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SEP 28 2012

September 28, 2012

OHIO EPA NEDO

Brown AND
Caldwell

Mr. Jerry L. Parker
Environmental Engineer
Ohio Environmental Protection Agency
Northeast District Office
Division of Solid and Infectious Waste Management
2110 East Aurora Road
Twinsburg, Ohio 44087

142487

Subject: Comment Responses
2012 GCCS - Phase I Construction Certification Report
Lorain County II Landfill
Oberlin, Ohio

Dear Mr. Parker:

Brown and Caldwell Ohio, LLC, on behalf of Republic Services, Inc. (Republic), respectfully submits responses to deficiencies/comments received from the Ohio Environmental Protection Agency (Ohio EPA) Northeast District Office (NEDO) for the Lorain County II Landfill 2012 GCCS - Phase 1 Construction Certification Report. The deficiency/comment responses are based on the e-mail to Chris Jaquet of Republic dated September 25, 2012. Each deficiency/comment is presented in bold followed by a response in the following narrative.

A "Revisions Instruction Sheet" is also enclosed to assist with updating the hard copy of the 2012 GCCS - Phase 1 Construction Certification Report.

I. DEFICIENCY ONE
INTRODUCTION
FIELD ALTERATIONS / DEVIATIONS

The second bullet on page 1-2 of Section 1.1, "Field Alterations / Deviations", states the following in part "Pumps were lost in original well locations for EW-87R2, TEW-5R2, and EW-35R2. Therefore, no pumps were installed in the well re-drill locations. In addition, no pump was installed in EW-102 due to the well being pinched..." Given this text, Ohio EPA has the following requests. First, the revised text should further clarify how the original pumps were "lost" and the rationale for not including pumps in the redrilled wells because of the "lost" pumps. Second, if it was determined that EW-102 was pinched, please provide the reasoning for not redrilling this well.

Response: In some instances pumps may become lodged in the well casing due to pinching or compaction of the waste mass that impacts the well over time, slightly shifting the vertical orientation of the well below grade. Attempts were made to remove the pumps from EW-87R, TEW-5R, and EW-35R with an excavator, which were unsuccessful. All wells are sounded to determine liquid levels on a regular basis. This data is continuously evaluated to determine if pumps should be installed in wells as part of the ongoing well field maintenance. Data obtained from the new

wells will be evaluated to determine the amount of pumps that need to be purchased as a part of ongoing maintenance and/or future construction.

Extraction Well EW-102 was sounded to determine if a pump could be installed immediately prior to installation. As a result of sounding this well, it was determined the well casing is pinched at a depth of approximately 30 feet. Based on the monitoring data obtained during gas tuning events, it was determined that well EW-102 is still effective and operational. A decision was made to forgoe the installation of a new well at this time. Well field data will continue to be evaluated to determine if this well will need to be re-drilled in the future as part of the ongoing well field maintenance.

II. DEFICIENCY TWO
APPENDIX E
WELL BORING LOGS

The district office discovered several inconsistencies while comparing the data in Appendix E, "Landfill Gas Extraction Well Boring Logs", to the well schedule on Plan Sheet (P.S.) RD-2, "2012 GCCS Phase 1, Project Record Drawing Details". Both the linear feet of drilling / completion and the length of perforated pipe is one foot longer than the same lengths presented on the plan sheet for the following wells: EW-113R, EW-114R, EW-35R2, TEW-5R2, EW-154R2, EW-117R, EW-5R2, EW-168 and EW-101R2. There was also an inconsistency for the EW-127R2 data. In the appendix, the linear feet of drilling/completion and length of perforation was specified as 90' and 69', respectively. On the plan sheet, the same information was listed as 125' and 104', respectively. An explanation is requested.

Response: The depths associated with drilling/completion and perforated length of pipe have been revised in the Well Schedule provided on Drawing RD-2 to coincide with the information provided in the Well Logs presented in Appendix E. A revised Drawing No. 2 is included with these responses.

The drilling depth for EW-127R2 was 90 feet due to encountering sludge material and not being able to advance the boring. The correct depth has been revised for EW-127R2 in the Well Schedule provided on Drawing RD-2.

III. COMMENT ONE
APPENDIX G
INCORRECT REFERENCE

In the middle of second page of Appendix G, "Geosynthetics Test Results", a repair number refers to EW53R2. Since the correct reference is EW-35R2, the necessary revision is requested.

Response: The repair number in question has been revised to be EW35R2 and a revised Geomembrane Repair Summary page is included with these responses.

Mr. Jerry L. Parker
Ohio Environmental Protection Agency
September 28, 2012
Page 3

Please feel free to contact us at (614) 410-6144 if you have any additional questions or comments.

Very truly yours,

Brown and Caldwell Ohio , LLC



Richard A. Isaac, P.E.
Principal Engineer

cc: Chris Jaquet, Republic Services, Inc., Oberlin, OH, w/enc.
Richard Kostelnick, Republic Services, Inc., Oberlin, OH, w/enc
John Sabo, Lorain County Health Department, Elyria, OH, w/enc.
Erik Bewley, Ohio EPA, NEDO, DAPC, Twinsburg, OH, w/enc.
Project File

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OHIO DEPT. OF NEDOS

2012 GCCS – Phase 1 Construction Certification Report for the Lorain County II Landfill

Prepared for



Lorain County, Oberlin, Ohio

July 2012

Revised September 28, 2012

Notarized Statement

"I, Chris Jaquet, certify that this 2012 GCCS - Phase 1 Construction Certification Report for the Republic Services, Inc. Lorain County II Landfill in Lorain County, Oberlin, Ohio and all attachments were prepared in accordance with the provisions and requirements of Ohio Administrative Code (OAC) Rule 3745-27-08(H) effective August 2003. Based on my inquiry of the person or persons who were directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Signature

7/20/12

Date

Chris Jaquet
Name

Area Environmental Manager
Title

On this, the 20 day of July, 2012, before me, a notary public, the above signed person, known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.


Notary Public

LYNN C WILLIAMS
NOTARY PUBLIC - OHIO
MY COMMISSION EXPIRES 08-23-16

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Engineer's Certification

"I, Richard A. Isaac, being a Registered Professional Engineer in the State of Ohio, PE No. E-57074, certify under penalty of law that this 2012 GCCS - Phase 1 Construction Certification Report for the Republic Services, Inc. Lorain County II Landfill in Lorain County, Oberlin, Ohio and all attachments were prepared by me or under my direction or supervision in accordance with the provisions and requirements of Ohio Administrative Code (OAC) Rule 3745-27-08(H) effective August 2003 and in accordance with good engineering practices. I have personally visited and examined the facility and am familiar with the information submitted in this document and based on my inquiry of the person or persons directly responsible for preparing this 2012 GCCS - Phase 1 Construction Certification Report, the information submitted in the 2012 GCCS - Phase 1 Construction Certification Report is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant civil and/or criminal penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Richard A. Isaac

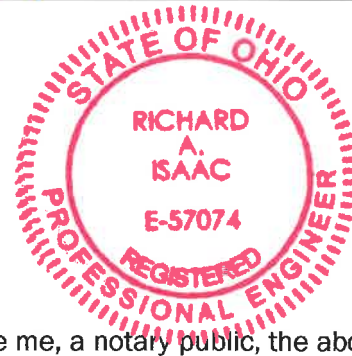
Signature

7/24/12

Date

Richard A. Isaac, P.E.

Name



On this, the 24th day of July 2012, before me, a notary public, the above signed person, known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Kathleen Alleman

Notary Public



KATHLEEN ALLEMAN
Notary Public
In and for the State of Ohio
My Commission Expires
August 11, 2014

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Section 1

Introduction

The purpose of this 2012 Gas Collection and Control System (GCCS) – Phase 1 Construction Certification Report (Certification Report) is to detail the materials, construction/installation methods, and observations and tests performed for the 2012 GCCS – Phase 1 Construction Project at the Lorain County II Landfill (herein after referred to as the “Landfill”), Lorain County, Oberlin, Ohio. This Certification Report was prepared in general conformance with Ohio Administrative Code (OAC) 3745-27-08(H). The Owner’s Notarized Statement and the Engineer’s Certification attesting to the accuracy and compliance of this Certification Report are included as Pages ii and iii, respectively.

The Certification Report includes the following sections:

1. Introduction
2. Landfill Gas Extraction Wells
3. Landfill Gas Collection System
4. Airline and Force Main System
5. System Repairs and Maintenance

A discussion of each new or altered component of the Landfill GCCS materials, construction/installation methods, and observations/tests performed is provided in the appropriate section. Daily field logs, photographs, project record drawings, extraction well boring logs, laboratory test results, pipe pressure test results, and additional relevant information is provided in the appendices.

Under the approval of Republic Services, Inc. (Republic), maintenance was performed on the existing Landfill GCCS. Seventeen GCCS extraction wells were replaced (re-drilled) and one new GCCS extraction wells were installed (refer to the Project Record Drawings in Appendix D for locations).

The field work was performed from April 12, 2012 to May 17, 2012 by Republic’s subcontractor, American Environmental Group Ltd. (AEGL) of Richfield, Ohio. AEGL, under the supervision of Roy McMasters (Gas Extraction System Operations Manager) and Jeff Enochs (Drilling Operations Manager), performed the construction/installation of the extraction wells and pipeline components. Construction quality assurance (CQA) oversight was performed by Brown and Caldwell with Janet Todia, Bryant Kiedrowski, Bill Foster, and Richard A. Isaac, P.E. providing day-to-day observations and documentation. Richard A. Isaac, P.E. of Brown and Caldwell served as the certifying engineer and Ms. Todia also served as the Project Manager. Daily field logs and construction/installation photographs are included in Appendices A and B, respectively. Qualifications for Ms. Todia, Mr. Kiedrowski, Mr. Foster, and Mr. Isaac are included in Appendix C.

For the purposes of this Certification Report, construction quality assurance (CQA) is used to refer to activities performed by Brown and Caldwell, where quality control (QC) refers to observation and testing activities performed by the GCCS component’s installer (AEG) and manufacturer (ISCO).

1.1 Field Alterations/Deviations

During the course of the construction/installation activities, minor alterations/deviations from the construction drawings were implemented in the field. These minor alterations/deviations are listed below, and are also reflected in the Project Record Drawings included in Appendix D:

- ✓ • EW-127R2 was drilled to a depth of 90 feet due to refusal related to encountering sludge material. Drilling continued for a minimum of one hour with no advancement of the boring past the point of refusal. The scheduled boring depth was 125 feet.
- ✓ • Pumps were lost in original well locations for EW-87R2, TEW-5R2, and EW-35R2. Therefore, no pumps were installed in the well re-drill locations. In addition, no pump was installed in EW-102 due to the well being pinched at a depth of approximately 30 feet below grade. Air and force main installation to well EW-102 was previously completed prior to the well being found to be pinched. In addition, no liquid was present in EW-51R at the time of the construction event; therefore, no pump was installed in EW-51R.
- ✓ • The airline and force main was installed from EW-116R to EW-168 to EW-115R due to the existing airline and force main northwest of the well head being located at a prohibitive depth.
- ✓ • The airline and force main was tied in from EW-130R to EW-52R2 instead of from EW-152 in order to avoid a road crossing installation and the airline and force main could be placed in the same trench as the 18-inch header installation on the west side.
- ✓ • The 18-inch header on the east side was swept further west toward TEW-7R2 instead of making a straight run to the existing 18-inch access riser in order to obtain a minimum grade of 3 percent for the header. The sweep of the 18-inch header westward was terminated with a blind flange for purposes of future expansion (see photo ID 100 1361)
- ✓ • The 6-inch lateral for EW-133 was replaced to make it easier to traverse the 18-inch header installation on the east side. The new lateral was tied into the new 18-inch header.

Section 2

Landfill Gas Extraction Wells

A total of one new and 17 replacement extraction wells were installed at the Landfill. The new extraction wells are listed in the following Table 1:

Table 1. New Extraction Wells

EW-168

Existing extraction wells that were abandoned and replaced are listed in the following Table 2:

Table 2. Existing Landfill Gas Extraction Wells

Replacement	Abandoned
✓ TEW-5R2	TEW-5R
✓ EW-5R2	EW-5R
✓ EW-17R3	EW-17R2
✓ EW-31R	EW-31
✓ EW-35R2	EW-35R
✓ EW-49R2	EW-49R
✓ EW-87R2	EW-87R
✓ EW-101R2	EW-101R
✓ EW-108R	EW-108
✓ EW-112R	EW-112 and EW-112S
✓ EW-113R	EW-113 and EW-113S
✓ EW-114R	EW-114 and EW-114S
✓ EW-117R	EW-117 and EW-117S
✓ EW-121R	EW-121
✓ EW-127R2	EW-127R
✓ EW-138R	EW-138
✓ EW-154R2	EW-154R

Existing extraction wells were abandoned by excavating around the existing well casing to an approximate four-foot depth below the existing ground surface and cutting off the exposed casing. A polyvinyl chloride (PVC) slip cap, with a bead of silicone gel inside the cap, was lag-bolted on top of the cut-off well casing and the excavation was backfilled with the excavated materials and clean on-site soil, as needed.

Existing extraction wells within the final cover area were abandoned by excavating around the existing well casing down to the geosynthetic components of the final cover system. The geosynthetics were removed/cut to expose the underlying re-compacted soil barrier (RSB) component of the final cover system only to the extent required to provide access to continue excavating around the existing well casing. The excavation into the RSB was limited to one to two feet. The exposed casing was cut off just above the bottom of the excavation and a PVC slip cap, with a bead of silicone gel inside the cap, was lag-bolted on top of the cut-off well casing. The excavation was backfilled and re-compacted with the RSB material. The geosynthetic components of the final cover system were repaired and/or replaced

(see Section 2.2 for a discussion of how the repairs were performed) and the excavated vegetative/protective layer material was placed in the excavation back to the level of the adjacent soil material.

