION
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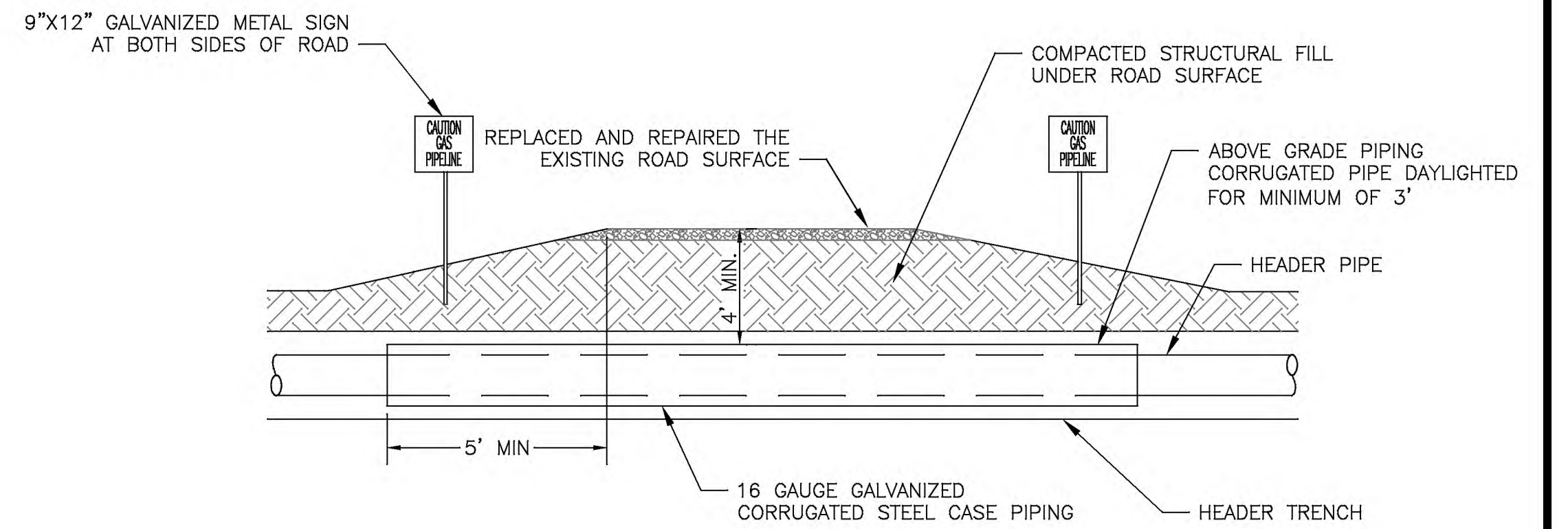
DRAWING:
2
OF 7



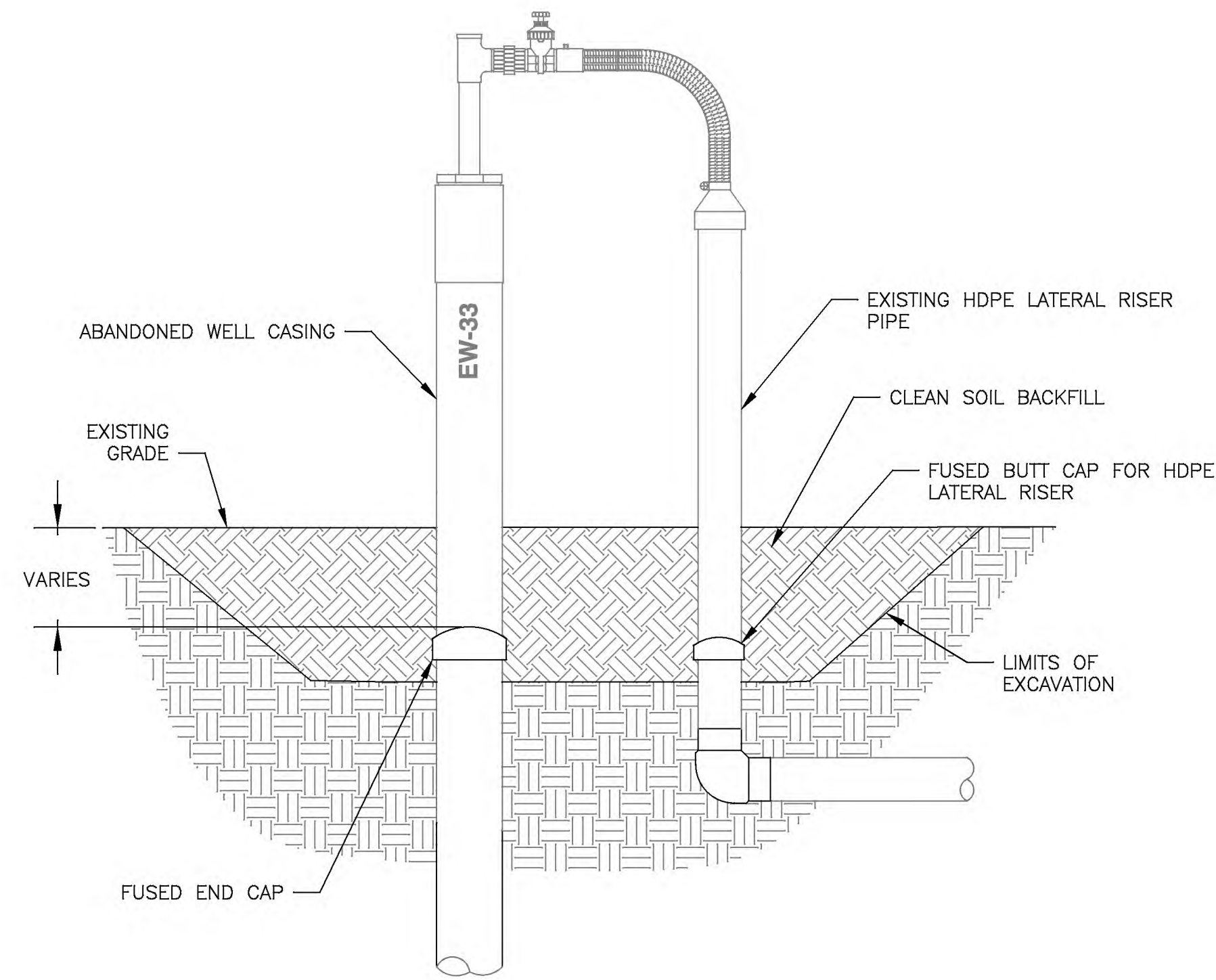
HEADER/LATERAL TRENCH DETAIL
NOT TO SCALE



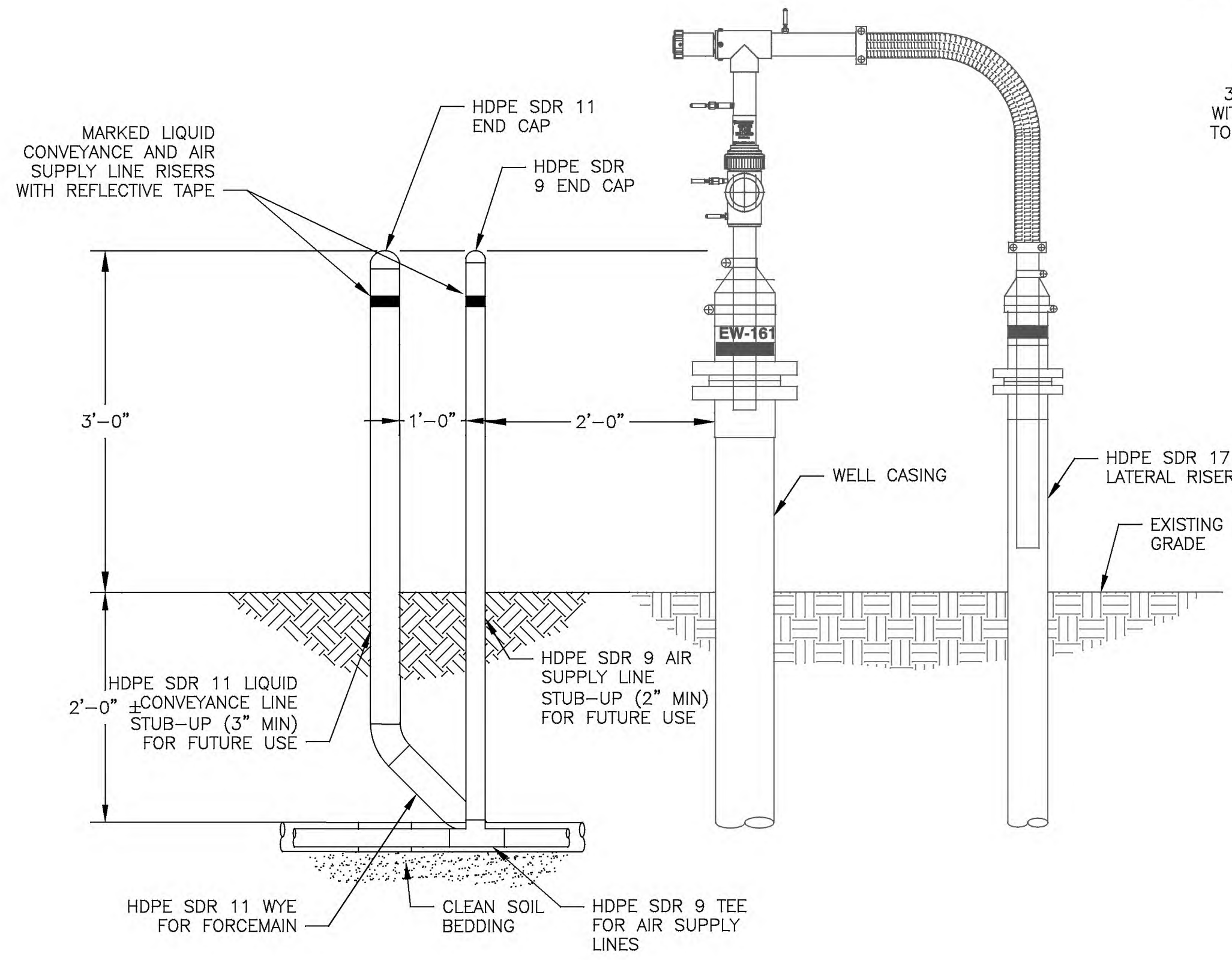
HEADER/LATERAL INSTALLATION ABOVE CAP DETAIL
NOT TO SCALE



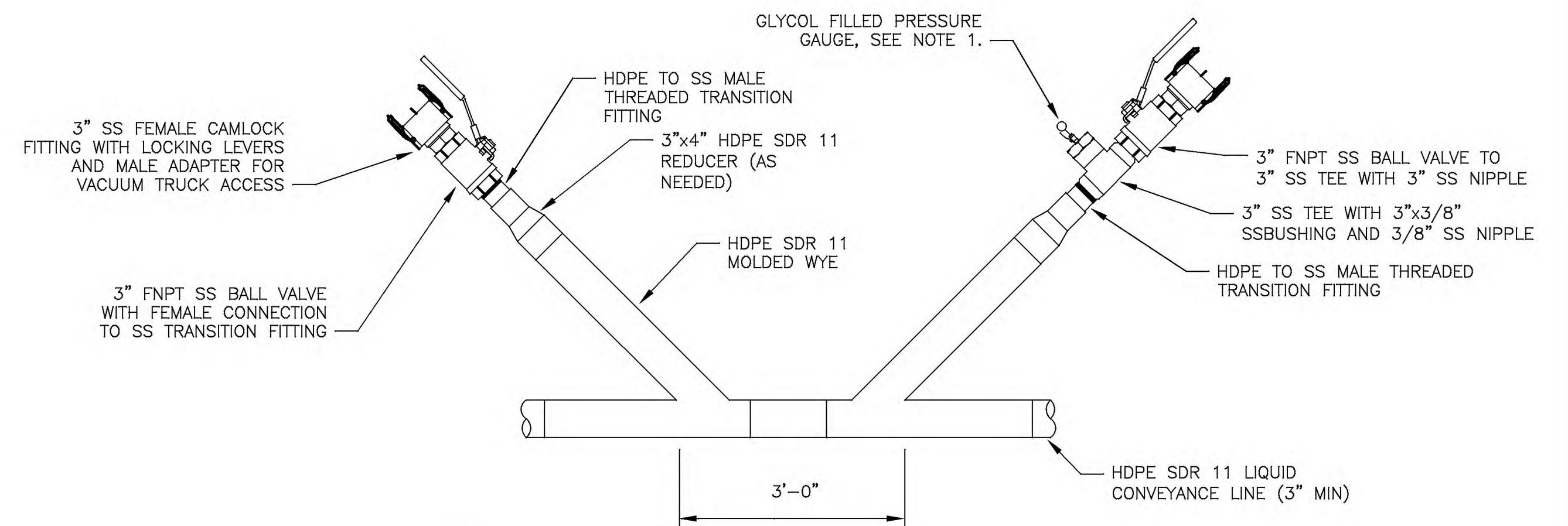
TYPICAL ROAD CROSSING DETAIL
NOT TO SCALE