The new extraction well, listed in Table 1, was connected to the Landfill GCCS using 6-inch HDPE lateral pipelines, tees, and well risers. The 17 re-drilled (replacement) extraction wells are connected to the Landfill GCCS with a 6-inch lateral that ties into the 6-inch lateral that served the associated abandoned extraction well.

New well EW-168 was tied into the existing GCCS as follows:

- EW-168 is tied into the existing 6-inch lateral at EW-116R.

The 17 re-drilled (replacement) extraction wells were tied into the existing GCCS as follows:

- TEW-5R2 is tied into the existing 6-inch above-grade lateral at TEW-5R.
- EW-5R2 is tied into the existing 6-inch lateral at EW-5R.
- EW-17R3 is tied into the existing 6-inch lateral at EW-17R2.
- EW-31R is tied into the existing 6-inch lateral at EW-31.
- EW-35R2 is tied into the existing 6-inch lateral at EW-35R.
- EW-49R2 is tied into the existing 6-inch lateral at EW-49R.
- EW-87R2 is tied into the existing 6-inch lateral at EW-87R.
- EW-101R2 is tied into the existing 6-inch lateral at EW-101R.
- EW-108R is tied into the existing 6-inch lateral at EW-108.
- EW-112R is tied into the existing 6-inch lateral at EW-112.
- EW-113R is tied into the existing 6-inch lateral at EW-113.
- EW-114R is tied into the existing 6-inch lateral at EW-114.
- EW-117R is tied into the existing 6-inch lateral at EW-117.
- EW-121R is tied into the existing 6-inch lateral at EW-121.
- EW-127R2 is tied into the existing 6-inch lateral at EW-127R.
- EW-138R is tied into the existing 6-inch lateral at EW-138.
- EW-154R2 is tied into the existing 6-inch lateral at EW-154R.

Twelve of the extraction wells installed for the 2012 GCCS – Phase 1 program were installed within the area of the Landfill with final cover present (location of these extraction wells is shown on the Project Record Drawings in Appendix D). The geosynthetic components of the final cover system were compromised as the auger advanced through the final cover system. Following installation of the casing for the above-mentioned replacement extraction wells, repair of the geosynthetic components was performed by AEGL (see Section 2.2 for a discussion of how the repairs were performed). The repairs provided a continuous and intact barrier at the replacement extraction well location. Trial weld test results are documented for the repair of the geosynthetic components of the final cover system and can be found in Appendix G.

Periodic air monitoring was performed during the installation of the new and replacement extraction wells (see Subsection 2.4).

2.1 Materials

The materials used for the construction/installation of the new and replacement extraction wells included the following:

- 6-inch and 8-inch diameter solid and perforated SDR 11 HDPE pipe with HDPE butt caps and 6-inch and 8-inch Schedule 40 PVC end caps
- No. 4 stone (1-inch to 3-inch washed non-carbonate) backfill material
- Geonet with geofabric, which was heat-bonded to one side
- 8-mesh granulated bentonite
- Nominal 40-mil thick LLDPE flexible membrane liner (FML)
- Geocomposite
- HDPE extrusion welding rod

2.2 Construction/Installation Methods

Equipment used to construct/install the extraction wells included a Soilmec SR-30 track-mounted drill rig, Caterpillar 953D track-mounted loader, JCB 718 articulated dump truck, ISCO Hotline HDPE butt-fusion pipe welding equipment, DemTech Pro-X extrusion welder and Pro-Tester, hot air machine, DemTech vacuum box, and various hand tools. The general construction/installation methods were as follows:

- A field survey was conducted by the Wellert Corporation of Medina, Ohio to stake the design location for each extraction well and the final well schedule was updated accordingly.
- Boreholes for the extraction wells were drilled into the waste in advance of installing the extraction well materials and equipment. Drilling was performed using a Soilmec SR-30 track-mounted drill rig with a 36-inch diameter auger to the depth for each individual extraction well indicated in the final extraction well schedule on the Project Record Drawings (see Appendix D).
 - Waste material encountered within the borehole was placed in the articulated dump truck for transportation and disposal at the active working face of the Landfill.
- Depth of the borehole was controlled and verified using a weighted tape measure. As the auger advanced, the cuttings were visually observed to ensure no geosynthetics were encountered. Waste temperatures and waste composition were also recorded (see boring logs in Appendix E).
- Final borehole depth was confirmed using a weighted tape measure prior to extraction well casing placement.
- Solid wall and perforated sections of HDPE pipe were butt-fusion welded to the lengths provided in the final extraction well schedule for placement into the borehole. A typical detail for the extraction well construction is provided on the Project Record Drawings in Appendix D.
- Using the Caterpillar 953D track-mounted loader, the welded HDPE casing was raised and slipped into the borehole. A metal grate was placed around the casing to position the casing as close as possible to the middle of the borehole. The casing was secured to the metal grate to prevent the casing from sagging.
- No. 4, washed, non-carbonate stone was placed in the borehole annulus from the bottom up to a minimum of two feet above the top of the perforated section of the 6-inch or 8-inch HDPE casing. The geotechnical test results for the No. 4 stone are provided in Appendix F.
- Geonet with geofabric, which was heat-bonded to one side of the Geonet, was placed over the stone with the geonet in contact with the stone. A one-foot clean soil plug was placed on top of the Geonet.
- A two-foot thick (minimum) granular bentonite seal was placed on top of the clean soil plug. The granular bentonite was hydrated with water and on-site clean soil material was placed on top of the granular bentonite seal. The clean soil material varied in thickness. The two-foot thick (minimum) granular bentonite seal was placed on top of the clean soil material so that the top of the upper granular bentonite seal extended a minimum of six inches into the cover soil.

- Repairs to the geosynthetic components of the final cover system consisted of installing and extrusion welding a “boot sleeve” around the new replacement well casing and extrusion welding the boot sleeve to the FML component of the final cover system. The repair procedures included the following:
 - The excavator and hand tools were used to expose an area around the new replacement well casing.
 - Surface of the existing FML was cleaned of debris.
 - A section of the 40-mil LLDPE FML was cut to overlay the damaged area of the existing FML by a minimum of six inches.
 - The 40-mil LLDPE FML boot sleeve was placed over the casing leaving enough material to secure the boot sleeve to the casing.
 - The 40-mil LLDPE FML boot sleeve was heat-bonded to the existing FML component of the final cover system and the new replacement well casing.
 - A hand grinder (60-grit sand paper) was used to prepare the area of the existing FML component where the extrusion welding would be performed prior to initiating welding.
 - Trial welds were performed for the extrusion welders prior to performing the extrusion welding of the 40-mil LLDPE FML boot sleeve to the existing FML component of the final cover system.
 - The 40-mil LLDPE FML boot sleeve was extrusion welded to the existing FML component of the existing final cover system and the new replacement well casing.
 - The geocomposite was repaired by placing a section of geocomposite material cut to overlay the damaged area by a minimum of one-foot.
- Schedule 40 PVC temporary caps were installed using set screws and silicone sealant on top of the new well casings. Upon completion of the Landfill GCCS piping, Landtec wellheads were installed as permanent replacements for the temporary caps. In most cases, each newly drilled extraction well was connected the same day to either temporary or permanent vacuum laterals to proactively mitigate potential odor issues. All wells and associated risers were marked with reflective tape to increase visibility.
- Landtec wellheads were installed using flexible couplers secured with hose clamps.

2.3 Observations/Tests

The following observations and tests were performed during the construction/installation of the new and replacement extraction wells:

- Materials used in the construction/installation of the new and replacement extraction wells were visually observed for conformance with the construction drawings, as well as to verify there were no signs of damage. The extraction well casing materials were determined to be in conformance with the construction drawings and no visual damage to the materials was observed.
- Perforation size (diameter) and pattern (spacing around the circumference and along the length) for the perforated portion of the extraction well casings were observed for general conformance with the construction drawings.
- Boreholes were observed during the drilling to document that the boreholes were completed to the appropriate depth as provided in the final extraction well schedule provided on the Project Record Drawings included in Appendix D.
- No. 4 washed non-carbonate stone was used to backfill the annular space between the perforated extraction well casing and the borehole. The geotechnical results for the No. 4 stone, provided in

Appendix F, was reviewed and determined to be in compliance with the gradation and carbonate residue requirements (minimum acceptable carbonate content ≤ 5 percent).

- Brown and Caldwell CQA monitors observed the butt-fusion welding process used to connect the HDPE pipe casing sections together to verify appropriate welding procedure guidelines were followed. The butt-fusion welding was performed according to acceptable standards.
- Brown and Caldwell CQA monitors obtained and recorded measurements to verify the extraction wells were constructed according to the construction drawings as well as to create the Project Record Drawings.
- The AEGL driller and the Brown and Caldwell CQA monitors recorded refuse temperature, composition, and degree of moisture at approximately five-foot intervals during drilling activities. The AEGL well logs are provided in Appendix E.

The following observations and tests were performed during the installation of the 40-mil LLDPE FML repairs:

- Prior to welding of the 40-mil LLDPE FML to the existing FML and new replacement well casing, trial welds were performed using the extrusion welder. Test sections of the welds were cut and a tensiometer was used to perform three peel and two shear tests on the test weld sections. The minimum required value for a passing peel test for 40-mil LLDPE is 44 lb/in (ppi). The minimum required value for passing a shear test for 40-mil LLDPE is 60 ppi. The results of the peel and shear tests are presented in Appendix G.
- Brown and Caldwell CQA monitor performed visual observation and documentation of the repairs and vacuum box testing. The results of the vacuum box tests are presented in Appendix G. The vacuum box testing was performed as follows:
 - Soapy solution was applied to the surface of the weld.
 - Vacuum box was placed over approximately 12 to 18 inches of the extrusion weld.
 - Negative pressure was applied to the vacuum box.
 - Welds passed the vacuum box test when no bubbles were observed along the length of the weld under the vacuum box. The test duration was ten seconds.
 - The 40-mil HDPE FML welds passed the vacuum box testing.

2.4 Air Monitoring

Air monitoring was performed during the drilling of the new and replacement extraction wells. A multi-gas VRAE monitoring device, manufactured by RAE Systems, was used to conduct the air monitoring. The atmospheric concentrations within the breathing zone were monitored for methane (lower explosive limit [LEL]), oxygen, carbon monoxide, and hydrogen sulfide. The air monitoring results, which were recorded by the Brown and Caldwell CQA monitor, are provided in Appendix H.

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Section 3

Landfill Gas Collection System

AEGL installed the GCCS components required to incorporate the new extraction well and the replacement extraction wells into the existing GCCS. Approximately 650 linear feet of 6-inch diameter SDR 17 solid-wall HDPE pipe was installed to connect the new extraction well and the replacement extraction wells on line with the existing Landfill GCCS. Approximately 876 linear feet of 18-inch SDR 17 solid-wall HDPE pipe was used to construct the new headers used to connect the upper and lower 24-inch header pipelines. The approximate linear footage of pipeline installed is included in the daily field logs for AEGL (see Appendix A).

3.1 Materials

The components used to connect the new and replacement extraction wells into the existing Landfill GCCS included the following:

- 6-inch diameter solid SDR 17 HDPE lateral pipe
- 18-inch diameter solid SDR 17 HDPE header pipe
- 18-inch diameter butterfly valves
- Landtec well heads and combination well heads
- Various sizes of HDPE tie-in couplings, reducers, tees, and other fittings and appurtenances

3.2 Construction/Installation Methods

Equipment used to connect the new and replacement extraction wells into the existing Landfill GCCS included Caterpillar 320D and 325C track-mounted excavators, Caterpillar 725 articulated dump trucks, Caterpillar D4K and D6K track-mounted dozers, ISCO Hotline HDPE butt-fusion pipe welding equipment, and various hand tools.

3.2.1 Lateral Construction/Installation Methods

The general construction/installation methods used to connect the new and replacement extraction wells into the existing Landfill GCCS were as follows:

- HDPE pipe of various diameters was delivered to the site and stored in a clean area.
- The 6-inch and 18-inch HDPE pipe was butt-fusion welded on-site by AEGL prior to being connected to the existing Landfill GCCS.
- HDPE pipe was placed in the trenches following completion of the excavation.
 - HDPE pipe was installed to achieve the minimum design slopes of three percent within the limits of waste.
 - Pipe bedding consisted of clean cover soil material removed from the trench excavation.
 - Survey markers were placed at 50-foot intervals along the pipelines, at road crossings, and at fitting locations. The survey markers were removed following completion of the field survey activities.
- Installed pipelines, fittings, components, and road crossings were field surveyed after installation from a third order benchmark using global positioning system (GPS) technology.

- Locations of the pipelines, components, and appurtenances are provided on the Project Record Drawings in Appendix D.
- 5-mil x 3-inch underground detectable tape with the words “CAUTION BURIED GAS LINE BELOW” was placed approximately 1-foot above the HDPE pipe during backfilling activities.
- Waste material encountered within the excavated soil was separated from the soil as the trenches were backfilled. The waste material was placed in an articulated dump truck for transportation and disposal at the active working face of the Landfill.
- Additional soil was obtained from an onsite stockpile to augment the backfill soil, if needed.

3.3 Observations/Tests

The following observations and tests were performed during the connection of the new and replacement extraction wells to the existing Landfill GCCS:

- Pipe was visually observed for conformance with the construction drawings, as well as to verify there were no signs of damage. The pipe was determined to be in conformance with the construction drawings and no visual damage to the pipe was observed.
- Butt-fusion welds were visually observed prior to back-filling the trenches. Brown and Caldwell CQA monitors observed hot plate temperature, holding times, and welding techniques. The welds were determined to be in conformance with the specifications.
- Pipelines were pressure tested prior to being connected to the existing Landfill GCCS, and while in place. Pressure tests consisted of applying a minimum of 25 pounds per square inch (psi) for the 6-inch diameter SDR-17 HDPE pipe and 10 psi for the 18-inch diameter SDR-17 HDPE pipe. All tests were conducted over a minimum four-hour period. Prior to beginning the test, during the test, and following completion of the test, the gauges were visually assessed for damage and proper units of measurement. The results of the pressure tests determined that the pipelines did not have any leaks. Pipe pressure test results are provided in Appendix I.
- The geotechnical results for the No. 4 stone was reviewed and determined to be in compliance with the gradation and carbonate residue requirements (minimum acceptable carbonate content ≤5 percent).