WELL ABANDONMENT DETAIL
NOT TO SCALE

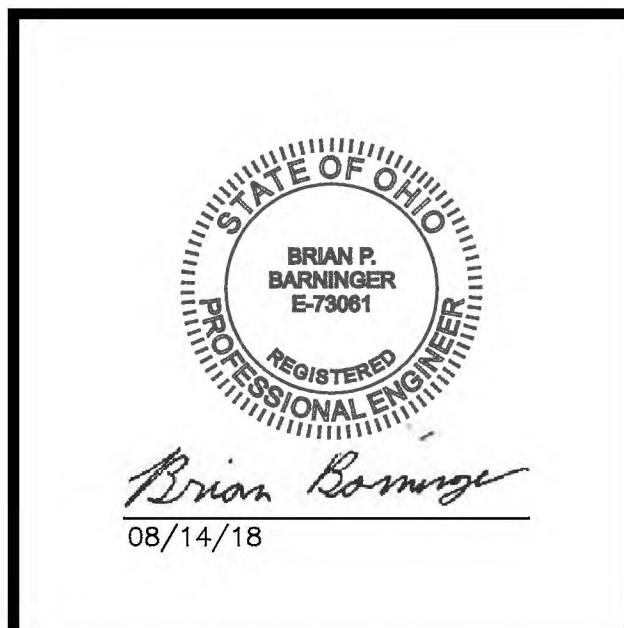


NEW STUB-UP AT EXIST. WELL DETAIL
NOT TO SCALE



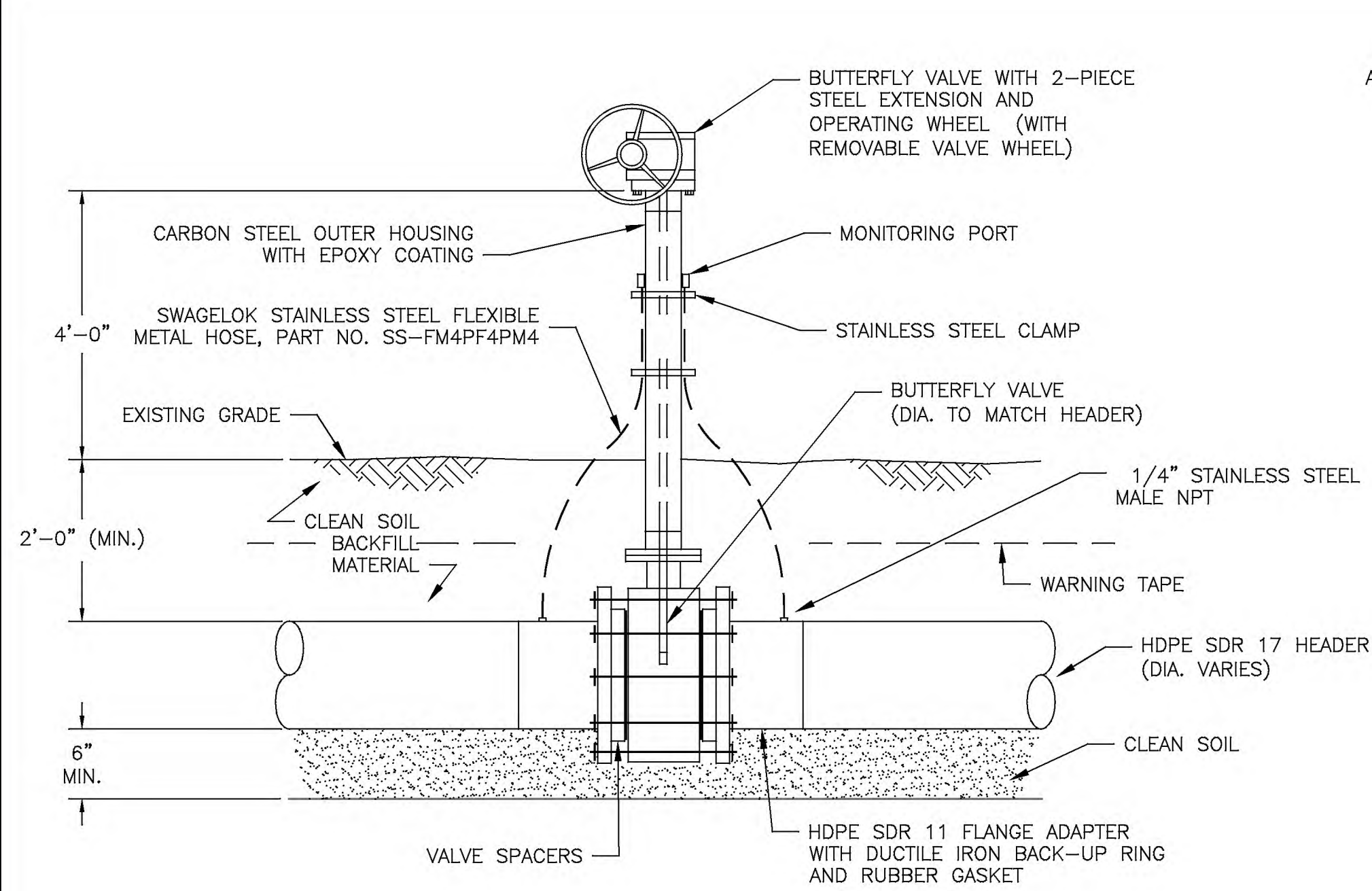
NOTES:
1. 3/8" SS BALL VALVE AND GLYCOL FILLED PRESSURE GAUGE (0-200 PSI RANGE).

LIQUID CONVEYANCE CLEANOUT DETAIL
NOT TO SCALE

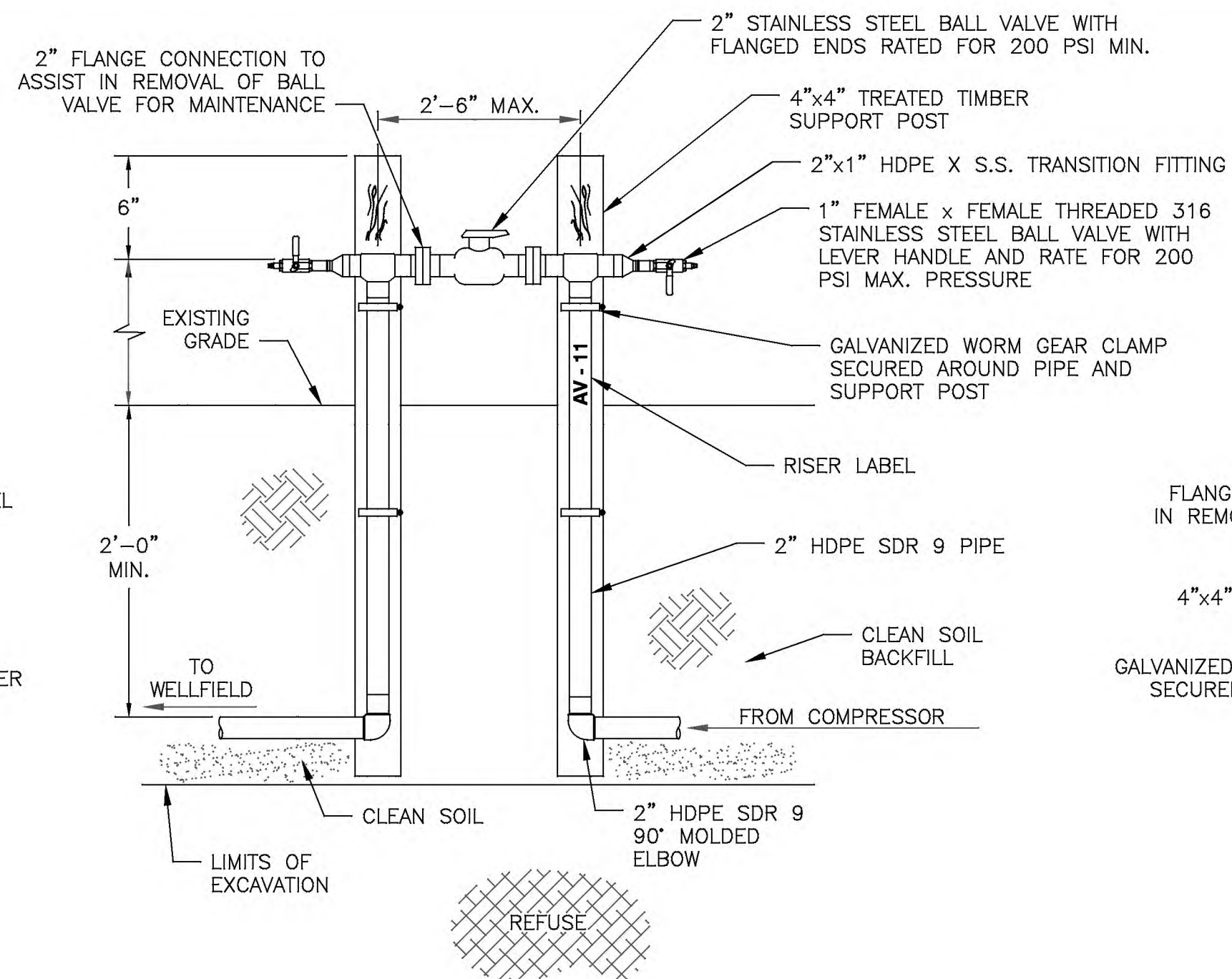


LORAIN COUNTY II LANDFILL			
2018 LFG SYSTEM CONSTRUCTION		DATE: 08/01/18	
RECORD DRAWING		DRAWN BY: MMB PROJECT NO: 2018.100	
DETAILS		REV. DATE DESCRIPTION CK. BY	
		DRAWING: 3 OF 7	