Section 4

Airline and Force Main System

AEGL installed the airline and force main system components required to incorporate the new extraction well leachate pumps into the existing Landfill GCCS. A total of 16 pneumatic pumps were installed at the Landfill as listed in Table 3. An estimated 5,740 linear feet of HDPE pipe was installed to connect the new extraction well pumps with the leachate collection and compressed air system. Of that linear footage of pipeline installed, 2,870 linear feet was 2-inch diameter HDPE airline, 2,161 linear feet was 2-inch diameter HDPE leachate force main, and 709 linear feet was 2-inch by 4-inch dual-contained HDPE leachate force main. The approximate linear footage of pipeline installed is included in the daily field logs for AEGL (see Appendix A).

Table 3. Extraction Well Pumps and Depths

Well	Pump Depth (ft)
EW-161	107
EW-160	111
EW-138R	99
EW-40R2	95
EW-159	65
EW-127R2	88
EW-52R2	100
EW-9R2	106
EW-141R	91
EW-146R	100
EW-115R	106
EW-43R2	92
EW-48R	95
EW-101R2	98
EW-122R	90
EW-154R2	123

Two-inch airline and force main and two-inch by 4-inch force main were installed to operate newly installed pumps and to accommodate future installation of additional pumps. The airline and force main was connected to the existing airline and force main by pinching the pre-existing lines and butt fusing new lines to extend the runs. The locations of the new extended airlines and force main is shown on the Project Record Drawings in Appendix D.

4.1 Materials

The airline and force main components include the following materials:

- 2-inch diameter HDPE SDR 9 pipe (airline)
- 2-inch diameter HDPE SDR 11 pipe (force main carrier pipe)
- 4-inch diameter HDPE SDR 17 pipe (force main containment pipe)
 - 2-inch by 4-inch dual-contained force main (for pipelines installed on top of the final cover area)

- 36-inch diameter corrugated metal pipe (road crossing encasement)
- QED Pneumatic pumps and associated hardware
- Various sizes of HDPE tees, fittings, and appurtenances

4.2 Construction/Installation Methods

Equipment used to install the airline and force main system included Caterpillar 320D track-mounted excavators and CAT 725 articulated dump trucks, electro-fusion couplers and welding equipment, ISCO Hotline butt-fusion welding equipment and various hand tools. The general construction/installation methods used to install the airline and force main system were as follows:

- The HDPE pipe was butt-fusion welded on-site by AEGL.
- A trench was excavated at the specified location to a depth of approximately 36 inches below the existing ground surface.
- The leachate force main and airline piping was placed in a trench on a bed of compacted soil and backfilled with clean on-site soil.
- Waste encountered was separated from the fill as the trench was backfilled. Excavated waste was placed in an articulated dump truck for disposal at the active working face of the Landfill.
- Riser pipes at each extraction well were connected to the pumps installed in the extraction wells listed in Table 3.

4.3 Observations/Tests

The following observations and tests were performed during the installation of the leachate force main and airline:

- The HDPE pipe was visually observed for conformance with the construction drawings, as well as to verify there were no signs of damage. The pipe was determined to be in conformance with the construction drawings and no visual damage to the pipe was observed.
- Butt-fusion welds were visually observed to be completed according to the butt-fusion welding specifications.
- Installed force main and airlines were pressure tested prior to being connected to the existing Landfill GCCS. The pressure test for the airline consisted of applying 100 psi of pressure over a minimum 4-hour period. The pressure test for the leachate force main consisted of applying 50 psi of pressure over a minimum 4-hour period. Prior to beginning the test, during the test, and following completion of the test, the gauges were visually assessed for damage and proper units of measurement. The results of the pressure tests determined that the pipelines did not have any leaks. Pipe pressure test results are provided in Appendix I.
- For testing of dual-contained force main, the interior 2-inch carrier pipe was pressurized to 60 psi and the exterior 4-inch containment pipe was tested to 50 psi over a minimum 4-hour period.

Section 5

System Repairs and Maintenance

Gas header line repairs/maintenance were performed by AEGL. The following repairs/maintenance activities were performed:

- The 6-inch diameter lateral for EW-133 was replaced.

5.1 Materials

The components used to repair and maintain the existing Landfill GCCS included the following:

- 6-inch diameter solid SDR 17 HDPE lateral pipe
- Various sizes of HDPE tie-in couplings, reducers, tees, and other fittings and appurtenances

5.2 Construction/Installation Methods

Equipment used to perform the GCCS repairs and maintenance included Caterpillar 320D and 325C track-mounted excavators, Caterpillar 725 articulated dump trucks Caterpillar D4K and D5K dozers, butt-fusion and electro-fusion welding equipment and various hand tools.

5.2.1 Lateral Construction/Installation Methods

The general construction/installation methods used to repair and maintain the existing Landfill GCCS were as follows:

- HDPE pipe was delivered to the site and stored in a clean area.
- The 6-inch HDPE pipe was butt-fusion welded on-site by AEGL prior to being connected to the existing Landfill GCCS.
- HDPE pipe was placed in the trenches following completion of the excavation.
 - HDPE pipe was installed to achieve the minimum design slopes of three percent within the limits of waste.
 - Pipe bedding consisted of clean cover soil material removed from the trench excavation.
 - Survey markers were placed at 50-foot intervals along the pipelines, at road crossings, and at fitting locations. The survey markers were removed following completion of the field survey activities.
- Installed pipelines, fittings, components, and road crossings were field surveyed after installation from a third order benchmark using global positioning system (GPS) technology.
 - Locations of the pipelines, components, and appurtenances are provided on the Project Record Drawings in Appendix D.
 - 5-mil x 3-inch underground detectable tape with the words "CAUTION BURIED GAS LINE BELOW" was placed approximately 1-foot above the HDPE pipe during backfilling activities.
- Waste material encountered within the excavated soil was separated from the soil as the trenches were backfilled. The waste material was placed in an articulated dump truck for transportation and disposal at the active working face of the Landfill.
 - Additional soil was obtained from an onsite stockpile to augment the backfill soil, if needed.

5.3 Observations/Tests

The following observations and tests were performed during the above detailed construction activities:

- Pipe and appurtenances were visually observed to verify there was no sign of damage. No visual damage to the materials installed for the GCCS maintenance activities was observed.
- Visual observations and written and photographic documentation of the lateral replacement were performed.
- Backfilling operations were monitored to assure that there were no negative impacts to the new and existing components of the GCCS system.
- Butt-fusion welds were visually observed prior to back-filling the trenches. Brown and Caldwell CQA monitors observed hot plate temperature, fusion pressure, holding times, and welding techniques. The welds were determined to be in conformance with the butt-fusion welding specifications.
- Electro-fusion welds were visually observed to be completed according to the electro-fusion welding specifications.
- The installed lateral pipeline was pressure tested prior to being connected to the existing Landfill GCCS. The pressure test for the lateral pipeline consisted of applying 25 psi of pressure over a minimum 4-hour period. Prior to beginning the test, during the test, and following completion of the test, the gauges were visually assessed for damage and proper units of measurement. The results of the pressure tests determined that the pipelines did not have any leaks. Pipe pressure test results are provided in Appendix I.

Appendix A: Daily Field Logs

Brown and Caldwell

American Environmental Group, Ltd.

Brown and Caldwell

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Ismael Tedia

Date: *4/12/12*

Construction Day No.:

Time In: *0700*

Time Out: *1800*

Weather:

Sunny + 60°F

Items Worked On:



Gas Extraction Wells
Flare/piping installation
LFG Piping
Pressure Testing
Earthwork



Combo Wells
Liner Installation
Liner Repair
Excavation/Trenching
Other

Contractor/Subcontractors/Visitors:

*ABG construction, AEG drilling (MOB)
Weller Engineering (take new drills)*

Summary of Work:

*0700 arrive on site; safety meeting
0900 - 1100 pre-con meetings for Phase I: Jgunt, AEG,
SES, B+C
1100 check detail drawings + survey 0577
1330 met w/ Weller on site + survey all well
locations for Phase I construction
1745 complete well location survey w/
Weller moved locations BW31R + BW108R +
BW121R - will check w/ R. Jones
1800 leave site for the day*

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Ismael Tedia *4/12/12*

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Janet Todia

Date: *4/13/12*

Construction Day No.:

Time In: *6700*

Time Out: *1800*

Weather: *Sunny + 63°F*

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABG construction, ABG drilling

Summary of Work:

*0700 arrive on site; safety meeting
0720 meet w/ Outin; call Rick Rivas for well
schedule; receive approval for BW31R to be
drilled at 51.0'
0805 begin drilling BW31R
0845 call Roy ABG for Lorain II; spreading going
well; 0855 bore complete BW31R
0925 begin log BW108R
1215 finish BW108R moving
1600 BW108R complete; check all well survey points
1800 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todia 4/13/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todio

Date: 4/16/12

Construction Day No.:

Time In: 0700

Time Out: 1845

Weather: sunny 60°F
high winds

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABG construction; ABG Drilling; Willett
Engineering
WALK THROUGH FOR 24"

Summary of Work:

0700 arrive on site; safety meeting
0730 begin drilling BW112R
1005 continue drilling BW112R
1010 finish bore BW112R
1015 begin drill BW113R
1215 begin walk through for 24" pipeline
1330 end walk through
1335 walk hill w Jesse of Willett to finish
survey
1845 leave site for the day

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todio 4/16/12
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todia

Date: *4/17/12*

Construction Day No.:

Time In: *0700*

Time Out: *1800*

Weather: *Sunny & 55°F*

Items Worked On:

- | | |
|--|---|
| ☒ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping installation | ☐ Liner Installation |
| ☒ LFG Piping | ☐ Liner Repair |
| ☐ Pressure Testing | ☐ Excavation/Trenching |
| ☒ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

AREC construction, AREC drilling, Willett Engineering

Summary of Work:

0700 arrive on site; safety meeting
- drill BW 114R
- drill BW 35R2
- met w/ Jesse of Willett to survey fence placement & truck limits for 24"
- AREC installed pull string in comm line
- AREC completing pipe bollards
- Willett surveyed Lorain I upgrade
1800 leave site for the day

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

James Todia 4/17/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todia

Date: *4/18/12*

Construction Day No.:

Time In: *0700*

Time Out: *1830*

Weather: *Sunny + 57°F*

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☒ Other

Contractor/Subcontractors/Visitors:

ARL construction, Weller Engineering
ARL drilling

Summary of Work:

- 0700 arrive on site, safety meeting*
- drill Bld 138R & Bld 127R2*
- survey all construction & new fence line + truck wash area for 24" w/ Weller*
- finish survey of Lorain I Bld 66 & Bld 67 regards w/ Weller*
- construction finishing walk thru punch list (along 24" line)*
- 1830 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

James Todia *4/18/12*

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Bret Todia

Date: *4/19/12*

Construction Day No.:

Time In: *0700*

Time Out: *1830*

Weather: *Sunny + 58°F*

Items Worked On:



Gas Extraction Wells
Flare/piping installation
LFG Piping
Pressure Testing
Earthwork

☐ Combo Wells
☐ Liner Installation
☒ Liner Repair
☐ Excavation/Trenching
☐ Other

Contractor/Subcontractors/Visitors:

*ARG construction, ARG drilling, Willert
Engineering*

Summary of Work:

*0700 arrive on site; safety meeting
- install air & force main bell 161 to RW43R2
and RW40R2 to RW159
- drilling drill RW5R2; only well drilled
today; achieved total bore depth
- all air & force main survey is completed
by Willert
1830 leave site for the day
pressure test 600' of 6" laterals - test
overnight*

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Willert 4/19/12
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Burt Todia

Date: *4/20/12*

Construction Day No.:

Time In:

0700

Time Out:

1900

Weather:

sunny + 70°F

Items Worked On:



Gas Extraction Wells

Flare/piping installation

LFG Piping

Pressure Testing

Earthwork

☐

Combo Wells

☐

Liner Installation

☐

Liner Repair

☐

Excavation/Trenching

☐

Other

Contractor/Subcontractors/Visitors:

*ARG construction, ARG drilling
Willert Engineering*

Summary of Work:

- 0700 arrive on site; safety meeting*
- operate BW112R, 113R, & 114R to reestablish vacuum*
 - drill BW49R2 & BW154R2*
 - complete lateral tie ins for BW112R & BW113R; save 114R for plant shut down*
 - meet w/ SCS, ARG to coordinate tie ins during plant shut down Tues @ 7am thru Wednesday @ 12 noon*

Attachments:

☐

Contractor Report

☐

Field Notes

☐

Other:

Just Lucha 4/20/12

Signature of CQA Monitor

Date

BW31R2
BW35R2

HR 155
of an
issue
due to
vac

127R
15R

164R2

49R2

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Jimmy Todid

Date: 4/23/12

Construction Day No.:

Time In: 0700

Time Out: 1850

Weather: cold + WINDY > 40mph
40°F

Items Worked On:

- | | |
|--|--|
| ☐ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping installation | ☐ Liner Installation |
| ☐ LFG Piping | ☐ Liner Repair |
| ☒ Pressure Testing | ☒ Excavation/Trenching |
| ☒ Earthwork | ☐ Other |

Drilling not working; too windy

Contractor/Subcontractors/Visitors:

AEG construction

Summary of Work:

0700 arriving on site; safety meeting
0810 air + force main failed BW102 & BW4R2 &
BW129R to BW48R
0830 STOP digging in trash due to wind
1010 AEG uncover all, retools in landfill
and for this was tomorrow; start 2"
Drillers
1625 AER TEST 2" air + 2" force main (161R2)
" 6" 30 psi 540'
" 2" 100 psi air line } leave overnight
" 2" 40 psi force main }
1850 leave site for the day

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

[Signature]

4/23/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todia

Date: *4/24/12*

Construction Day No.:

Time In: *0700*

Time Out: *1900*

Weather: *cold windy
38°F*

Items Worked On:



Gas Extraction Wells
Flare/piping installation
LFG Piping
Pressure Testing
Earthwork



Combo Wells
Liner Installation
Liner Repair
Excavation/Trenching
Other

PLANT SHUT DOWN @ 0730 to Wed @ NOON

Contractor/Subcontractors/Visitors:

ASB construction, ASB drilling

Summary of Work:

- 0700 arrive on site; safety meeting*
- 0730 plant shut down*
- ASB install new 35KZ lateral; air tests & preparing boots to continue laterals while plant is down B31 lateral complete*
- drill BW17K3*
- lateral for BW12K2 + TEW5K2 complete*
- drill BW117R*
- laterals for BW108R + 114R complete*
- Air Testing: see field book*
- 1900 leave site for the day*

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

James Todia *4/24/12*

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Janet Todt

Date: *4/25/12*

Construction Day No.:

Time In: *0700*

Time Out: *1900*

Weather:

sunny 57°F

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARE construction, ARE drilling, ARE liner

Summary of Work:

- 0700 arrive on site; safety meeting*
- set pump BW154R2*
- liner repair (well hole seal) BW5R2, BW127R2, BW108R, BW112R, BW115R, BW114R, BW31R, BW55R2*
- tie ins BW17R3, BW117R, BW138R, BW49R, BW154R*
- drill BW87R2 + BW17R3 + 122R*
- continue fitting and reforce main trenches + air testing to air dual contained*
- 1900 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todt 4/25/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todia

Date: 4/26/12

Construction Day No.:

Time In: 0700

Time Out: 1900

Weather: overcast
rain 50°F

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEG construction, NBSB drilling, Willett Engineering

Last wells completed; drilling will resume tomorrow

Summary of Work:

- 0700 arrive on site; safety meeting
- drill EW101R & EW106R
- air & force main run EW140 to 141 to EW122R
- air & force main EW102 to EW102
- survey as built's w/ Willett Engineering
- construction progress meeting
- pressure testing (see field book)
- dummy test all wells that are not new & require pumps
- drilling to resume tomorrow
- 1900 leave site for the day

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todia 4/26/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Jonat Todd

Date: 4/27/12

Construction Day No.:

Time In: 0700

Time Out: 1730

Weather: sunny & cold
50°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABO construction, AEG Drilling (Hamob)

Summary of Work:

0700 arrive on site; safety meeting; AEG Liner cancelled today
 - tie in Bw1168
 - air & force main 124R to 48R
 - inspection & certificate of completion for AEG drilling
 - air & force main Bw115R to Bw1168 to Bw116R
 - pressure testing air & force main
 1730 leave site for the day

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Jonat Todd 4/27/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Bill Foster

Date: 04/28/12 (Sat.) Construction Day No.:

Time In: 0630

Time Out: 1330

Weather: 38°-42°

Cloudy turning to Rain.

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping - Road Crossing
- ☐ Pressure Testing
- ☐ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair - EW-SR2 + EW-101R2
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

Contractors AEB

Subcontractor: N/A

Visitors: N/A

Phone Calls: N/A

Material Delivered: N/A

Summary of Work:

- on site @ 0630.
- Safety mtg.
- meet w/Bob to discuss the days workplan.
- AEB begins trenching the air & FM road crossing, near EW-43R2
- AEB liner crew arrives @ 0900. They begin repairing Final LP liner & bent to recently drilled extraction wells, EW-SR2 + EW-101R2
- AEB installs a 2" FM + 2" airtight inside of a 10" corrugated steel casing pipe. Installed & backfilled per specs.
- Pipe crew offsite @ 1215.
- Begins to Rain. Liner crew is offsite @ 1300.
- I leave the site @ 1330.

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

B.N. JAV

Signature of CQA Monitor

04/28/12

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Felix Todia

Date: *4/30/12*

Construction Day No.:

Time In: *0700*

Time Out: *1900*

Weather: *Sunny 70°F*
intermittent showers

Items Worked On:

- ☒ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ADB construction

No excavation in trash today

Summary of Work:

- 0700 arrive on site; safety meeting*
- fill ins for laterals 81R2, 121R, 101R, BW5R2 completed today*
- air test on air + force main 160 → 161 → 43R2 in place*
- cover over flow seds completed Saturday BW101R2 + BW5R2*
- take air + force main road crossing*

1900 leave site for the day

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Felix Todia *4/30/12*

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Bruce Todia

Date: *5/11/12*

Construction Day No.:

Time In: *0700*

Time Out: *1650*

Weather: *rain + 58°F*

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARB construction

Summary of Work:

- 0700 arrive on site; safety meeting*
- design change 18" w/c change fit in to a T*
- design change air-force main will not be 152 to 52R2; instead will be 52R2 to 130R*
- certificate of completion for seeder*
- install air force main valves at road crossing (EW43R2)*
- Weekly construction progress meeting*
- go over 24" walk thru checklist w/ ARB*
- 1650 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Signature of CQA Monitor

Date

Jill Rodas 5/11/12

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Janet Todio

Date:

5/2/12

Construction Day No.:

Time In:

0700

Time Out:

1900

Weather:

Sunny 70°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARG Construction

Summary of Work:

0700 arrive on site; safety meeting
0805 begin excavation of 14" air & force
main run + AIR TEST (all 2" runs)
1005 uncover tie in point for 18" x 2" header
north side near 40R2 + survey fall; high point
for 18" will change to berm
1100 begin uncover 14" air & force main
1350 complete air & force main 14"
check pitch of flare piping flare #1 + flare #2 to
determine if stainless needs to be shortened
1900 leave site for the day

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todio

5/2/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Tina Todd

Date: 5/3/12

Construction Day No.:

Time In: 0700

Time Out: 1800

Weather: Sunny + 88°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABC Construction

Summary of Work:

- 0700 arrive on site; safety meeting
- plan for day to tie in both north side headers for 18" x 24"
 - spoke w/ SDS; will not shut down plant for tie ins
 - continue tie in of west 18" x 24"
 - begin tie in of east 18" x 24"
 - fusion took longer than expected; will complete north tie ins tomorrow; plant & flares running
- 1800 leave site for the day

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Signature of CQA Monitor

Date

Tina Todd 5/3/12

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Tom Todia

Date: *5/4/12*

Construction Day No.:

Time In: *0700*

Time Out: *1800*

Weather: *Sunny + 77°F*

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☒ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARB construction, ARB Liner

Summary of Work:

- 0700 arrive on site safety meeting*
- shut valves for 24" adjustment on east 18"*
- flare went down on high temp; flares continue running; plant OK; called to locate*
- repair (ARB liner) 35R2, box seal 121, 121R, + 87R2*
- complete both rock tie in for 18" + 24"*
- trench 18" to burn on east 18" run*
- 1800 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Tom Todia 5/4/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todio

Date:

5/5/12

Construction Day No.:

Time In:

0700

Time Out:

1400

Weather:

Overcast 60°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☒ Flare/piping installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARG construction

no excavation in trash today; fill + clean up

Summary of Work:

- 0700 arrive on site; safety meeting*
- fill in around geo repairs 87R2, 121, 121R + 35R2*
- clean up trailer + site*
- pipe stands for flare*
- 24" check list*
- check liquid levels for pump installation on new wells*
- 1400 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Signature of CQA Monitor

Date

James Todio 5/5/12

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Ismael Tadia

Date: *5/7/12*

Construction Day No.:

Time In: *0700*

Time Out: *1000*

Weather: *overcast ~ 60°F*

*Storms called off
work*

Items Worked On:

- | | |
|--|---|
| ☐ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping Installation | ☐ Liner Installation |
| ☐ LFG Piping | ☐ Liner Repair |
| ☒ Pressure Testing | ☐ Excavation/Trenching |
| ☒ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

ARB Construction

Summary of Work:

*0700 arrive on site; safety meeting
0730 prep for air test 18" (west leg)
0900 ARB bringing fill dirt to 18" excavation
1000 AIR TEST 18" west leg 10 psi
1005 minor called off crew due to lightning +
rain for the day
1020 wellbore survey cancelled today; will
come back tomorrow
1030 leave site for the day*

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Ismael Tadia 5/7/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Tedia

Date: *5/9/12*

Construction Day No.:

Time In: *0700*

Time Out: *1700*

Weather: *Sunny 70°F*

Items Worked On:

- ☐ Gas Extraction Wells
- ☒ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ARE Construction, Weller Engineering

Summary of Work:

*0700 arrive on site; safety meeting
0815 begin excavation of flow meter area for
vault; dewater vault w/ trash pump
0920 switch excavating trench for electric supply
to flow meter
1005 plant shut down for tie in of flow meter
1200 vault in place; geotextile around sump
reservoir; backfill w/ gravel to place surrips
1300 Weller on site; will survey all remaining air
port main
1700 finish survey & leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

James Tedia 5/9/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

Just Todia

Date: *5/10/12*

Construction Day No.:

Time In: *0700*

Time Out: *1900*

Weather:

Hazy 55°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

ABG Construction

Summary of Work:

- 0700 arrive on site; safety meeting*
- call Brother Jon & he suggests to bring odor fan out on southeast side of excavation*
 - call Janet w/ Minor & notify him ABG will purchase (4) 8" flanges to retain 3" wells on line while waiting 1 week for pumps*
 - complete 10" tie in (south side)*
 - will complete survey tomorrow w/ weller on all air & force main*
- 1900 leave site for the day*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Just Todia *5/10/12*

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todia

Date: *5/11/12*

Construction Day No.:

Time In: *0700*

Time Out: *1800*

Weather: *Sunny + 60°F*

Items Worked On:

- | | |
|--|--|
| ☐ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping installation | ☐ Liner Installation |
| ☒ LFG Piping | ☐ Liner Repair |
| ☐ Pressure Testing | ☒ Excavation/Trenching |
| ☒ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

*ABC construction, Willett Engineering
(sunny) to be postponed until
Monday*

Summary of Work:

- 0700 arrive on site; safety meeting*
- measure 18" (east side header) from mid point south to 18" riser*
- fuse 18" for header pipe installation*
- ask Weaver Bros how liner was finished on north side*
- approved design change by Jaquet; could only get 0.88% grade on 18" at cap i.e. will move header west to obtain 3% grade*
- close excavation for the night*
- leave site @ 1800*

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

James Todia *5/11/12*

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: KIEDROWSKI

Date: 5/12/12

Construction Day No.:

Time In: 0645

Time Out: _____

Weather: 75° SUNNY

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AEBL CONSTRUCTION

Summary of Work:

- MEETING WITH DEAN (AEBL) TO GO OVER PLAN FOR DAY'S ACTIVITIES
- CONTINUED FUSING 18-INCH HDPE PIPE FOR EASTERN 18-INCH HEADER CONNECTIONS
- CONSTRUCTED LATERAL FOR EW-133.
- UNCOVERED LINER AT 18-INCH TIE-IN (HEADER ACCESS RISER).
- 18-INCH HEADER WOULD NOT HOLD PRESSURE FOR AIR TEST. COULD NOT FIND LEAK.

Attachments:

- ☒ Contractor Report
- ☒ Field Notes
- ☒ Other: DAILY TAILGATE

Bryan Kiedrowski 5/12/12
Signature of CQA Monitor Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Janet Todis

Date: 5/14/12

Construction Day No.:

Time In: 0700

Time Out: 1900

Weather: Sunny: 70°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☒ LFG Piping
- ☒ Pressure Testing
- ☒ Earthwork

- ☐ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☒ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

AR6 construction, Willett Engineering (survey)

Summary of Work:

- 0700 arrive on site; safety meeting
- continue excavation of 18" header on east side; search for leak in 6" lateral to Bul 133; 18" won't hold air; found leak & plugged it; was an old air tie & chuck
- tie in 18" T on east side run (south side)
- survey remaining air & force main & 18" w/ Willett Engineering
- 1900 leave site for the day after validating tie in is complete - SC5 is back on line

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Janet Todis 5/14/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1
Project No.: 140980

Location: Lorain County II Landfill

BC Personnel: Sam Todia

Date: 5/15/12 Construction Day No.:

Time In: 0700

Time Out: 1900

Weather: cloudy + TTF

Items Worked On:



Gas Extraction Wells



Flare/piping installation



LFG Piping



Pressure Testing



Earthwork



Combo Wells



Liner Installation



Liner Repair



Excavation/Trenching



Other

Contractor/Subcontractors/Visitors:

ARG construction, ARG liner

Summary of Work:

- 0700 arrive on site; safety meeting
- plan is to drop pumps today to 8" reducers
- ARG liner on site to repair 18" east leg at T; will use fusion weld
- ARG dropped pumps in wells 160, 161, 138R, 40R2, 159, 127R2 + 52R2
- ARG installed 6x8" reducers on wells
- 0800 will have walk thru w/ Kostelnick, Joaquin, Vladic + M Thursday; tied in R/L 153
- 1900 leave site for the day + abandoned old lateral

Attachments:



Contractor Report



Field Notes



Other:

[Signature]

5/15/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140880

Location: Lorain County II Landfill

BC Personnel: Toner Todio

Date: 5/14/12

Construction Day No.:

Time In: 0700

Time Out: 1900

Weather: sunny + 68°F

Items Worked On:

- ☐ Gas Extraction Wells
- ☐ Flare/piping installation
- ☐ LFG Piping
- ☐ Pressure Testing
- ☒ Earthwork

- ☒ Combo Wells
- ☐ Liner Installation
- ☐ Liner Repair
- ☐ Excavation/Trenching
- ☐ Other

Contractor/Subcontractors/Visitors:

NEG construction; Waller Engineering

Summary of Work:

- 0700 arrive on site; safety meeting
- drop pumps in wells 152 + 115R
- final survey w/ Waller Engineering
- better log + clean up trash / flagging to assure all trash from excavations is sufficiently covered
- finish cover of 18" east log
- 1900 leave site for the day.

Attachments:

- ☐ Contractor Report
- ☐ Field Notes
- ☐ Other:

Toner Todio 5/16/12

Signature of CQA Monitor

Date

Brown AND Caldwell

Daily Field Report

Project: 2011 GCCS Phase 1

Project No.: 140980

Location: Lorain County II Landfill

BC Personnel:

James Todia

Date: *5/17/12*

Construction Day No.:

Time In: *0700*

Time Out: *1700*

Weather: *Sunny + 70°F*

Items Worked On:

- | | |
|--|---|
| ☐ Gas Extraction Wells | ☐ Combo Wells |
| ☐ Flare/piping installation | ☐ Liner Installation |
| ☐ LFG Piping | ☐ Liner Repair |
| ☐ Pressure Testing | ☐ Excavation/Trenching |
| ☒ Earthwork | ☐ Other |

Contractor/Subcontractors/Visitors:

ARB construction

FINAL WALK THRU

Summary of Work:

*0700 arrive on site; safety meeting
0800 final walk thru w/ Dague &
Kostelnick; approved certificate of
completion for ARB from the site
w/ minor issues corrected
1700 leave site after releasing
ARB w/ certificate of completion*

Attachments:

- ☐ Contractor Report
☐ Field Notes
☐ Other:

Signature of CQA Monitor

Date

James Todia

5/17/12

American Environmental Group, Ltd



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/13/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING		CONSTRUCTION	
111 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
111 LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH _____	
69 PERFORATED PIPE-DIA.	6" HDPE SDR-11	HEADER # _____	PIPE DIA. _____
46 SOLID PIPE -DIA.	6" HDPE SDR-11	STATION _____	LINEAR FT. _____
		TRENCH DEPTH _____	
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
EW31R-51ft		STATION # _____	LINEAR FT. _____
EW108R-60ft		TRENCH DEPTH _____	
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>6:00 A.M.</u>		LATERAL: # _____	PIPE DIA. _____
STOP TIME <u>6:00 P.M.</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

Arrived on site set up and drilled EW31R to depth and completed then moved and drilled EW108R to depth and completed

Detin Moore 4/13/12
CLIENT REPRESENTATIVE DATE
James R. Todia CQA Brown & Caldwell
NAME & TITLE

Detin Moore 4/13/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/16/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING	CONSTRUCTION
221 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. _____
221 LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
179 PERFORATED PIPE-DIA. 6" HDPE SDR-11	HEADER # _____ PIPE DIA. _____
46 SOLID PIPE -DIA. 6" HDPE SDR-11	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
EW112R-112ft	SUBHEADER # _____ PIPE DIA. _____
EW113R-109ft	LINEAR FT. _____
	STATION # _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

Arrived on site set up and drilled EW112R to depth and completed then moved and drilled EW113R to depth and completed

James R. Todis 4/16/12
CLIENT REPRESENTATIVE DATE
James R. Todis CEA & Son + Caldwell
NAME & TITLE

Detin Moore 4/16/2012
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/17/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING	CONSTRUCTION
194 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. _____
194 LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
152 PERFORATED PIPE-DIA. 6" HDPE SDR-11	HEADER # _____ PIPE DIA. _____
46 SOLID PIPE -DIA. 6" HDPE SDR-11	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
EW114R-109ft	SUBHEADER # _____ PIPE DIA. _____
EW35R2-85ft	LINEAR FT. _____
	STATION # _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

Arrived on site set up and drilled EW114R to depth and completed then moved and drilled EW35R2 to depth and completed then constructed a bench for EW138R so one bench will be charged

Detin Moore 4/17/12
CLIENT REPRESENTATIVE DATE
Ben A. Todia COA Koway + Caldwell
NAME & TITLE

Detin Moore 4/17/2012
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/17/2012

Tues.

PROJECT NAME LORAIN COUNTY
PROJECT# 20211133

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		HEADER #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		AIR #	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
		STATION	TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		FORCEMAIN #	PIPE DIA.
			LINEAR FT.
		STATION #	TRENCH DEPTH
		COMMUNTION #	PIPE DIA.
			LINEAR FT.
		STATION	TRENCH DEPTH
GENERAL INFORMATION		LATERAL: #	PIPE DIA.
WEATHER CONDITIONS		STATION	LINEAR FT.
sunny		RISER HEIGHT	TRENCH DEPTH
		LATERAL #	PIPE DIA.
START TIME <u>7:00AM</u>		STATION	LINEAR FT.
STOP TIME <u>7:30PM</u>		RISER HEIGHT	TRENCH DEPTH
		SUMP	FM

Today we started with our safety meeting and then went over and finished pouring concrete pads at flare #2. After we finished doing that couple of the guys went up on top of the hill and started fusing pipe for the next phase of the project. They fused up 1000ft of 4", 560ft of 18" and 600ft of 6". While they did that we finished dirt work on lorain 1. We also started vaccuming the 3" commutation lines out because some of the lines had water in them do to the fact all risers pipes were left open. We also started feeding rope in them just to see if lines were able to go thur the pipe ok. We then ran out of time so we wrapped things up and left for the day.

Amelia Morris 4/17/12
CLIENT REPRESENTATIVE DATE
James A. Tolia CQA
NAME & TITLE

[Signature] 4/17/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/18/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING		CONSTRUCTION	
191 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT		_____	LINEAR FT. _____
191 LINEAR FEET OF WELL COMPLETION		STATION _____	TRENCH DEPTH _____
149 PERFORATED PIPE-DIA. 6" HDPE SDR-11		HEADER # _____	PIPE DIA. _____
_____		_____	LINEAR FT. _____
46 SOLID PIPE -DIA. 6" HDPE SDR-11		STATION _____	TRENCH DEPTH _____
_____		SUBHEADER # _____	PIPE DIA. _____
COMPLETION: (WELL NUMBERS)		_____	LINEAR FT. _____
EW138R-101ft		STATION # _____	TRENCH DEPTH _____
EW127R-90ft		_____	_____
_____		LATERAL: # _____	PIPE DIA. _____
_____		STATION _____	LINEAR FT. _____
_____		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		_____	_____
WEATHER CONDITIONS		LATERAL: # _____	PIPE DIA. _____
_____		STATION _____	LINEAR FT. _____
_____		RISER HEIGHT _____	TRENCH DEPTH _____
_____		_____	_____
START TIME <u>6:00</u> A.M.		LATERAL: # _____	PIPE DIA. _____
_____		STATION _____	LINEAR FT. _____
STOP TIME <u>6:00</u> P.M.		RISER HEIGHT _____	TRENCH DEPTH _____
_____		_____	_____
_____		SUMPS _____	VALVES _____

COMMENTS:

Arrived on site set up and drilled EW138R to depth and completed then moved and set up on EW127R and drilled it to a depth of 90ft was not able to reach the original depth of 126ft due to excessive sludge and leachate I was informed to set it at 90ft

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

Detin Moore

AEGL SITE SUPERVISOR

4/18/2012

DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/19/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING		CONSTRUCTION	
126 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
126 LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH _____	
105 PERFORATED PIPE-DIA. 6" HDPE SDR-11		HEADER # _____	PIPE DIA. _____
23 SOLID PIPE -DIA. 6" HDPE SDR-11		STATION _____	LINEAR FT. _____
		TRENCH DEPTH _____	
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
TEW5R2-126R		STATION # _____	LINEAR FT. _____
		TRENCH DEPTH _____	
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>6:00</u> A.M.		LATERAL: # _____	PIPE DIA. _____
STOP TIME <u>6:00</u> P.M.		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

Arrived on site set up and drilled TEW5R2 to depth and completed also constructed a bench EW154R2 so one bench will be charged

Detin Moore 4/19/12
CLIENT REPRESENTATIVE DATE
Detin Moore CQA Senior Coldwell
NAME & TITLE

Detin Moore 4/19/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/19/2012

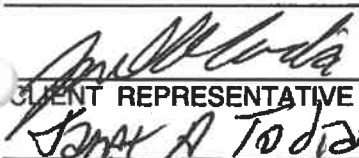
Thurs.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
PERFORATED PIPE-DIA.	AIR # From Ew-161 PIPE DIA. 2"
SOLID PIPE -DIA.	STATION 0+00 to 4+70 LINEAR FT. 470'
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH 3'
	FORCEMAIN # From Ew-161 PIPE DIA. 2"
	STATION # 0+00 to 4+70 LINEAR FT. 470'
	TRENCH DEPTH 3'
	COMMUNTION # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMP _____ FM _____
GENERAL INFORMATION	
WEATHER CONDITIONS	
sunny	
START TIME 7:00AM	
STOP TIME 7:00PM	

Today we started with our safety meeting and then we went over and started trench on 2" air and forcemain line from EW-161 down to road crossing. While we were digging we also fused up 6" 90 risers and fused them to the end of each of all the 6" stringers and put on air test for 6" laterals that we will be installing tomorrow. We put air test on at 25 psi over night. We also was cleaning water out of communication lines and feeding string thru lines to make sure wire would go thru ok. We installed air and force main lines in trench and put 2" 90 risers at EW-161 at station mark 0+00. We then went down and put tee risers at EW-160 at station mark 1+94. We also installed tee risers at EW-43R2 at station mark 4+07. We then day lighted pipe out of the ground at station mark 4+70. We then set survey risers every 50ft and fittings and rolled caution tape down trench line and then started hauling dirt to trench line and started back filling trench line and dressing up. After trench line was dressed up we wrapped things up and left for the day.


CLIENT REPRESENTATIVE
DATE 4/19/12
NAME & TITLE CAR


AEGL SITE SUPERVISOR
DATE 4/19/2012



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/20/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING	CONSTRUCTION
183 LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	_____ LINEAR FT. _____
183 LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
141 PERFORATED PIPE-DIA. 6" HDPE SDR-11	HEADER # _____ PIPE DIA. _____
_____	_____ LINEAR FT. _____
46 SOLID PIPE -DIA. 6" HDPE SDR-11	STATION _____ TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)	SUBHEADER # _____ PIPE DIA. _____
EW154R2-125ft	_____ LINEAR FT. _____
EW49R2-58ft	STATION # _____ TRENCH DEPTH _____
_____	_____
_____	LATERAL: # _____ PIPE DIA. _____
_____	_____ LINEAR FT. _____
_____	STATION _____ TRENCH DEPTH _____
_____	RISER HEIGHT _____
GENERAL INFORMATION	_____
WEATHER CONDITIONS	LATERAL: # _____ PIPE DIA. _____
_____	_____ LINEAR FT. _____
_____	STATION _____ TRENCH DEPTH _____
START TIME <u>6:00</u> A.M.	RISER HEIGHT _____
STOP TIME <u>6:00</u> P.M.	_____
_____	LATERAL: # _____ PIPE DIA. _____
_____	_____ LINEAR FT. _____
_____	STATION _____ TRENCH DEPTH _____
_____	RISER HEIGHT _____
_____	_____
_____	SUMPS _____ VALVES _____
_____	_____

COMMENTS:

Arrived on site set up and drilled EW154R2 to depth and completed then moved and set up on EW49R2 and drilled to depth and completed

Jonas A. Todia 4/20/12
CLIENT REPRESENTATIVE DATE
Jonas A. Todia CDR
NAME & TITLE

Detin Moore 4/20/2012
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/20/2012

Fri.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT	STATION LINEAR FT.
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH
PERFORATED PIPE-DIA.	AIR # PIPE DIA.
SOLID PIPE -DIA.	STATION LINEAR FT.
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH
	FORCEMAIN # PIPE DIA.
	STATION LINEAR FT.
	TRENCH DEPTH
	COMMUNION # PIPE DIA.
	STATION LINEAR FT.
	TRENCH DEPTH
GENERAL INFORMATION	LATERAL: # Ew-112R PIPE DIA. 6"
WEATHER CONDITIONS	STATION 0+00 to 0+15 LINEAR FT. 15'
sunny	RISER HEIGHT TRENCH DEPTH 3>4
	LATERAL # Ew-113R PIPE DIA. 6"
	STATION 0+00 to 0+14 LINEAR FT. 14'
	RISER HEIGHT TRENCH DEPTH 3>4
START TIME 7:00AM	SUMP FM
STOP TIME 5:00PM	

We started with our safety meeting and then went up on top of the hill and started exposing around old wells and new wells also abandonments and running new 6" laterals to the redrills. All laterals are located on top of liner. After We exposed around all risers and trenched small laterals. We got with Janet and had her call and have scs shut valves so we could tie in laterals after lunch. We fabbed up laterals and we then installed laterals with a 6" EFC do to the fact that we had to get down to the top of the liner for grade. We tied in 6" laterals to EW-112R and EW-113R We also had to abandon old wells EW-112 and EW-113 with 6" fused butt caps. We also had to abandon EW-112S and EW-113S both the well and vaccum risers with 6" fused butt caps. While we did that we also finished cleaning water out of 3" communication line and feed string thur all 3" pipe. We were going to tie in EW-114R but they couldn't control shutting the valves. They feared if we would tie in 6" lateral they would get to much oxygen and shut the flares and EDI down. Do to the fact that the communication lines arent hooked up yet. So we made argainments to start tie in 6" laterals on Tuesday and Wednesday when the plant is shut down. We then wrapped things up and left for the weekend.