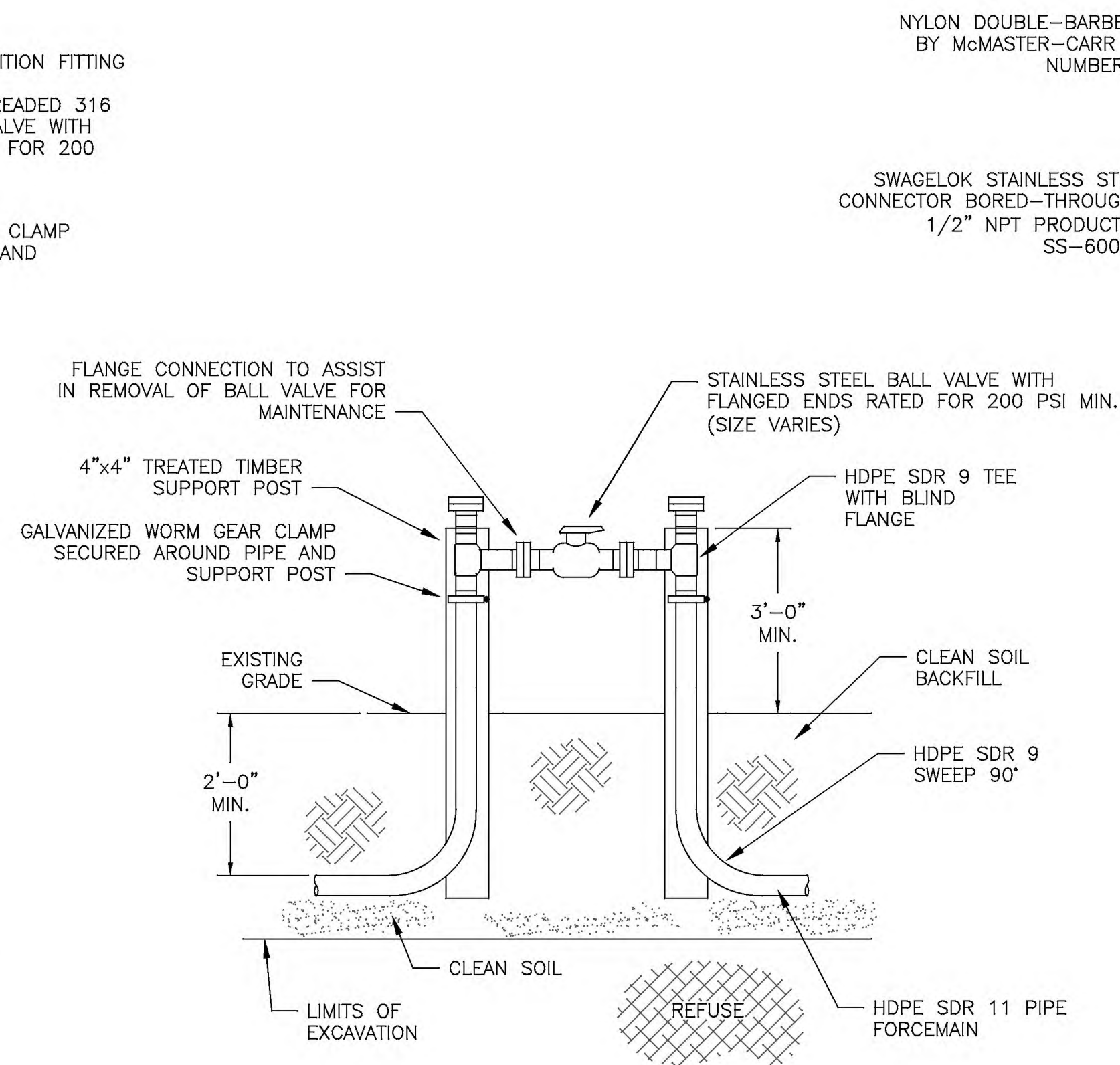
C:\egnyte\Shared\Bel-Eng\Lorain LP2018\Record Drawings\Spring Record2018 - Lorain II LFG - Spring Record Drawing - 073118.dwg



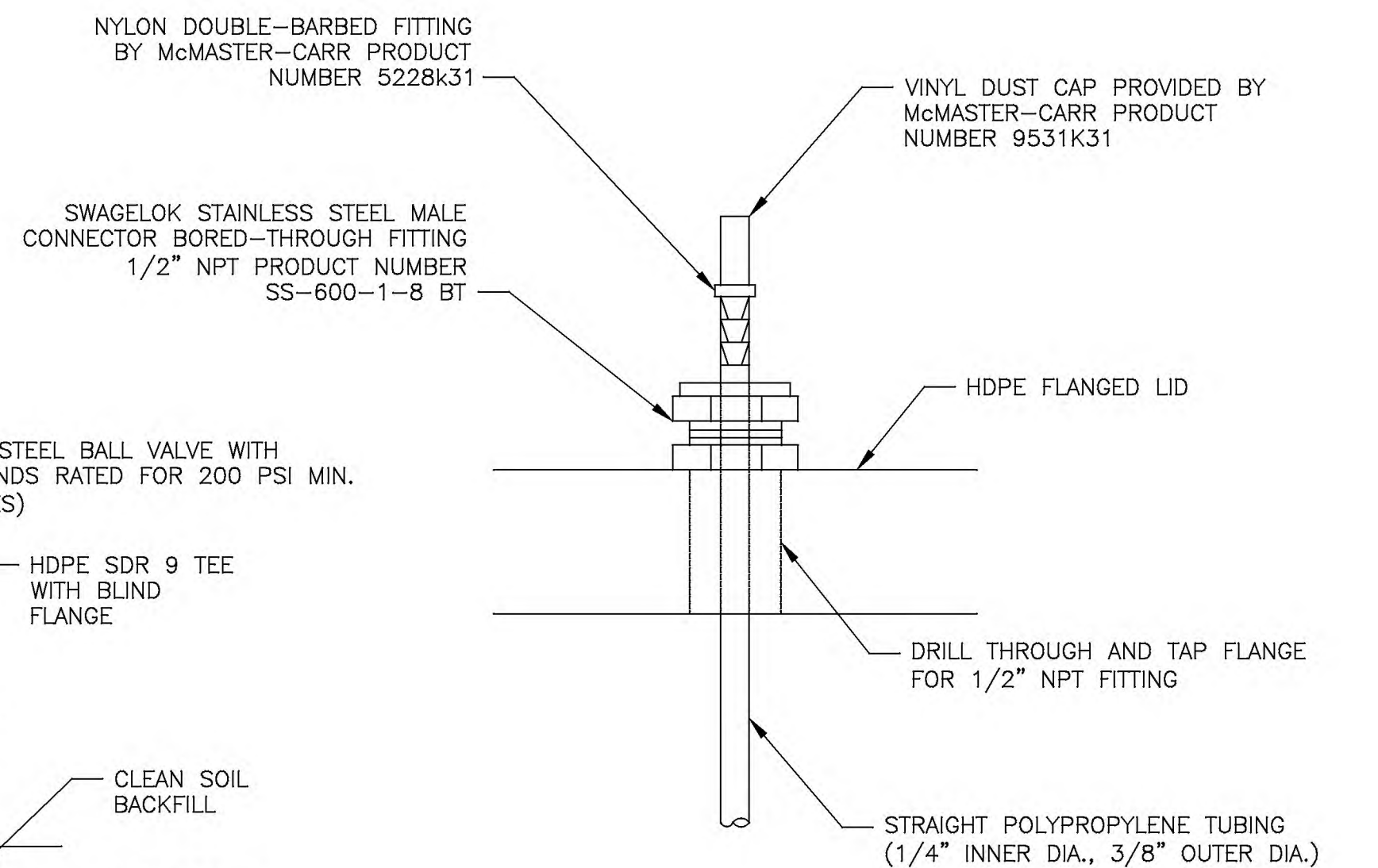
HEADER ISOLATION VALVE DETAIL 1/4
NOT TO SCALE



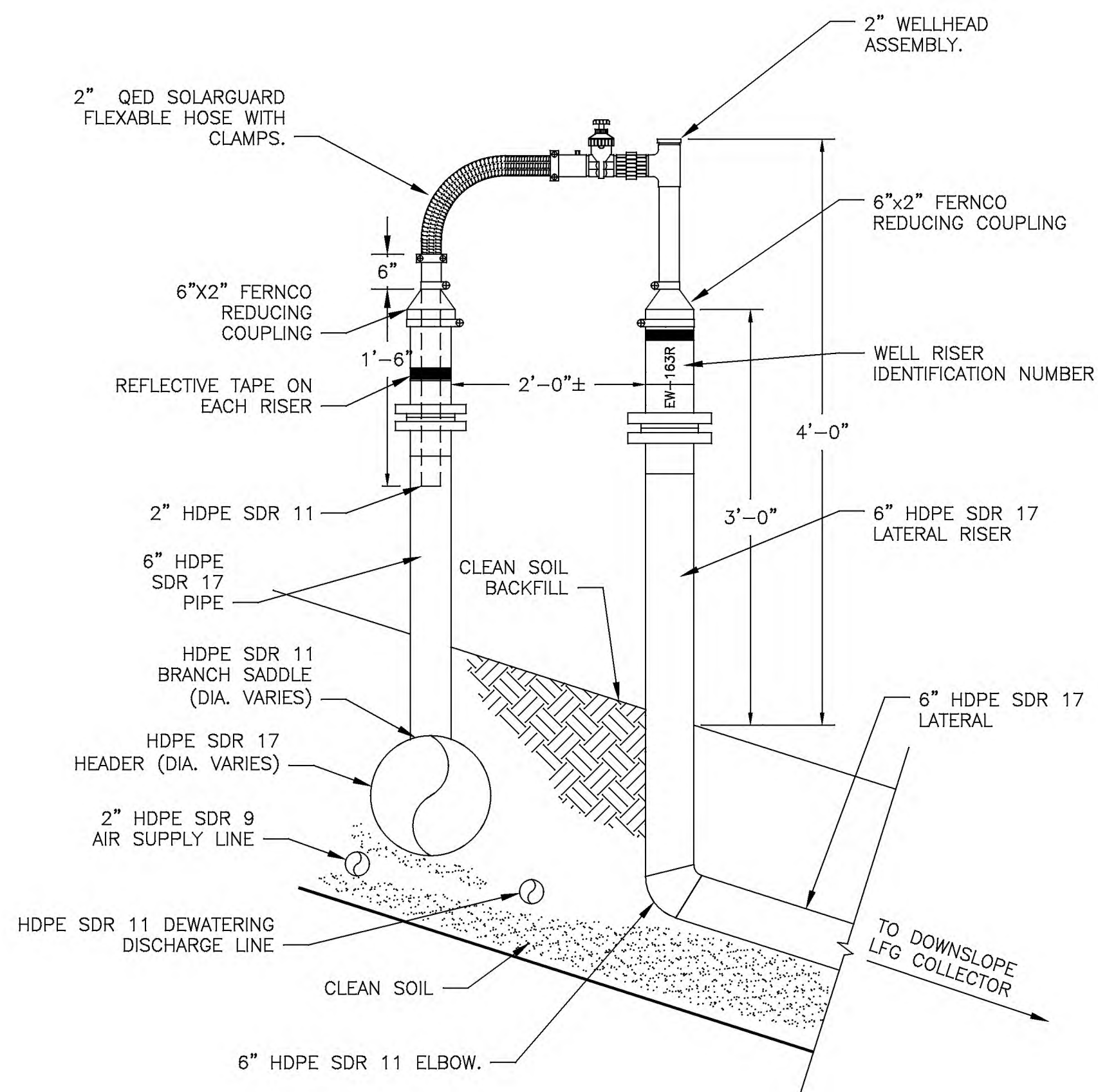
AIR LINE ISOLATION AND BLOWOFF VALVES DETAIL 2/4
NOT TO SCALE



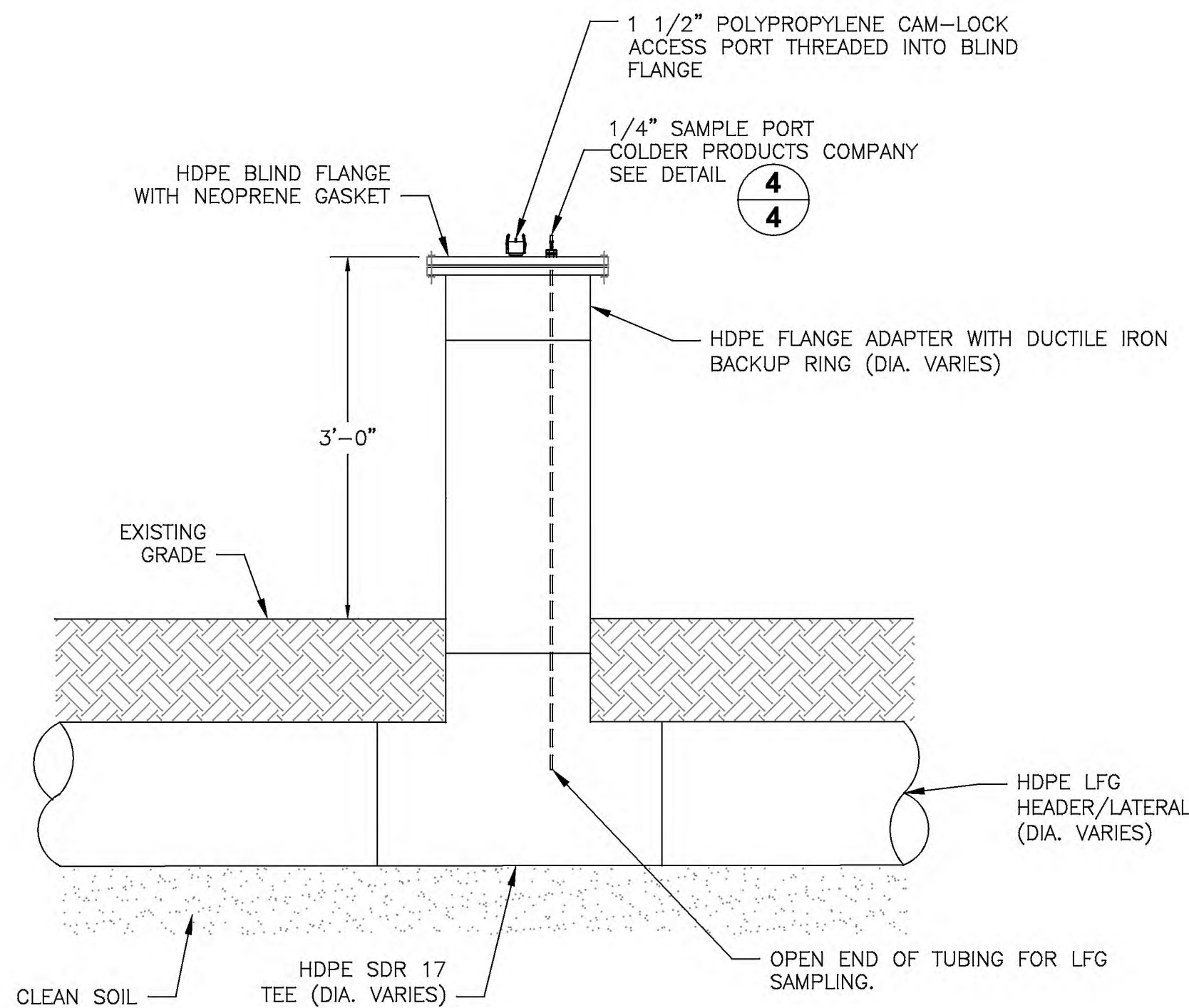
FORCEMAIN VALVE DETAIL 3/4
NOT TO SCALE



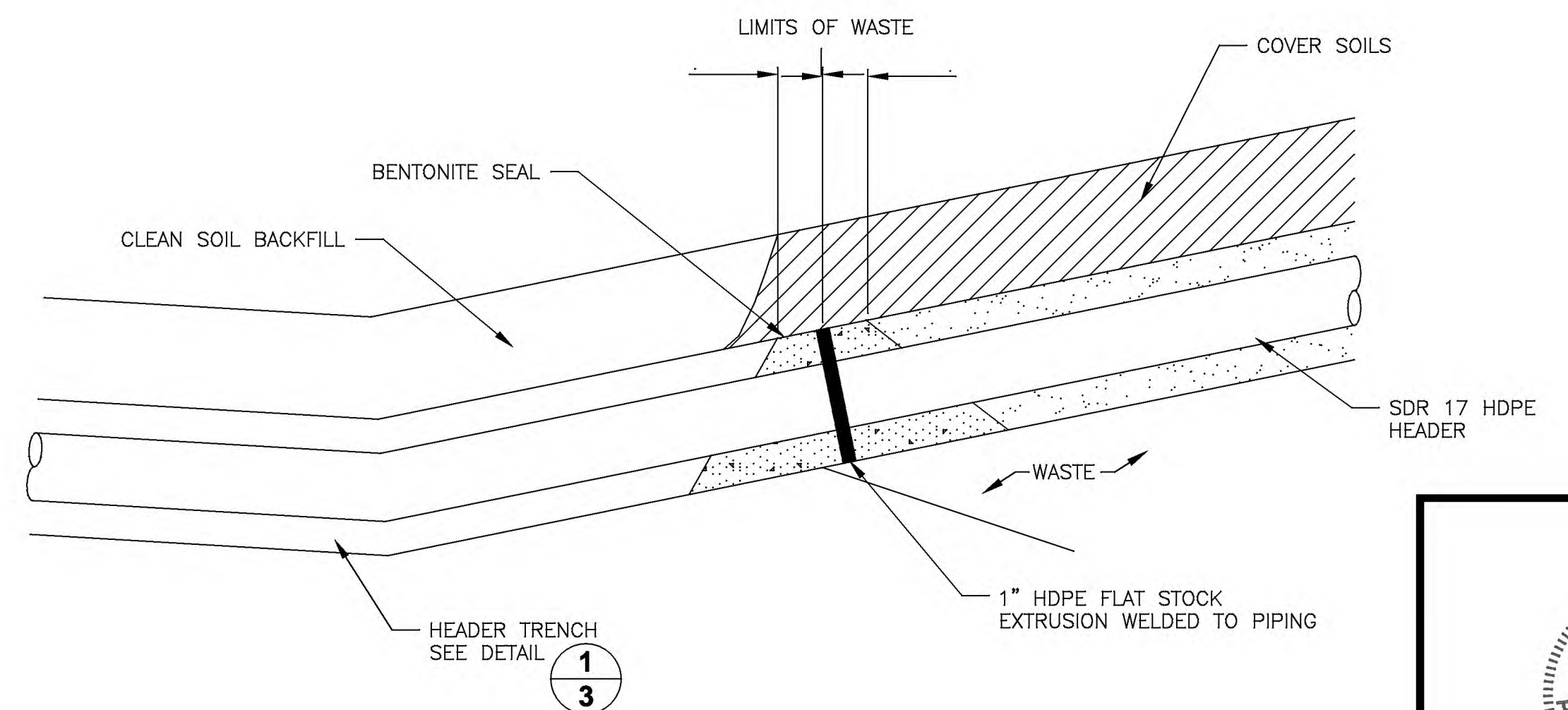
MONITORING PORT DETAIL 4/4
NOT TO SCALE



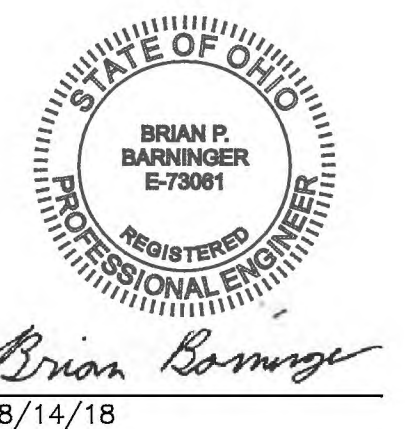
REMOTE WELLHEAD DETAIL 5/4
NOT TO SCALE



ACCESS RISER DETAIL 6/4
NOT TO SCALE



ANTI-SEEP COLLAR DETAIL 7/4
NOT TO SCALE



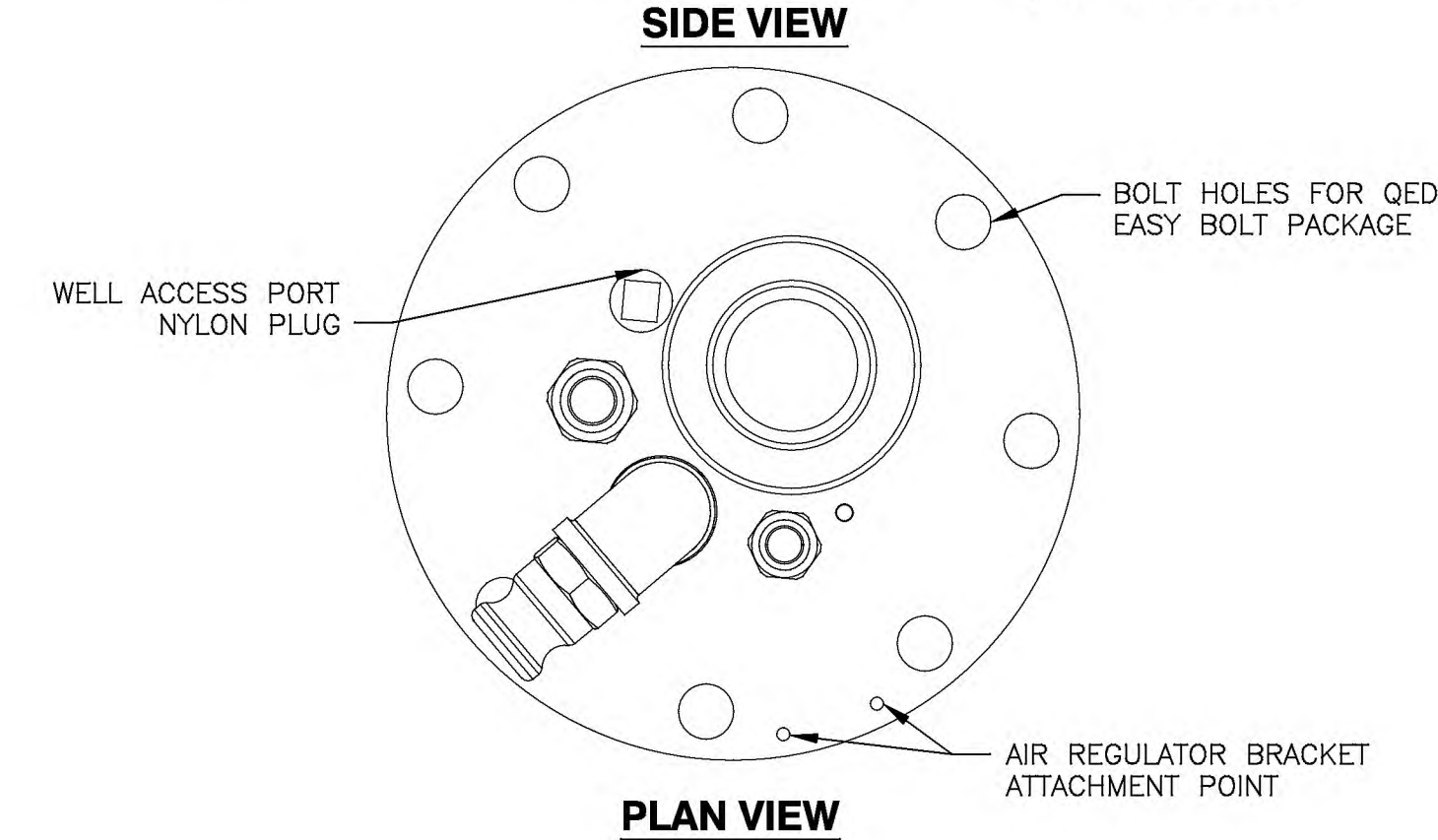
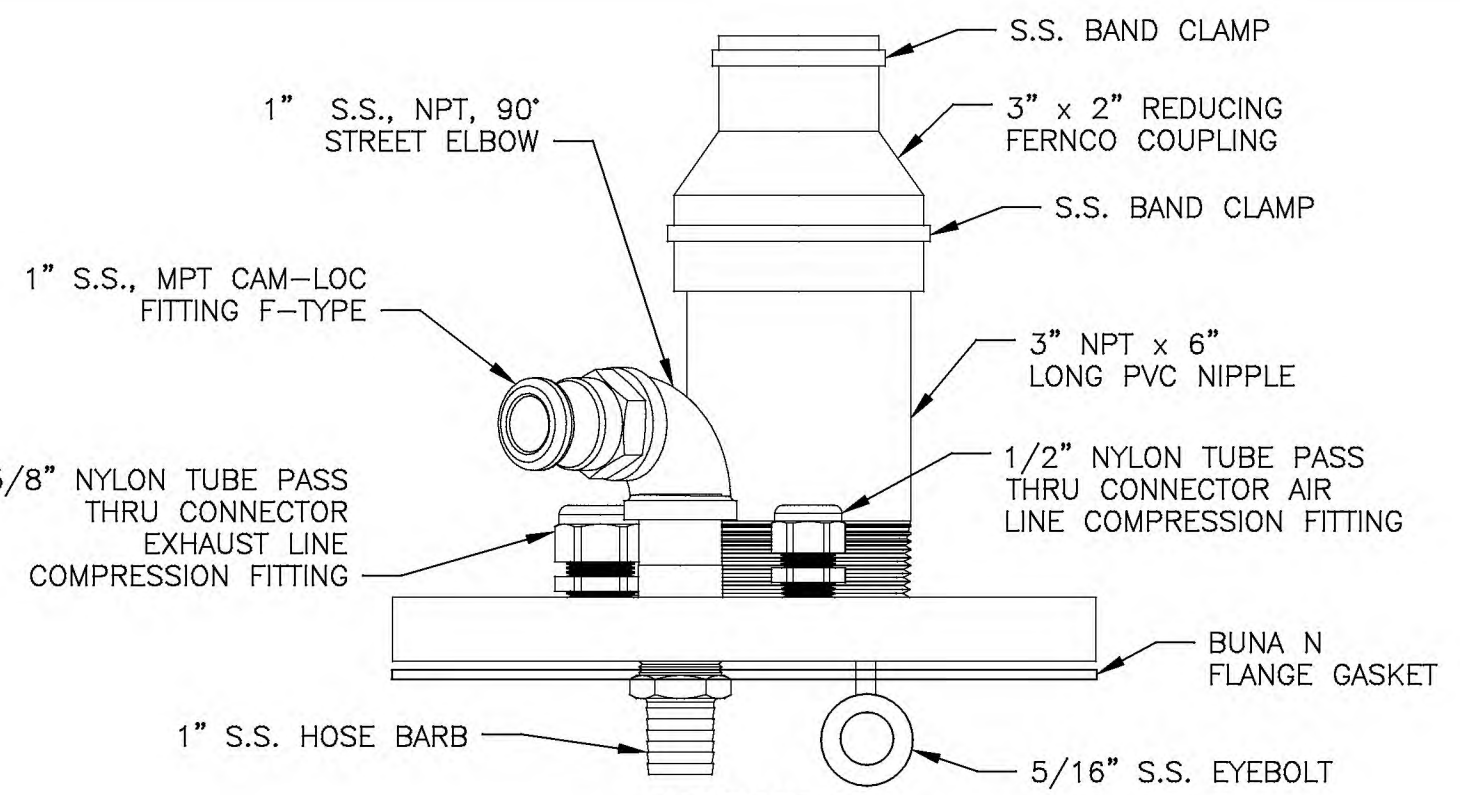
LORAIN COUNTY II LANDFILL