CLIENT REPRESENTATIVE 4/20/2012
NAME & TITLE DATE
Janet A. Todis CPA

AEGL SITE SUPERVISOR 4/20/2012
DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/21/2012

Sat.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT.
LINEAR FEET OF WELL COMPLETION	STATION TRENCH DEPTH
PERFORATED PIPE-DIA.	AIR # PIPE DIA.
SOLID PIPE -DIA.	LINEAR FT.
COMPLETION: (WELL NUMBERS)	STATION TRENCH DEPTH
	FORCEMAIN # PIPE DIA.
	LINEAR FT.
	STATION # TRENCH DEPTH
	COMMUNION # PIPE DIA.
	LINEAR FT.
	STATION TRENCH DEPTH
GENERAL INFORMATION	LATERAL: # PIPE DIA.
WEATHER CONDITIONS	STATION LINEAR FT.
	RISER HEIGHT TRENCH DEPTH
	LATERAL # PIPE DIA.
	STATION LINEAR FT.
	RISER HEIGHT TRENCH DEPTH
START TIME	SUMP FM
STOP TIME	

We didn't work today

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

4/21/2012
DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/22/2012

Sun.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT	STATION LINEAR FT.
LINEAR FEET OF WELL COMPLETION	STATION TRENCH DEPTH
PERFORATED PIPE-DIA.	AIR # PIPE DIA.
SOLID PIPE -DIA.	STATION LINEAR FT.
COMPLETION: (WELL NUMBERS)	STATION TRENCH DEPTH
	FORCEMAIN # PIPE DIA.
	STATION LINEAR FT.
	STATION TRENCH DEPTH
	COMMUNION # PIPE DIA.
	STATION LINEAR FT.
	STATION TRENCH DEPTH
GENERAL INFORMATION	LATERAL: # PIPE DIA.
WEATHER CONDITIONS	STATION LINEAR FT.
	RISER HEIGHT TRENCH DEPTH
	LATERAL # PIPE DIA.
START TIME	STATION LINEAR FT.
STOP TIME	RISER HEIGHT TRENCH DEPTH
	SUMP FM

We didn't work today

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

4/22/2012

DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/23/2012

Mon.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	FORCEMAIN # EW-102 PIPE DIA. 2"
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. 69'
LINEAR FEET OF WELL COMPLETION	STATION 1+31 TO 2+00 TRENCH DEPTH 3'
PERFORATED PIPE-DIA.	AIR # EW-141R PIPE DIA. 2"
SOLID PIPE -DIA.	LINEAR FT. 250'
COMPLETION: (WELL NUMBERS)	STATION 0+00 to 2+50 TRENCH DEPTH 3'
	FORCEMAIN # EW-141R PIPE DIA. 4x2
	LINEAR FT. 250'
	STATION # 0+00 to 2+50 TRENCH DEPTH 3'
	AIR # EW-122R PIPE DIA. 2"
	LINEAR FT. 130'
	STATION 0+00 to 1+30 TRENCH DEPTH 3'
GENERAL INFORMATION	FORCEMAIN # EW-122R PIPE DIA. 4x2
WEATHER CONDITIONS	STATION 0+00 to 1+30 LINEAR FT. 130'
Windy	TRENCH DEPTH 3'
	AIR# EW-102 PIPE DIA. 2"
	LINEAR FT. 200'
START TIME 7:00AM	STATION 0+00 to 2+00 TRENCH DEPTH 3'
STOP TIME 7:00PM	FORCEMAIN# EW-102 PIPE DIA. 4X2
	LINEAR FT. 131'
	STATION 0+00 TO 1 TRENCH DEPTH 3'

Today we started with our safety meeting and then went up on the hill and started trenching on air and force main lines in the trash. But how ever the wind was blowing way too hard so we shut down working ing the trash and then moved over on the cap and started trenching on air and force main. We dug trenches for EW-141R,EW-122R and started trench for EW-102 until we ran into trash. We ran 4x2 dual contained force main on EW-102 for 131' then put a end seal and turned it into 2". We also dug around 6" redrills and prep up for tie ins and exposed the liner repairs for the redrills. We Also backfilled trench lines and set survey risers every 50ft and fittings. We also rolled caution tape down trench line and dressed up laterals. We also had 2 guys down on the communcation boxes and drilling holes for ballards which we rented a ugar from sunbelt along with a 12" bit. They drilled 3ft into ground and put 4" steel pipes into hole. We then also went and concreted around pipe and maded sure all ballards were the same height and straight. After the concreted around pipes we went and filled up all 4" pipes with concrete to the top. We used a total of 47 bags of concrete. We also took back rental to sunbelt. We also put air and formain and 6" on air test over night. We then wrapped things up and left for the day.

CLIENT REPRESENTATIVE DATE 4/23/12
NAME & TITLE Janet A Todia CCA

AEGL SITE SUPERVISOR DATE 4/23/2012



American
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DAILY DIARY

DATE: 4/24/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING		CONSTRUCTION	
230 LINEAR FEET OF DRILLING		HEADER # _____	PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT		STATION _____	LINEAR FT. _____
230 LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH _____	
188 PERFORATED PIPE-DIA.	6" 7/8" HDPE SDR-11	HEADER # _____	PIPE DIA. _____
48 SOLID PIPE -DIA.	6" 7/8" HDPE SDR-11	STATION _____	LINEAR FT. _____
		TRENCH DEPTH _____	
COMPLETION: (WELL NUMBERS)		SUBHEADER # _____	PIPE DIA. _____
EW17R3-123ft	8"SDR11	STATION # _____	LINEAR FT. _____
EW117R-107ft	6"SDR11	TRENCH DEPTH _____	
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		LATERAL: # _____	PIPE DIA. _____
		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
GENERAL INFORMATION		LATERAL: # _____	PIPE DIA. _____
WEATHER CONDITIONS		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
START TIME <u>6:00 A.M.</u>		LATERAL: # _____	PIPE DIA. _____
STOP TIME <u>6:00 P.M.</u>		STATION _____	LINEAR FT. _____
		RISER HEIGHT _____	TRENCH DEPTH _____
		SUMPS _____	VALVES _____

COMMENTS:

Arrived on site set up and drilled EW17R3 to depth and completed then moved and drilled EW117R to depth and completed

Detin Moore 4/24/12
CLIENT REPRESENTATIVE DATE
Engr A Tedia COA Brown-Caldwell
NAME & TITLE

Detin Moore 4/24/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/24/2012

Tues.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION	
LINEAR FEET OF DRILLING	LATERAL # <u>EW-35R2</u>	PIPE DIA. <u>6"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	STATION <u>0+00 TO 0+33</u>	LINEAR FT. <u>33'</u>
LINEAR FEET OF WELL COMPLETION		TRENCH DEPTH <u>3'</u>
PERFORATED PIPE-DIA.	LATERAL # <u>EW-31R</u>	PIPE DIA. <u>6"</u>
SOLID PIPE -DIA.	STATION <u>0+00 TO 0+45</u>	LINEAR FT. <u>45'</u>
		TRENCH DEPTH <u>3'</u>
COMPLETION: (WELL NUMBERS)	LATERAL# <u>EW-127R2</u>	PIPE DIA. <u>6"</u>
	STATION # <u>0+00 TO 0+29</u>	LINEAR FT. <u>29'</u>
		TRENCH DEPTH <u>3'</u>
	LATERAL# <u>TEW-5R2</u>	PIPE DIA. <u>6"</u>
	STATION <u>0+00 TO 0+30</u>	LINEAR FT. <u>30'</u>
		TRENCH DEPTH <u>3'</u>
	LATERAL# <u>EW-114R</u>	PIPE DIA. <u>6"</u>
	STATION <u>0+00 TO 0+22</u>	LINEAR FT. <u>22'</u>
		TRENCH DEPTH <u>3'</u>
	LATERAL# <u>EW-108R</u>	PIPE DIA. <u>6"</u>
	STATION <u>0+00 TO 0+20</u>	LINEAR FT. <u>20'</u>
		TRENCH DEPTH <u>3'</u>
	TIE-IN <u>6-6"</u>	ABANDONMENTS <u>7-6"</u>

GENERAL INFORMATION

WEATHER CONDITIONS

Windy

START TIME 7:00AM

STOP TIME 7:00PM

Today we started with our safety meeting and then went up on the hill and started preping up for tie ins after plant shut down we then tied

in EW-35R2,EW-31R,EW-127R2,TEW-5R2,EW-114R and EW-108R. All laterals were air tested at 25psi for 4 hours over night the day

before and passed by Janet the QC. We maded all tie ins with 6" EFC do to the fact we had to get so close to the liner for grade. We

also abandon old wells EW-35R2, EW-31R,EW-127R2,TEW-5R2,EW-114R and EW-108R. We abandoned wells by putting dirt in old

well and then put a bentonite on top of dirt and then put a 6" slip cap on old well with a silicone bead and 3 lag screws in slip

cap. We also built other 6" laterals and put them on air test over night. We then wrapped things up and left for the day.

Janet A. Towler 4/24/12
CLIENT REPRESENTATIVE DATE
Janet A. Towler CRA
NAME & TITLE

[Signature] 4/24/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
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DAILY DIARY

DATE: 4/25/2012

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DRILLING	CONSTRUCTION
<u>239</u> LINEAR FEET OF DRILLING	HEADER # _____ PIPE DIA. _____
_____ LINEAR FEET OF DRILLING-ABANDONMENT	_____ LINEAR FT. _____
<u>239</u> LINEAR FEET OF WELL COMPLETION	STATION _____ TRENCH DEPTH _____
<u>176</u> PERFORATED PIPE-DIA. <u>6"</u> HDPE SDR-11	HEADER # _____ PIPE DIA. _____
<u>69</u> SOLID PIPE -DIA. <u>6"</u> HDPE SDR-11	_____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
EW87R2-58ft	SUBHEADER # _____ PIPE DIA. _____
EW121R-72ft	_____ LINEAR FT. _____
EW5R2-109ft	STATION _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	LATERAL: # _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	RISER HEIGHT _____ TRENCH DEPTH _____
	SUMPS _____ VALVES _____

COMMENTS:

Arrived on site set up and drilled EW87R2 to depth and completed then moved and drilled EW121R to depth and completed then moved and drilled EW5R2 to depth and completed

Detin Moore 4/25/12
CLIENT REPRESENTATIVE DATE
Detin Moore CDR Bow & Caldwell
NAME & TITLE

Detin Moore 4/25/2012
AEG SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/25/2012

Weds.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	LATERAL # EW-49R2 PIPE DIA. 6"
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. 29'
LINEAR FEET OF WELL COMPLETION	STATION 0+00 to 0+29 TRENCH DEPTH 3>4
PERFORATED PIPE-DIA.	LATERAL # EW-154R2 PIPE DIA. 6"
SOLID PIPE -DIA.	LINEAR FT. 19'
COMPLETION: (WELL NUMBERS)	STATION 0+00 to 0+19 TRENCH DEPTH 3>4
	LATERAL# EW-138R PIPE DIA. 6"
	LINEAR FT. 26'
	STATION # 0+00 to 0+26 TRENCH DEPTH 3>4
	LATERAL# EW-117 PIPE DIA. 6"
	LINEAR FT. 24'
	STATION 0+00 to 0+24 TRENCH DEPTH 3>4
	LATERAL# EW-17R PIPE DIA. 6"
	LINEAR FT. 23'
	TRENCH DEPTH 3>4
	LATERAL# PIPE DIA.
	LINEAR FT.
	STATION TRENCH DEPTH
	TIE-IN 5-6" ABANDONMENTS 5-6"
GENERAL INFORMATION	
WEATHER CONDITIONS	
Sunny	
START TIME 7:00AM	
STOP TIME 7:00PM	

Today we started with our safety meeting and then went up on the hill and started doing 6" tie in redrills. We tied in EW-49R2,EW-154R2, EW-138R,EW-117R and EW-17R. We tie in all laterals with 6" EFC to make things faster so we didn't effect power plant and flares. We also abandon old wells EW-49R,EW-154R,EW-138,EW-117 and EW-17. We abandon old wells by filling up wells with dirt topped off with beninite then we put a 6" slip cap with silicone bead in it with 3 lag screws. Also the liner crew came in and booted all wells that we had dug up and got tie in. We also had to run 2" air and force main with EW-17R,EW-138R and EW-154R2. We then Wrapped things up and left for the day.

CLIENT REPRESENTATIVE 4/25/12
NAME & TITLE DATE

AEGL SITE SUPERVISOR 4/25/2012
DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/26/2012

Thurs.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # EW-35R2 PIPE DIA. 2"
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. 33'
LINEAR FEET OF WELL COMPLETION	STATION 0+00 TO 0+33 TRENCH DEPTH 3>4
PERFORATED PIPE-DIA.	FORCEMAIN # EW-35R2 PIPE DIA. 4X2
SOLID PIPE -DIA.	LINEAR FT. 33'
COMPLETION: (WELL NUMBERS)	STATION 0+00 TO 0+33 TRENCH DEPTH 3>4
	AIR# EW-127R2 PIPE DIA. 2"
	LINEAR FT. 29'
	STATION # 0+00 TO 0+29 TRENCH DEPTH 3>4
	FORCEMAIN# EW-127R2 PIPE DIA. 4X2
	LINEAR FT. 29'
	STATION 0+00 TO 0+29 TRENCH DEPTH 3>4
GENERAL INFORMATION	AIR# TEW-5R2 PIPE DIA. 2"
WEATHER CONDITIONS	STATION 0+00 TO 0+30 LINEAR FT. 30'
cloudy	TRENCH DEPTH 3>4
	FORCEMAIN TEW-5R2 PIPE DIA. 4X2
START TIME 7:00AM	STATION 0+00 TO 0+30 LINEAR FT. 30'
STOP TIME 7:00PM	TRENCH DEPTH 3>4
	TIE-IN 10-2" 2-4X2 ABANDONMENTS
	2-4"

Today we started with our safety meeting and then went up on the hill and started trenching on air and forcemain laterals. We started with EW-102 and EW-9R2. After laterals were dug we then tie in both air lines with 2-2" tees and the forcemain with 2-4" tees reduced to 2". We then went over and finished treching on EW-141R after trench was dug we then installed a 4x2 dual cont. tee and 2" tee and then tie in both laterals from EW-141R and EW-122R. We also went over to wells EW-35R2,TEW-5R2 and EW-127R2 and tie I air and forcemain lines. The air lines were all 2" and we changed the forcemain from 2" to 4x2 dual cont because its now on top of the liner. We also started back filling all trenches that were in trash. We set survey risers every 50ft and fitting and rolled caution tape down trench line and then finished backfilling trench lines. We then wrapped things up and left for the day.