**2018 LFG SYSTEM
CONSTRUCTION
RECORD DRAWING
DETAILS**

DATE: 08/01/18			
DRAWN BY: MMB		PROJECT NO: 2018.100	
REV.	DATE	DESCRIPTION	CK. BY
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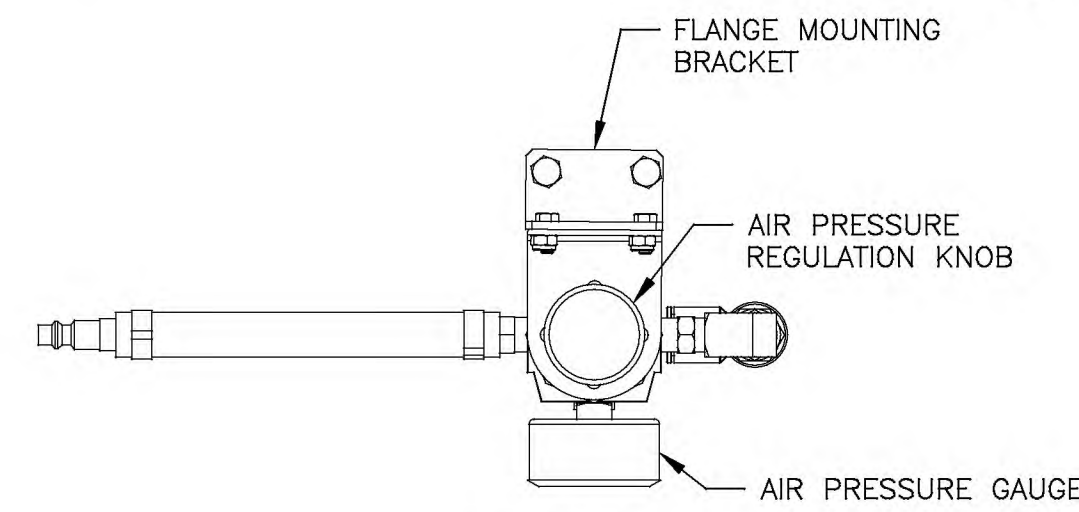