CLIENT REPRESENTATIVE DATE
Tina A Todia CCR
NAME & TITLE


AEGL SITE SUPERVISOR DATE
4/26/2012



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/26/2012

Thurs.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # <u>EW-102</u> PIPE DIA. <u>2"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>107'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>2+00 TO 4+07</u> TRENCH DEPTH <u>3>4</u>
PERFORATED PIPE-DIA.	FORCEMAIN # <u>EW-102</u> PIPE DIA. <u>4X2</u>
SOLID PIPE -DIA.	LINEAR FT. <u>107'</u>
COMPLETION: (WELL NUMBERS)	STATION <u>2+00 TO 4+07</u> TRENCH DEPTH <u>3>4</u>
	AIR# <u>EW-9R2</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>105'</u>
	STATION # <u>0+00 TO 1+05</u> TRENCH DEPTH <u>3>4</u>
	FORCEMAIN# <u>EW-9R2</u> PIPE DIA. <u>4X2</u>
	LINEAR FT. <u>105'</u>
	STATION <u>0+00 TO 1+05</u> TRENCH DEPTH <u>3>4</u>
GENERAL INFORMATION	AIR# <u>EW-141R</u> PIPE DIA. <u>2"</u>
WEATHER CONDITIONS	STATION <u>2+50 TO 2+80</u> LINEAR FT. <u>30'</u>
<u>cloudy</u>	TRENCH DEPTH <u>3>4</u>
START TIME <u>7:00AM</u>	FORCEMAIN <u>EW-141R</u> PIPE DIA. <u>4X2</u>
STOP TIME <u>7:00PM</u>	STATION <u>2+50 TO 2+80</u> LINEAR FT. <u>30'</u>
	TRENCH DEPTH <u>3>4</u>
	TIE-IN _____ ABANDONMENTS _____

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/27/2012

FRI.

PROJECT NAME

LORAIN COUNTY

PROJECT#

20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # <u>EW-168 and EW-115</u> PIPE DIA. <u>2"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>260'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>0+00 to 2+60</u> TRENCH DEPTH <u>3>4</u>
PERFORATED PIPE-DIA.	FORCEMAIN # <u>EW-168 and EW-115</u> PIPE DIA. <u>2"</u>
SOLID PIPE -DIA.	LINEAR FT. <u>260'</u>
COMPLETION: (WELL NUMBERS)	STATION <u>0+00 to 2+60</u> TRENCH DEPTH <u>3>4</u>
	AIR# <u>EW-48R</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>181'</u>
	STATION # <u>0+00 to 1+81</u> TRENCH DEPTH <u>3>4</u>
	FORCEMAIN# <u>EW-48R</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>181'</u>
	STATION <u>0+00 to 1+81</u> TRENCH DEPTH <u>3>4</u>
GENERAL INFORMATION	AIR# <u>EW-101R2</u> PIPE DIA. <u>2"</u>
WEATHER CONDITIONS	STATION <u>0+00 to 1+43</u> LINEAR FT. <u>143'</u>
<u>Cold/ sunny</u>	TRENCH DEPTH <u>3>4</u>
START TIME <u>7:00AM</u>	FORCEMAIN <u>EW-101R2</u> PIPE DIA. <u>4x2</u>
STOP TIME <u>7:00PM</u>	STATION <u>0+00 to 1+43</u> LINEAR FT. <u>143'</u>
	TRENCH DEPTH <u>3>4</u>
	LATERAL# <u>EW-168</u> PIPE DIA. <u>6"</u>
	STATION <u>0+00 TO 1+37</u> LINEAR FT. <u>137'</u>
	TRENCH DEPTH <u>3>4</u>

Today we started with our safety meeting and then went up on the hill and started digging on the 6" lateral for the remote well EW-168. While we were digging we fused up some air and forcemain and put them on air test for laterals we were digging today. We put 100psi in the air line and 50psi in the forcemain. After 6" lateral was dug we installed a 6" tee into new well EW-168 and ran 6" up to EW-116R. for remote wellhead. We then went up and built fitting to tie into vacuum risers at EW-116R. We then got with Janet so she could get with SCS and shut vacuum off so we could tie into risers. As soon as we got the ok we cut and put fitting in vacuum risers and hooked up wellhead to EW-168. After we had everything back on line we got with SCS and told them they could have everything back. We then went over and started digging for air and forcemain tie in point for EW-115R we dug down 10 ft and couldn't find it at the stake point so we asked if we could just run it from EW-168 because it was shorter run. Janet called Chris and he approved to do it so we trenched from EW-168 to EW-115R it was 127ft of air and forcemain trench. We then went over and trenched 2" at EW-48R. When lateral was dug we got with Janet and she passed all air test so we tie into existing air and forcemain at EW-129R with 2" tee risers then ran it up to EW-48R with 90 risers. We then went over and dug on the cap at EW-101R2 for the air and forcemain as soon as we finished trenching lateral we installed 2" and a 4x2 tee at tie in point and then tie in the air and forcemain to them. We then wrapped things up and left for the day.

Janet A. Todio 4/27/12
CLIENT REPRESENTATIVE DATE
Janet A. Todio COA
NAME & TITLE

[Signature] 4/27/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/28/2012

Sat.

PROJECT NAME

LORAIN COUNTY

PROJECT#

20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # <u>EW-43R2</u> PIPE DIA. <u>2"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>61'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>4+70 to 5+31</u> TRENCH DEPTH <u>5'</u>
PERFORATED PIPE-DIA.	FORCEMAIN # <u>EW-43R2</u> PIPE DIA. <u>2"</u>
SOLID PIPE -DIA.	LINEAR FT. <u>61'</u>
COMPLETION: (WELL NUMBERS)	STATION <u>4+70 to 5+31</u> TRENCH DEPTH <u>5'</u>
	AIR# _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	FORCEMAIN# _____ TRENCH DEPTH _____
	PIPE DIA. _____
	LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	FORCEMAIN _____ TRENCH DEPTH _____
	PIPE DIA. _____
	LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	FORCEMAIN _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	CMP <u>40ft/12"</u>

GENERAL INFORMATION

WEATHER CONDITIONS

cloudy/rain

START TIME 7:00AM

STOP TIME 12:00PM

We started the day with our safety meeting and then went up on top of the hill and started digging on the road crossing coming from EW-43R2 to the tie in point. After we broke thru the road we then installed 40ft of 12"CMP and bolted them together. We then feed both 2" air and forcemain lines into CMP. We then marked out pipe and set survey risers on each end of the CMP and then we hauled brick to the road crossing. We filled trench all the way up and beat in road in lifts so road crossing wouldn't sink. We then hauled dirt and filled in trench line and put water way back in. After we finished backfilling we wrapped things up and left for the day. We also did worked on generators and chainsaws while we were working on road crossing.

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

DATE



DATE: 4/29/2012
Sun.

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		AIR #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		FORCEMAIN #	TRENCH DEPTH
PERFORATED PIPE-DIA.		STATION	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION #	LINEAR FT.
		FORCEMAIN#	TRENCH DEPTH
			PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		FORCEMAIN	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		LATERAL#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH

We didn't work today.


 CLIENT REPRESENTATIVE

4/29/12
 DATE

Ismael A Todor COA
 NAME & TITLE


AEGL SITE SUPERVISOR DATE 4/29/2012



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 4/30/2012

Mon.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	LATERAL # <u>EW-101R2</u> PIPE DIA. <u>6"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>25'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>0+00 TO 0+25</u> TRENCH DEPTH <u>3'</u>
PERFORATED PIPE-DIA.	LATERAL # <u>EW-5R2</u> PIPE DIA. <u>6"</u>
SOLID PIPE -DIA.	LINEAR FT. <u>18'</u>
COMPLETION: (WELL NUMBERS)	STATION <u>0+00 TO 0+18</u> TRENCH DEPTH <u>3'</u>
	LATERAL# <u>EW-120R</u> PIPE DIA. <u>6"</u>
	LINEAR FT. <u>31'</u>
	STATION # <u>0+00 TO 0+31</u> TRENCH DEPTH <u>3'</u>
	LATERAL# <u>EW-87R2</u> PIPE DIA. <u>6"</u>
	LINEAR FT. <u>26'</u>
	STATION <u>0+00 TO 0+26</u> TRENCH DEPTH <u>3'</u>
GENERAL INFORMATION	LATERAL# _____ PIPE DIA. _____
WEATHER CONDITIONS	STATION _____ LINEAR FT. _____
<u>sunny</u>	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
START TIME <u>7:00AM</u>	TIE-IN <u>4-6"</u> ABANDONMENTS <u>4-6"</u>
STOP TIME <u>6:00PM</u>	

Today we started with our safety meeting and then went on top of the and started tie in redrills. We tie in EW-101R2,EW-5R2,EW-120R and EW-87R2 to existing vacuum risers. We also abandon wells EW-101R,EW-5R,EW-120 and EW-87R with 6" slip caps with a bead of silicon with 3 lag screws. We hard welded 2 of the 6" tie ins and used 2 6" EFC for the other 2 tie ins. We also went up and put air test on 2" forcemain and 2" air line coming from EW-161. We put 50 psi in the forcemain and a 100PSI in the air line for 4 hours. Janet then went up and checked air test and passed it and let air off both pipes. We then wrapped things up and left for the day.

Janet A Todia 4/30/12
CLIENT REPRESENTATIVE DATE
Janet A Todia CCR
NAME & TITLE

[Signature] 4/30/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/1/2012

Tues.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	LATERAL # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
PERFORATED PIPE-DIA.	LATERAL # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	TIE-IN _____ ABANDONMENTS _____

GENERAL INFORMATION

WEATHER CONDITIONS

cloudy/light rain.

START TIME 7:00AM

STOP TIME 5:30PM

We started with our safety meeting and then went up on the hill and dug up tie in point for the air and forcemain coming across the road from EW-161. As soon as tie in was dug up we then started tie in by shutting 2 valve on the east slope and pinched the other side off with our pinchers. We then cut pipe and installed a 4" tee with a 4x2 reducer for the forcemain and a 2" tee for the air line. We then tied in 2" laterals to the port side of the tee's coming from EW-161. We then installed a 4" ball valve for the forcemain and a 2" stainless steel ball valves with a blow off for the air line. Both valve was installed on the existing forcemain and air lines. After we finished tie in we took pinchers off and open valve back up and backfilled tie in. While we were doing that we also put domes and painted ballards of the 24" header. We also went up on the hill and exposed around tie in point for the 18" line over by tapping station. We dug down around 7ft and found a old survey riser tie in point was too deep so we are going to tie in to the existing 18" header riser with a 18" tee. We also had Janet call and ask Chris and see if we could just run the air and forcemain in the same trench to EW-52R2. he approved for us to do it. We then backfilled hole and then wrapped things up and left for the day

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/2/2012

Weds.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # <u>EW-40R2</u> PIPE DIA. <u>2"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>47'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>0+00 TO 0+47</u> TRENCH DEPTH <u>3'</u>
PERFORATED PIPE-DIA.	FORCEMAIN # <u>EW-40R2</u> PIPE DIA. <u>2"</u>
SOLID PIPE -DIA.	LINEAR FT. <u>47'</u>
COMPLETION: (WELL NUMBERS)	STATION <u>0+00 TO 0+47</u> TRENCH DEPTH <u>3'</u>
	AIR# <u>EW-159</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>122'</u>
	STATION # <u>0+00 TO 1+22</u> TRENCH DEPTH <u>3'</u>
	FORCEMAIN# <u>EW-159</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>122'</u>
	STATION <u>0+00 TO 1+22</u> TRENCH DEPTH <u>3'</u>
GENERAL INFORMATION	AIR# <u>EW-146R</u> PIPE DIA. <u>2"</u>
WEATHER CONDITIONS	STATION <u>0+00 TO 1+60</u> LINEAR FT. <u>160'</u>
<u>sunny</u>	TRENCH DEPTH <u>3'</u>
START TIME <u>7:00AM</u>	FORCEMAIN# <u>EW-146R</u> PIPE DIA. <u>2"</u>
STOP TIME <u>5:30PM</u>	STATION <u>0+00 TO 1+60</u> LINEAR FT. <u>160'</u>
	TRENCH DEPTH <u>3'</u>
	TIE-IN <u>5-2"</u> CMP <u>40ft-12"</u>
	<u>1-4"</u>

We started with our safety meeting and then went up on the hill and and started digging trench for EW-40R2 and EW-159. After trench and tie in point was dug we then installed 2" tee's and tied in both laterals. While we were tie in 2" laterals we went over and started trenching and exposing tie in for EW-146R. When we finished tie in laterals for EW-40R2 and EW-159. We then went over to lateral for EW-146R and put 40ft of 12" CMP in trench for road crossing. We bolted up both piece together and feed both pipes through 12" CMP. We then went down and tied into the existing air and forcemain with a 4" tee reduced to 2" for the forcemain and a 2" tee for the air line. Once tees were installed we tie in 2" laterals from EW-146R. We then backfilled all trenches and set survey risers every 50ft and fittings rolled caution tape down trench lines. We also used 2 loads of brick for road crossing. After everything was back filled we wrapped things up and left for the day.