DRAWING:
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OF 7

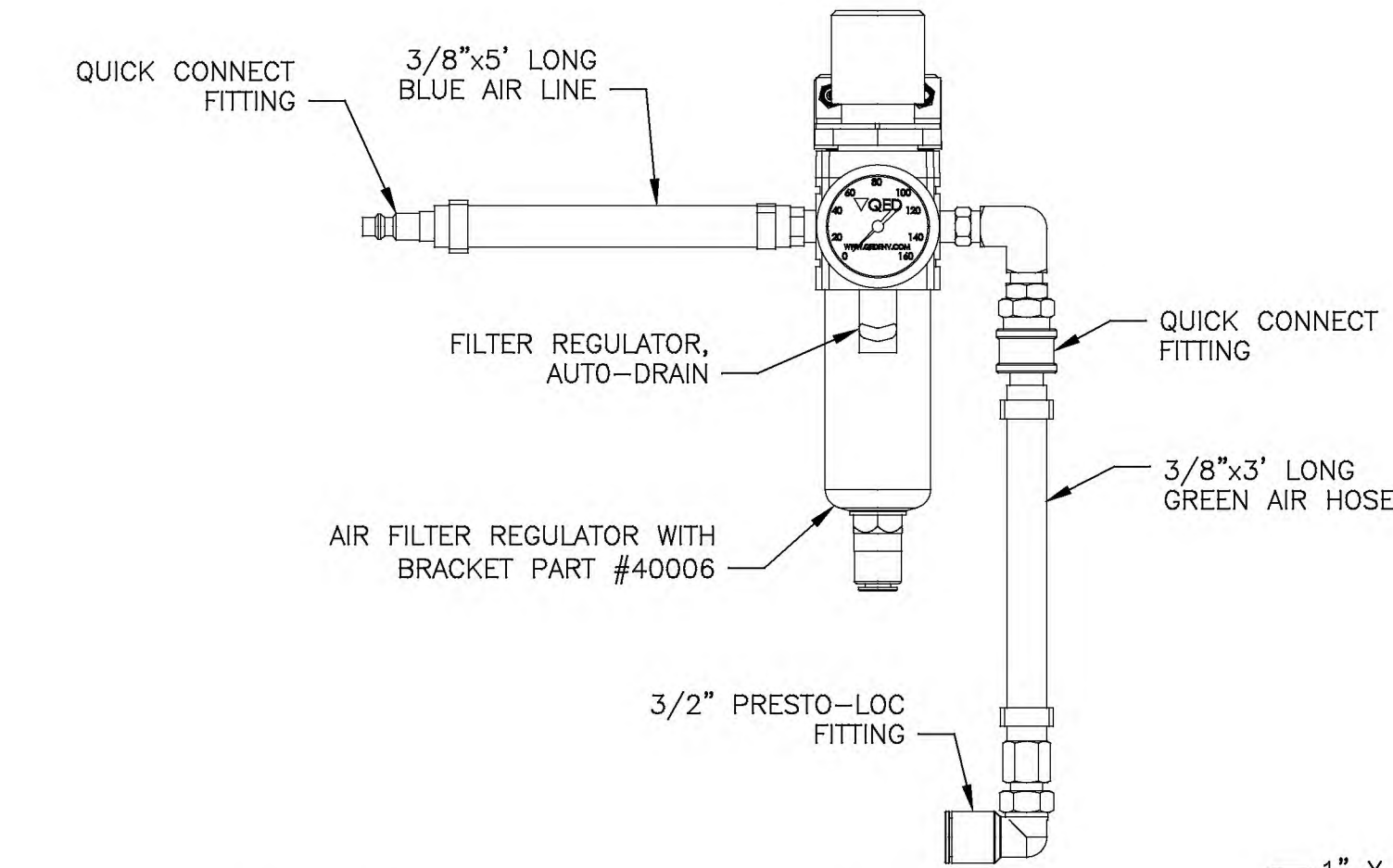


LANDFILL GAS/LEACHATE DUAL
EXTRACTION FLANGE COMPONENTS

1
5



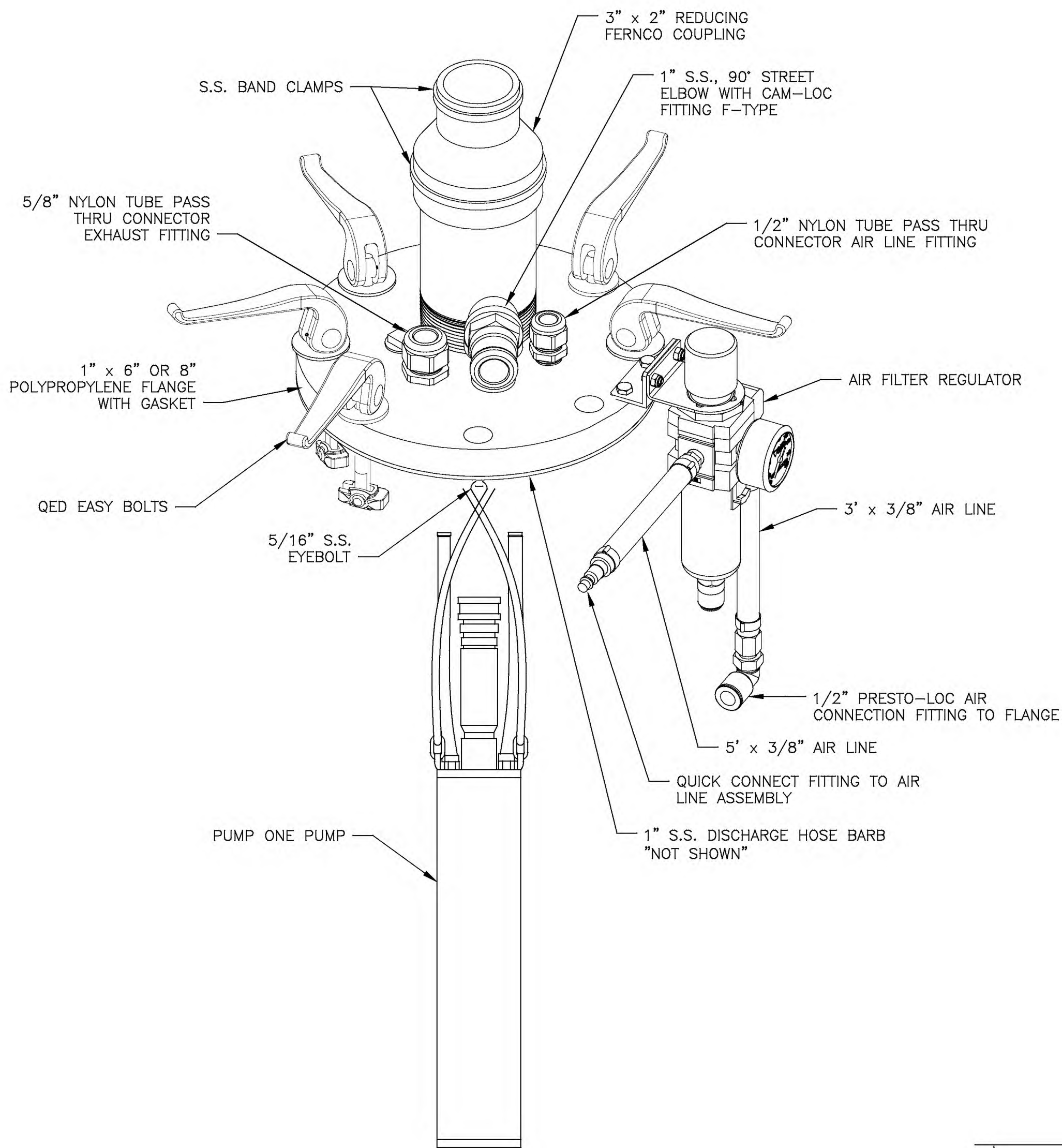
PLAN VIEW



SIDE VIEW

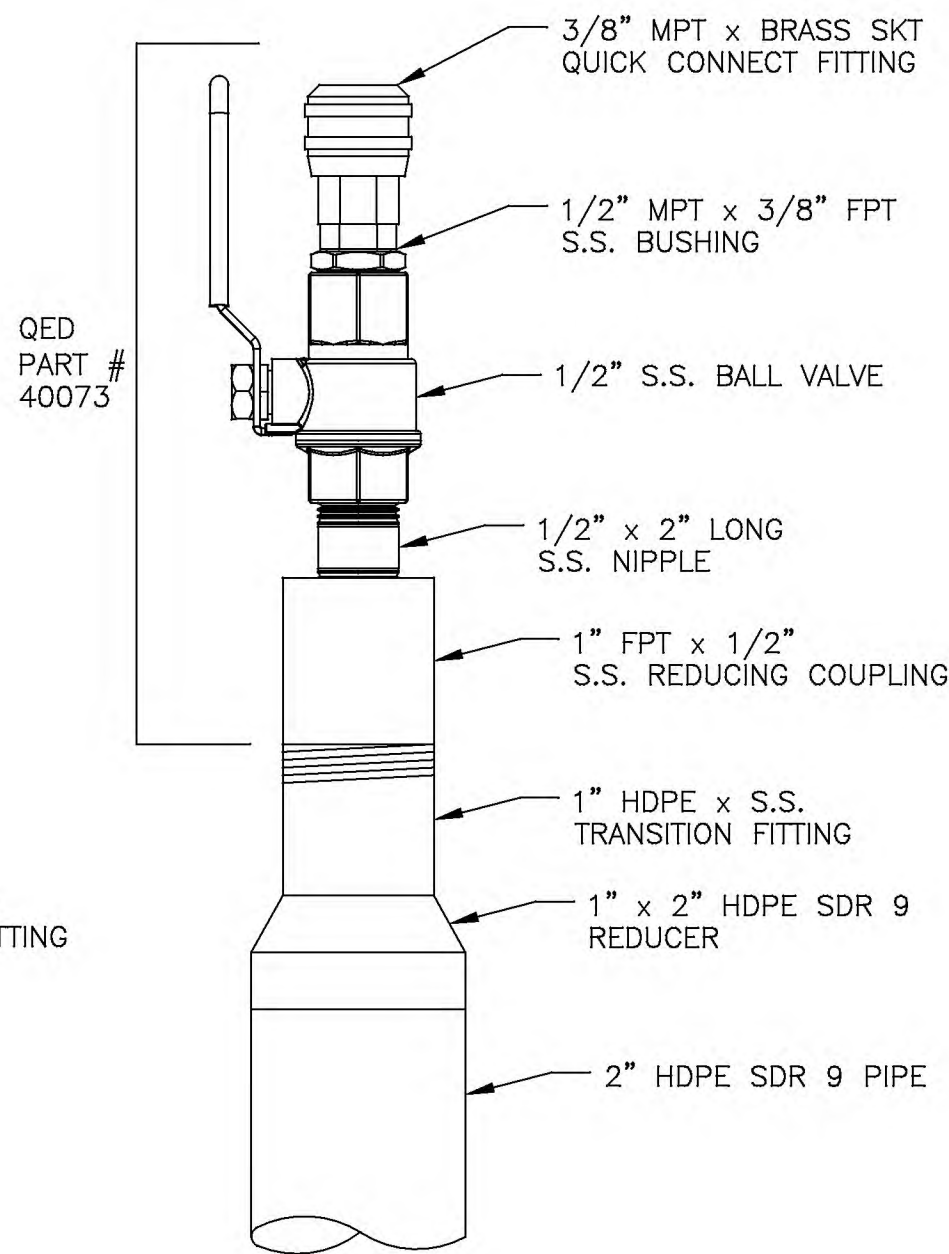
LANDFILL GAS/LEACHATE DUAL
EXTRACTION WELL AIR REGULATOR &
DISCHARGE LINE

4
5



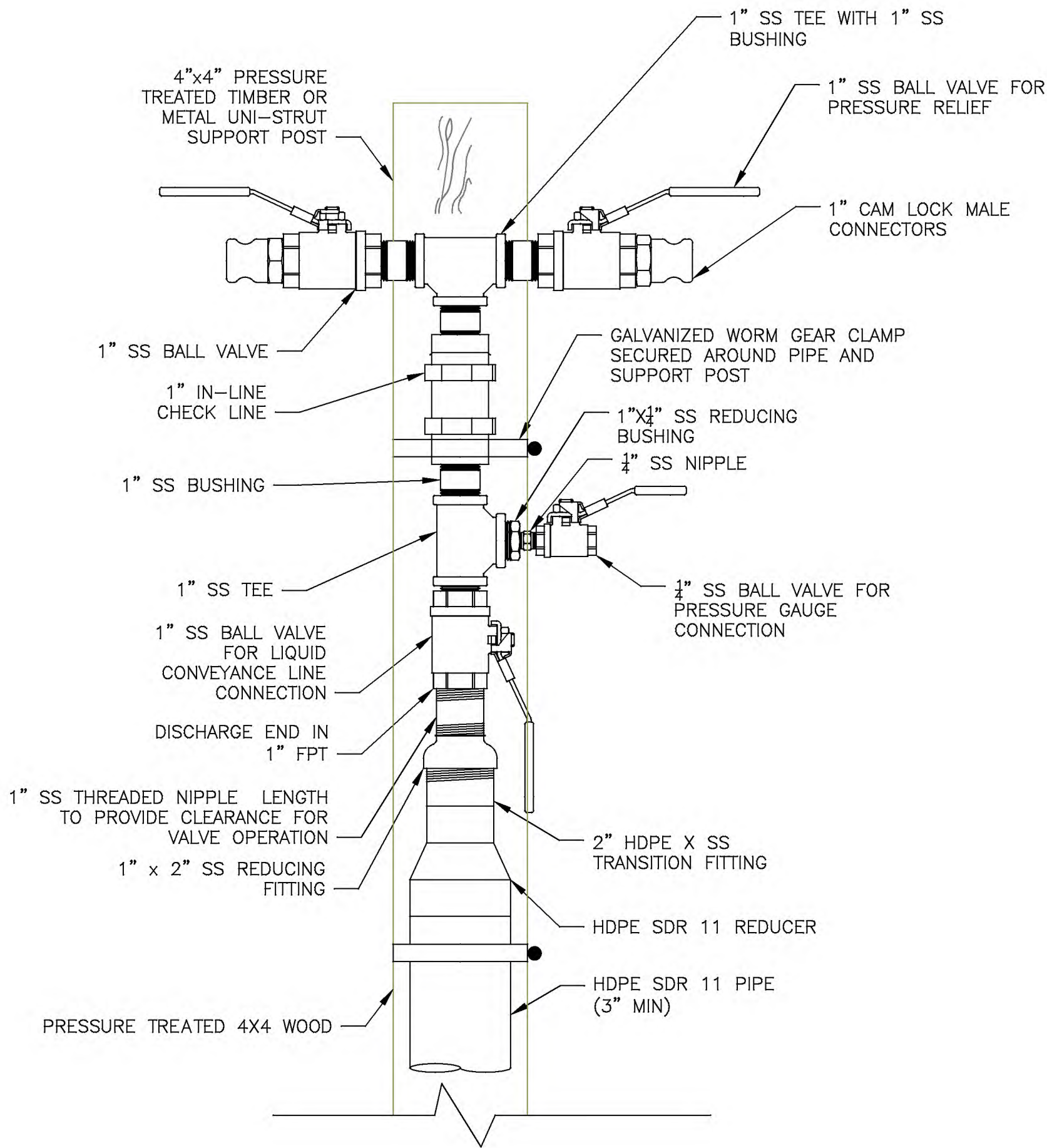
LANDFILL GAS/LEACHATE DUAL
EXTRACTION WELL COMPONENTS

2
5



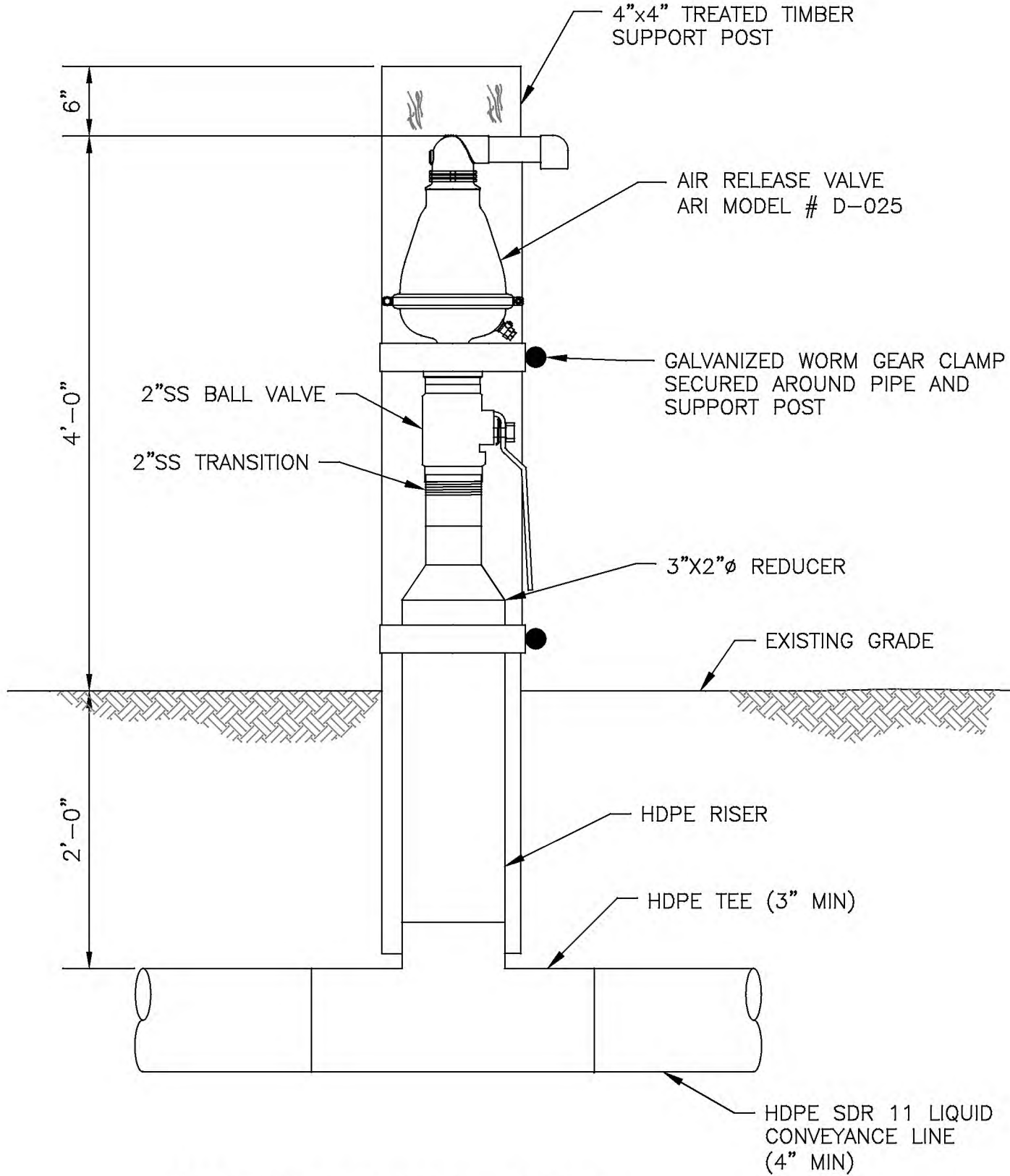
AIR SUPPLY LINE VALVE
(COLD CLIMATE) DETAIL

5
5



PUMP DISCHARGE
MANIFOLD DETAIL

3
5



LIQUID CONVEYANCE LINE
AIR RELEASE VALVE DETAIL

6
5



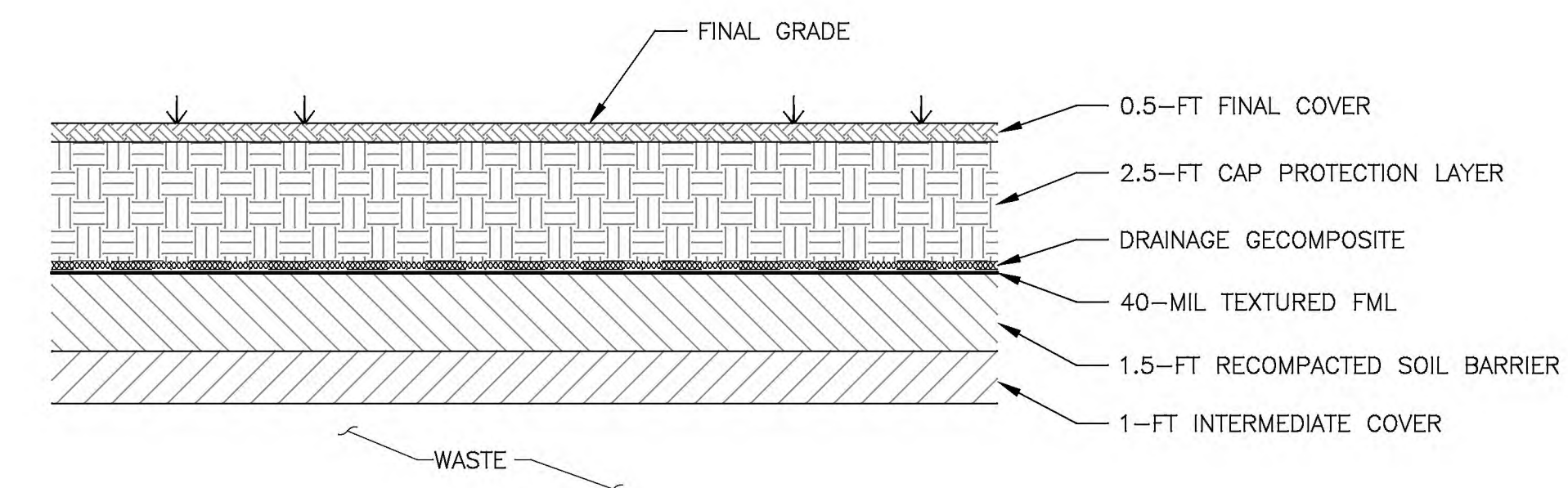
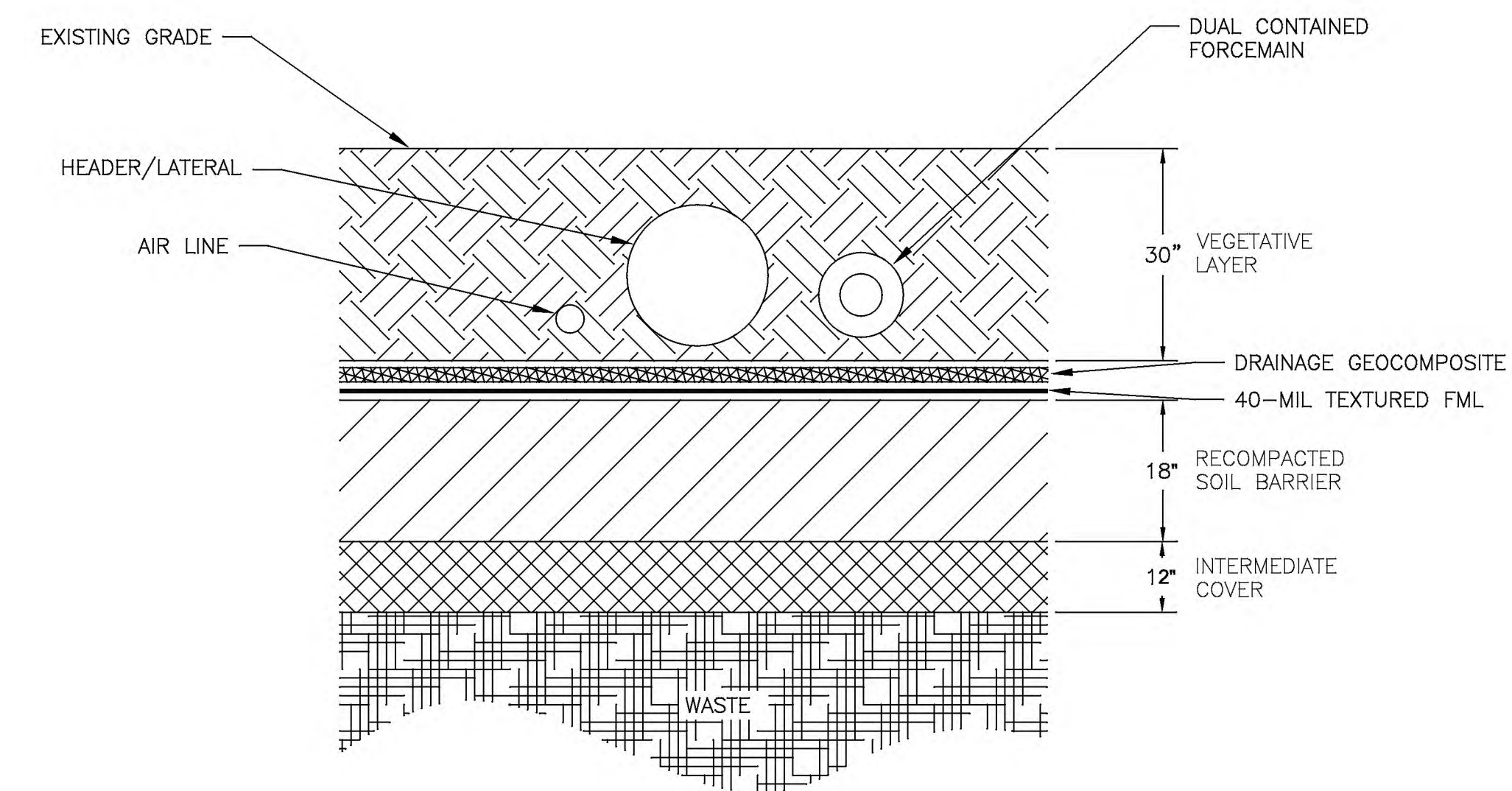
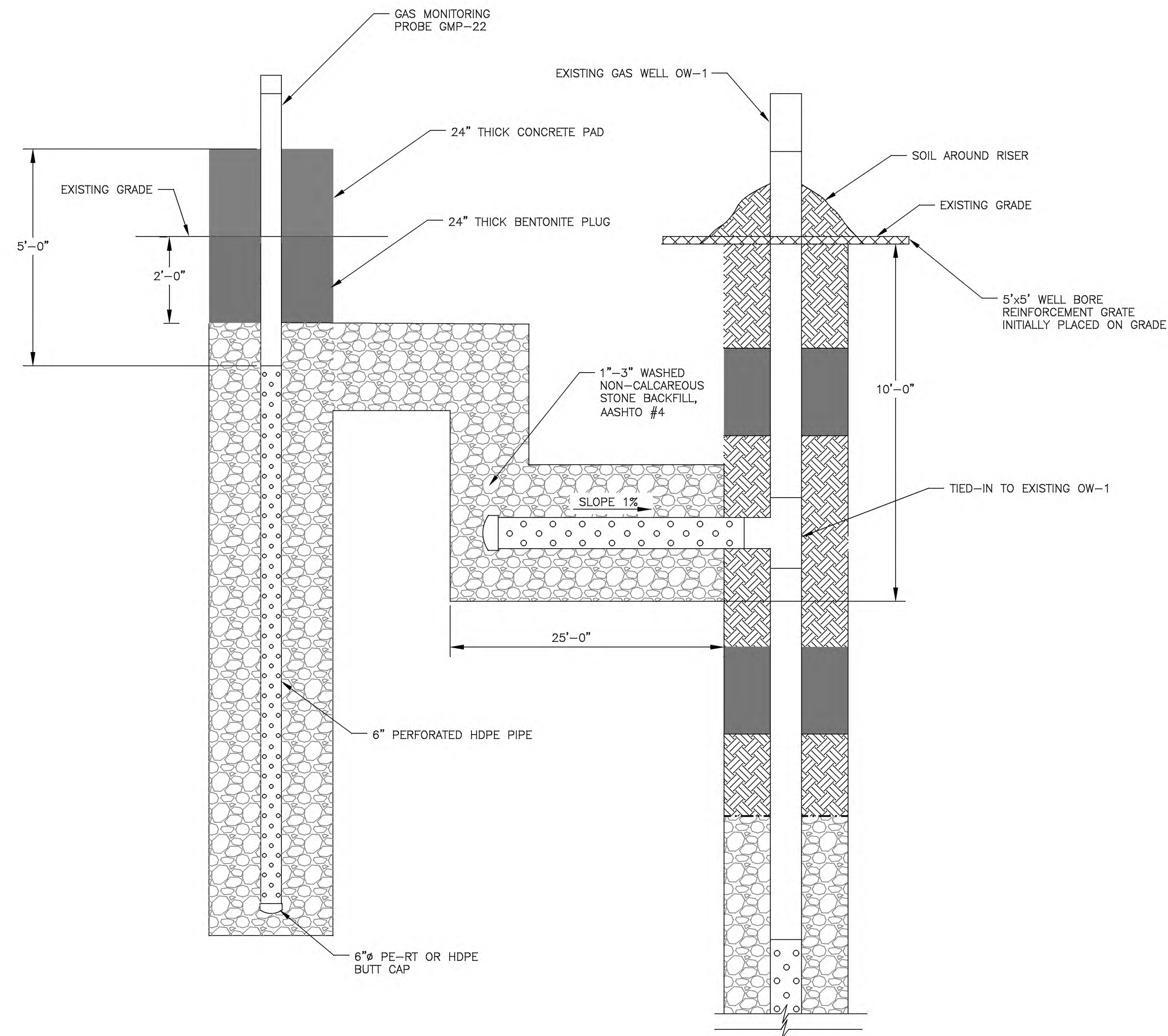
LORAIN COUNTY II LANDFILL

2018 LFG SYSTEM
CONSTRUCTION
RECORD DRAWING
DETAILS

DATE: 08/01/18	DRAWN BY: MMB	PROJECT NO: 2018.100
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LORAIN COUNTY II LANDFILL

2018 LFG SYSTEM CONSTRUCTION RECORD DRAWING DETAILS

DATE: 08/01/18			
DRAWN BY: MMB		PROJECT NO: 2018.100	
REV.	DATE	DESCRIPTION	CK. BY
-	-	-	-



DRAWING:
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OF 7

C:\Egnyte\Shared\Bel-Eng\Lorain LF2018\Record Drawings\Spring Record\2018 - Lorain II LFG - Spring Record Drawing - 073118.dwg

2018 LORAIN PHASE I AS-BUILT SURVEY POINTS				
Point #	Northing	Easting	Elevation	Description
100	596852.33	2059856.07		4INCH Tie-in for remote
101	598011.53	2060016.59		2INCH air 4INCH FM Tie-in for 305R
102	598885.84	2058889.13		Tie-In for lateral EW-360
103	598939.28	2058646.54		Tie-In for lateral EW-362
104	598906.7	2059712.4	809.05	12INCH x 6INCH Header for Lateral to 340R
105	598963.5	2058572.9		12INCH Header for Lateral to 364
106	598949.2	2058327.7	815.37	12INCH x 6INCH Header for Lateral to 355
107	598011.5	2060016.6		24INCH Header 4INCH FM 2INCH Air
108	598955.49	2058334.44	815.84	12IN HDR T/PIPE
109	598936.61	2058345.95	821.27	6IN LAT 2IN AIR 3IN FM GS
110	598955.50	2058334.19	817.47	12IN HDR GS
111	598937.34	2058345.76	818.80	6IN LAT 2IN AIR 3IN FM T/PIPE
112	598907.24	2058383.74	833.58	6IN 90 GS
113	598907.51	2058383.13	830.43	6IN 90 T/PIPE
114	598904.74	2058384.03	833.99	EW-355R GS
115	598925.61	2058579.68	825.22	6IN LAT 2IN AIR 3IN FM GS
116	598927.67	2058579.56	821.68	6IN LAT 2IN AIR 3IN FM T/PIPE
117	598937.05	2058577.68	822.63	EW-364 GS
118	598938.48	2058580.40	821.64	6IN LAT 2IN AIR 3IN FM TEES GS
119	598939.54	2058580.39	818.52	6IN LAT 2IN AIR 3IN FM TEES T/PIPE
120	598958.41	2058581.82	816.66	12N VALVE GS
121	598957.69	2058585.19	816.27	12X6 TEE 4X3 TEE 2IN TEE GS
122	598958.72	2058586.01	812.91	12X6 TEE 4X3 TEE 2IN TEE T/PIPE
123	598879.51	2058594.62	837.58	6IN LAT 2IN AIR 3IN FM GS
124	598880.53	2058595.64	833.43	6IN LAT 2IN AIR 3IN FM T/PIPE
125	598820.33	2058618.77	857.98	EW-362 GS
126	598820.87	2058614.50	857.60	6IN LAT 2IN AIR 3IN FM GS
127	598820.81	2058614.37	853.43	6IN LAT 2IN AIR 3IN FM T/PIPE
128	598783.27	2058616.11	859.82	6IN LAT 2IN AIR 3IN FM GS
129	598783.72	2058615.81	856.42	6IN LAT 2IN AIR 3IN FM T/PIPE
130	598737.73	2058623.85	870.84	6IN LAT 2IN AIR 3IN FM GS
131	598738.95	2058622.87	866.64	6IN LAT 2IN AIR 3IN FM T/PIPE
132	598687.54	2058633.13	875.96	6IN LAT 2IN AIR 3IN FM GS
133	598688.25	2058632.45	872.61	6IN LAT 2IN AIR 3IN FM T/PIPE
134	598637.85	2058640.33	877.71	6IN LAT 2IN AIR 3IN FM 90s GS
135	598638.57	2058639.17	875.21	6IN LAT 2IN AIR 3IN FM 90s T/PIPE
136	598636.45	2058638.33	877.34	EW-363 GS
137	598639.13	2058933.52	878.61	EW-361 GS
138	598641.16	2058931.14	879.15	6IN LAT 2IN AIR 3IN FM 90s GS
139	598640.97	2058930.75	876.99	6IN LAT 2IN AIR 3IN FM 90s T/PIPE
140	598685.08	2058912.53	878.10	6IN LAT 2IN AIR 3IN FM GS
141	598684.52	2058912.76	874.44	6IN LAT 2IN AIR 3IN FM T/PIPE
142	598727.37	2058893.38	871.12	6IN LAT 2IN AIR 3IN FM GS
143	598728.62	2058893.14	867.26	6IN LAT 2IN AIR 3IN FM T/PIPE
144	598769.14	2058876.55	859.65	6IN LAT 2IN AIR 3IN FM GS
145	598769.05	2058876.73	856.58	6IN LAT 2IN AIR 3IN FM T/PIPE
146	598806.57	2058872.20	856.84	6IN LAT 2IN AIR 3IN FM TEES GS
147	598808.16	2058870.98	852.53	6IN LAT 2IN AIR 3IN FM TEES T/PIPE
148	598806.58	2058868.95	857.29	EW-360 GS
149	598867.17	2058882.46	838.07	6IN LAT 2IN AIR 3IN FM GS
150	598867.43	2058882.94	833.15	6IN LAT 2IN AIR 3IN FM T/PIPE
151	598890.30	2058887.29	831.04	12X6 TEE 4X3 TEE 2IN TEE GS
152	598891.17	2058887.44	824.99	12X6 TEE 4X3 TEE 2IN TEE T/PIPE
153	598964.31	2058780.67	809.87	2IN AIR 3IN FM 90 6IN LAT TEE GS
154	598964.81	2058779.46	806.27	2IN AIR 3IN FM 90 6IN LAT TEE T/PIPE
155	598964.83	2058779.34	810.06	EW-359 GS
156	598954.40	2058766.18	813.11	6IN LAT 2IN AIR 3IN FM GS
157	598954.47	2058765.54	809.28	6IN LAT 2IN AIR 3IN FM T/PIPE
158	598925.75	2058727.90	823.20	6IN 90 EW-359 REMOTE GS
159	598925.56	2058728.08	820.20	6IN 90 EW-359 REMOTE T/PIPE
160	598921.83	2058729.63	824.58	2IN TEE 3IN TEE GS
161	598922.22	2058730.07	822.69	2IN TEE 3IN TEE T/PIPE
162	598921.51	2058728.53	824.40	12X6 TEE GS
163	598921.58	2058728.78	818.79	12X6 TEE T/PIPE
164	598922.48	2058726.15	824.05	6IN 90 GS
165	598922.06	2058726.57	818.79	6IN 90 T/PIPE
166	598879.64	2059675.01	824.85	12X6 TEE 2IN AIR 3IN FM GS
167	598879.32	2059675.66	821.39	12X6 TEE 2IN AIR 3IN FM T/PIPE

168	598840.76	2059701.18	835.91	6IN LAT GS
169	598842.81	2059701.98	831.74	6IN LAT T/PIPE
170	598819.46	2059710.58	840.65	6IN LAT 2IN AIR 3IN FM TEES GS
171	598819.46	2059708.69	839.69	6IN LAT 2IN AIR 3IN FM TEES T/PIPE
172	598793.39	2059708.49	848.87	6IN LAT 2IN AIR 3IN FM GS
173	598793.78	2059709.48	846.87	6IN LAT 2IN AIR 3IN FM T/PIPE
174	598746.58	2059695.12	859.33	6IN LAT 2IN AIR 3IN FM GS
175	598746.74	2059694.66	857.27	6IN LAT 2IN AIR 3IN FM T/PIPE
176	598697.97	2059682.41	861.75	6IN LAT 2IN AIR 3IN FM GS
177	598650.83	2059669.02	862.23	6IN LAT 2IN AIR 3IN FM GS
178	598651.61	2059668.87	857.92	6IN LAT 2IN AIR 3IN FM T/PIPE
179	598601.88	2059652.88	863.05	6IN LAT 2IN AIR 3IN FM 90s GS
180	598601.19	2059653.38	860.70	6IN LAT 2IN AIR 3IN FM 90s T/PIPE
181	597160.54	2059851.49	811.61	12 90 T/PIPE
182	597159.58	2059850.08	811.83	12 FLANG T/PIPE
183	597145.23	2059824.86	817.66	12IN HDR T/PIPE
184	597133.34	2059801.95	823.85	12X12 TEE 6IN REDUCER T/PIPE
185	597132.42	2059799.70	824.32	12X12 TEE 6IN REDUCER HDR T/PIPE
186	597130.10	2059803.64	823.74	6IN 45 T/PIPE
187	597135.92	2059797.85	824.67	6IN 45 T/PIPE
188	597166.21	2059759.98	831.59	6IN LAT GS
189	597166.27	2059760.84	829.59	6IN LAT T/PIPE
190	597193.77	2059722.26	838.27	6IN LAT T/PIPE
191	597193.82	2059722.07	838.25	6IN LAT T/PIPE
192	597193.33	2059721.72	839.36	6IN LAT GS
193	597123.26	2059782.18	829.75	12IN HDR GS
194	597123.26	2059784.22	827.97	12IN HDR T/PIPE
195	597099.02	2059800.58	827.56	6IN LAT GS
196	597099.61	2059801.16	825.84	6IN LAT T/PIPE
197	597049.36	2059791.42	829.25	6IN LAT GS
198	597049.82	2059791.85	828.72	6IN LAT T/PIPE
199	597090.19	2059746.93	840.40	12IN HDR GS
200	597089.68	2059747.71	837.68	12IN HDR T/PIPE
201	597057.88	2059711.84	850.05	12IN HDR GS
202	597057.55	2059712.88	848.22	12IN HDR T/PIPE
203	597026.21	2059672.12	856.71	12IN HDR GS
204	597025.47	2059672.71	855.87	12IN HDR T/PIPE
205	598008.61	2059970.51	814.29	2IN AIR 3IN FM GS
206	598008.34	2059970.54	811.50	2IN AIR 3IN FM T/PIPE
207	598007.08	2060014.07	810.19	2IN AIR 3X4 FM TEES GS
208	598007.52	2060013.43	805.51	2IN AIR 3X4 FM TEES T/PIPE
209	598018.58	2059916.02	827.29	2IN AIR 3IN FM 90s GS
210	598017.22	2059916.65	824.54	2IN AIR 3IN FM 90s T/PIPE
211	597927.08	2059856.95	840.83	EW-301R3 GS
212	597931.05	2059857.13	840.87	6IN LAT 2IN AIR 3IN FM 90s GS
213	597931.48	2059857.55	838.07	6IN LAT 2IN AIR 3IN FM 90s T/PIPE
214	597917.73	2059881.92	834.06	6IN LAT 2IN AIR 3IN FM TEES GS
215	597917.34	2059881.76	830.92	6IN LAT 2IN AIR 3IN FM TEES T/PIPE
216	597974.73	2059589.62	865.38	6IN LAT 2IN AIR 3IN FM 90s GS
217	597974.68	2059590.01	863.58	6IN LAT 2IN AIR 3IN FM 90s T/PIPE
218	598006.52	2059545.28	877.41	EW-307R3 GS
219	598007.27	2059547.60	877.18	6IN LAT 2IN AIR 3IN FM 90s GS
220	598007.86	2059548.29	875.62	6IN LAT 2IN AIR 3IN FM 90s T/PIPE
221	596988.86	2058804.35	906.89	8X6IN TEE GS
222	597010.04	2058814.63	909.00	6IN LAT GS
223	597009.76	2058814.59	905.89	6IN LAT T/PIPE
224	597055.75	2058835.60	912.42	6IN LAT GS
225	597055.52	2058835.58	908.75	6IN LAT T/PIPE
226	597100.04	2058856.81	912.77	6IN 90 GS
227	597100.15	2058856.73	910.48	6IN 90 T/PIPE
228	596998.70	2059579.77	870.28	2 3 0 GS
229	596997.62	2059579.16	867.45	2 3 0 T/PIPE
230	597003.91	2059567.84	870.81	6IN LAT GS
231	597004.21	2059567.29	866.59	6IN LAT T/PIPE
232	596992.33	2059535.04	872.37	2 3 0 6IN 90 GS
233	597073.35	2059163.47	895.13	6IN LAT 2 3 0 GS
234	597073.11	2059164.77	893.27	6IN LAT 2 3 0 T/PIPE
235	597109.71	2059139.55	904.85	6IN 90 2 3 0 90 GS
236	597109.06	2059140.31	902.24	6IN 90 2 3 0 90 GS



LORAIN COUNTY II LANDFILL

2018 LFG SYSTEM CONSTRUCTION RECORD DRAWING DETAILS	DATE: 08/01/18 DRAWN BY: MMB	PROJECT NO: 2018.100		
	REV.	DATE	DESCRIPTION	CK. BY
				DRAWING: 7 OF 7