James A. Todia 5/2/12
CLIENT REPRESENTATIVE DATE
James A. Todia CBA
NAME & TITLE

[Signature] 5/2/2012
AEGL SITE SUPERVISOR DATE



DATE: 5/3/2012
Thurs

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		AIR #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		FORCEMAIN #	TRENCH DEPTH
PERFORATED PIPE-DIA.		STATION	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION #	LINEAR FT.
		FORCEMAIN#	TRENCH DEPTH
		STATION	PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		FORCEMAIN#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		FORCEMAIN#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		TIE-IN 2-24"	CMP

Today we started with our safety meeting and then went up on the hill and started digging up both 24" tie ins for the 18" lines. While we were digging up tie ins we fabbed up tee's and bolted 18" valves to the port sides of the 24x18 tees. After we finished digging both tie ins we then got with SCS and had them shut the 24" header system down so we could make both tie ins. Both tie in required us to put the 24" machine in hole. We welded the tee on one side and a 24" flange on the other side and bolted 24" flanges together on both tie ins. After both tie ins were complete we told SCS that they could have the system back. So we then started backfilling holes and covered up trash. When we finished that we wrapped things up and left for the day.

CLIENT REPRESENTATIVE *Carol Bodie* DATE *5/31/12*
 NAME & TITLE *Tamara Bodie CDA*

 5/3/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/4/2012

Fri.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	HEADER # 18" eastside PIPE DIA. 18"
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. 207
LINEAR FEET OF WELL COMPLETION	STATION 0+00 to 2+07 TRENCH DEPTH 3-5
PERFORATED PIPE-DIA.	FORCEMAIN # PIPE DIA.
SOLID PIPE -DIA.	LINEAR FT.
COMPLETION: (WELL NUMBERS)	STATION TRENCH DEPTH
	AIR# PIPE DIA.
	LINEAR FT.
	STATION # TRENCH DEPTH
	FORCEMAIN# PIPE DIA.
	LINEAR FT.
	STATION TRENCH DEPTH
	AIR# PIPE DIA.
	STATION LINEAR FT.
	TRENCH DEPTH
	FORCEMAIN# PIPE DIA.
	STATION LINEAR FT.
	TRENCH DEPTH
	TIE-IN CMP

WEATHER CONDITIONS
sunny/rain

START TIME 7:00AM

STOP TIME 5:30PM

Today we started with our safety meeting and then went over and started digging on 18" header on the east side of the landfill. While we were trenching on header we welded a 18" flanges to a 18" 45 elbow and then welded it up to a stringer so we could bolt up to 18" valve that we installed yesterday. We were trenching and all the sudden the rain popped up on the radar so we had to stop trenching and put 18" pipe in trench and had to feed pipe under existing 2" air and forcemain along with a 6" lateral. After 18" pipe was in trench we then bolted up 18" flange to the 18" valve. We then marked pipe out and shot in pipe. All pipe was shot in at 3% or more grade so we then started backfilling trench line and putting survey risers every 50ft mark and rolled caution tape down trench line. We then finished backfilling until the lighting started so we then wrapped things up and left for the day.

(NOTE) Liner guys came in and did the rest of the redrill repairs and boots today

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

5/4/2012
DATE

5/5/2012
DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/6/2012

Sun.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	TRENCH DEPTH _____
PERFORATED PIPE-DIA.	FORCEMAIN # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	FORCEMAIN# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	FORCEMAIN _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____

GENERAL INFORMATION

WEATHER CONDITIONS

START TIME _____

STOP TIME _____

We didn't work today.

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

5/6/2012
DATE



DATE: 5/7/2012
Mon.

PROJECT NAME	LORAIN COUNTY
PROJECT#	20212114

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		AIR #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		FORCEMAIN #	TRENCH DEPTH
PERFORATED PIPE-DIA.		STATION	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION #	LINEAR FT.
		FORCEMAIN#	TRENCH DEPTH
		STATION	PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		FORCEMAIN	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		LATERAL#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
GENERAL INFORMATION			
WEATHER CONDITIONS			
rain			
START TIME 7:00AM			
STOP TIME 10:00AM			

Today we had our safety meeting and then went up on the hill and bolted a 18" blind and welded a 18" buttcap to the other end of the 18" header to air test pipe going in by the untrapping station. We put air test at 10PSI and got with Janet to let her know air test was on. Janet check test and we then started moving down to the other 18" header and started fusing. But when we got over there it started raining and lighting so we wrapped things up and left for the day. We also was staged dirt on the 18" header lines while we were fusing up pipe.

 5/7/12
 CLIENT REPRESENTATIVE DATE
 CCR
 NAME & TITLE


AEGL SITE SUPERVISOR

5/7/2012
DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/8/2012

Tues.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	AIR # _____ PIPE DIA. _____
LINEAR FEET OF DRILLING-ABANDONMENT	STATION _____ LINEAR FT. _____
LINEAR FEET OF WELL COMPLETION	FORCEMAIN # _____ PIPE DIA. _____
PERFORATED PIPE-DIA.	STATION _____ LINEAR FT. _____
SOLID PIPE -DIA.	STATION _____ TRENCH DEPTH _____
COMPLETION: (WELL NUMBERS)	AIR# _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	FORCEMAIN# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	FORCEMAIN _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	LATERAL# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____

GENERAL INFORMATION

WEATHER CONDITIONS

Rain

START TIME 7:00AM

STOP TIME 9:00AM

Today we showed up to work and it was still raining so we shut down for the day. Rick want the fence on the eastside by the haul road put back up that we had to take down for the air and forcemain trench that we did last week so we put fence up and left site.

CLIENT REPRESENTATIVE 5/8/12 DATE

James A. Todis CQA
NAME & TITLE

AEGL SITE SUPERVISOR

5/8/2012
DATE



DATE: 5/9/2012
Weds.

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		AIR #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION	TRENCH DEPTH
PERFORATED PIPE-DIA.		FORCEMAIN #	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)		STATION	TRENCH DEPTH
		AIR#	PIPE DIA.
			LINEAR FT.
		STATION #	TRENCH DEPTH
		FORCEMAIN#	PIPE DIA.
			LINEAR FT.
		STATION	TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		FORCEMAIN	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		LATERAL#	PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
GENERAL INFORMATION			
WEATHER CONDITIONS			
cloudy			
START TIME	7:00AM		
STOP TIME	4:30AM		

Today we started with our safety meeting and then went over and started exposing 24" pipe so we could install a 2" branch saddle and a sump vault. While we were doing that we drilled out holes in the bottom of the sump vault. When we finished exposing 24" header we put a 2" saddle on the 24" header pipe. As soon as scs shut down vacuum we then drilled out hole in the saddle and welded 2" pipe to saddle. We then brought over sump vault and feed 2" thru bottom of sump and put it in place. We then put gravel around 18" perf and the bottom of the tank. We then drilled and tapped out hole for the flow meter and installed flow meter. We then ran 2" pipe from the tank to the fence line where the ditch line drains to the woods. We then backfilled around sump and trench line. While we were doing that we started putting stickers on fence post for the 24" header system. Then it started to rain so we wrapped things up and left for the day.

 5/9/12
 CLIENT REPRESENTATIVE DATE
 CDR
 NAME & TITLE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/10/2012

Thurs.

PROJECT NAME

LORAIN COUNTY

PROJECT#

20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	Header # 18" westside
LINEAR FEET OF DRILLING-ABANDONMENT	PIPE DIA. 18"
LINEAR FEET OF WELL COMPLETION	LINEAR FT. 210'
PERFORATED PIPE-DIA.	STATION 0+00 to 2+10
SOLID PIPE -DIA.	TRENCH DEPTH 5>6
COMPLETION: (WELL NUMBERS)	FORCEMAIN #
	PIPE DIA.
	LINEAR FT.
	STATION
	TRENCH DEPTH
	AIR# EW-52R2
	PIPE DIA. 2"
	LINEAR FT. 210'
	STATION # 0+00 to 2+10
	TRENCH DEPTH 5>6
	FORCEMAIN# EW-52R2
	PIPE DIA. 2"
	LINEAR FT. 210'
	STATION 0+00 to 2+10
	TRENCH DEPTH 5>6
	AIR#
	PIPE DIA.
	STATION
	LINEAR FT.
	TRENCH DEPTH
	FORCEMAIN
	PIPE DIA.
	STATION
	LINEAR FT.
	TRENCH DEPTH
	CMP 60ft-24"
	60ft-12"

GENERAL INFORMATION

WEATHER CONDITIONS

cloudy

START TIME 7:00AM

STOP TIME 7:00PM

Today we started with our safety meeting and then went over and started digging on the westside 18" header line. While we were trenching we started preping up for the 18" tie in and road crossings. We then put pipe in trench and bolted up to the 18" valve we installed last week. After tie in was dug up we got with SCS and they isolated tie in point. We then cut pipe and installed a 18" tee to the existing riser. While we were installing the 18" tee we put 60ft of 24" CMP on header for road crossing. We then tie in the 18" header to port side of the 18" tee. We then put 60ft of 12" CMP beside the 24" CMP. We then feed 2" air and forcemain thur CMP. We then tie in the 2" air and forcemain to the existing pipe at EW-130R. We then shot in pipe at 3% or more grade it all shot in good so we started backfilling trench we set survey every 50ft and fittings. We also hauled brick for the road crossing. After trench and road crossing was all backfilled we wrapped things up and left for the day.

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/11/2012
Fri.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	Header # <u>18" eastside</u> PIPE DIA. <u>18"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>183'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>2+07 to 3+90</u> TRENCH DEPTH <u>5>6</u>
PERFORATED PIPE-DIA.	FORCEMAIN # _____ PIPE DIA. _____
SOLID PIPE -DIA.	STATION _____ LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION # _____ LINEAR FT. _____
	TRENCH DEPTH _____
	FORCEMAIN# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	FORCEMAIN _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	CMP _____

GENERAL INFORMATION

WEATHER CONDITIONS

Sunny

START TIME 7:00AM

STOP TIME 7:00PM

Today we started with our safety meeting and then went over and started digging on the eastside 18" header line. While we were digging we fused up a stringer of 18" pipe up and installed a tee in 18" for EW-133. After trench was open up where we could get pipe in trench we did a ditch fuse on the pipe where we left off last week. We then shot in 18" header at 3% or more grade it all shot in at 3% or more grade. We set survey risers every 50ft mark and fittings. Also we went up and dug up around tie in point on top of the liner and at the flap where the liner ends. We then shot top of the liner it only shot in at less than a 1% grade. We then got with Janet and we had to get with Chris to find out what he wanted to do. He wanted us to reroute the ditch going to the west of the trench. So therefore we took a couple of more shots to find out where we need to make high point. We spent 2hrs on fixing the problem. We then started back on trenching after we figured out where we needed to dig. We had to turn the trench line to the west. We then had to stop digging on trench because the face was closing. So therefore we finished backfilling trench line and then wrapped things up and left for the day.

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/12/2012
Sat.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	CONSTRUCTION
LINEAR FEET OF DRILLING	LATERAL # <u>EW-133</u> PIPE DIA. <u>6"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>130'</u>
LINEAR FEET OF WELL COMPLETION	STATION <u>0+00 to 1+30</u> TRENCH DEPTH <u>3'</u>
PERFORATED PIPE-DIA.	FORCEMAIN # _____ PIPE DIA. _____
SOLID PIPE -DIA.	LINEAR FT. _____
COMPLETION: (WELL NUMBERS)	STATION _____ TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	LINEAR FT. _____
	STATION # _____ TRENCH DEPTH _____
	FORCEMAIN# _____ PIPE DIA. _____
	LINEAR FT. _____
	STATION _____ TRENCH DEPTH _____
	AIR# _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	FORCEMAIN _____ PIPE DIA. _____
	STATION _____ LINEAR FT. _____
	TRENCH DEPTH _____
	CMP _____

GENERAL INFORMATION

WEATHER CONDITIONS

Sunny

START TIME 7:00AM

STOP TIME 3:00PM

Today we started with our safety meeting and then went up and started digging on 6" lateral going to EW-133 coming for the eastside 18" header pipe. While we were trenching we fused up 6" lateral and fused up more 18" pipe. We then installed a tee with a future blind on one side of the tee at high point of the 18" header and then put enough 18" pipe to make it to the tie in point. We then went down and installed a 6" lateral going to EW-133. After we finished installing 6" lateral we shot in pipe at 3% grade it all shot in at 3% or more grade. So we started backfilling trench line. We put survey risers every 50ft mark and fittings and rolled caution tape down trench line. After backfilling was all done we then went up and exposed around 18" riser on top of the liner where we are going to tie in at. We then wrapped things up and left for the day.

CLIENT REPRESENTATIVE

DATE

NAME & TITLE

AEGL SITE SUPERVISOR

5/12/2012
DATE



DATE: 5/13/2012
Sun.

PROJECT NAME	LORAIN COUNTY
PROJECT#	20212114

DRILLING		CONSTRUCTION	
LINEAR FEET OF DRILLING		AIR #	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT		STATION	LINEAR FT.
LINEAR FEET OF WELL COMPLETION		FORCEMAIN #	TRENCH DEPTH
PERFORATED PIPE-DIA.		STATION	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
COMPLETION: (WELL NUMBERS)			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION #	LINEAR FT.
		FORCEMAIN#	TRENCH DEPTH
		STATION	PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
		AIR#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		FORCEMAIN	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
		LATERAL#	PIPE DIA.
		STATION	LINEAR FT.
			TRENCH DEPTH
GENERAL INFORMATION			
WEATHER CONDITIONS			
START TIME			
STOP TIME			

We didn't work today.

CLIENT REPRESENTATIVE

DATE _____

NAME & TITLE

AEGL SITE SUPERVISOR

~~5/13/2012~~
~~DATE~~



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/14/2012

Mon.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING	
LINEAR FEET OF DRILLING	HEADER# <u>18" eastside</u> PIPE DIA. <u>18"</u>
LINEAR FEET OF DRILLING-ABANDONMENT	LINEAR FT. <u>281'</u>
LINEAR FEET OF WELL COMPLETION	STATION# <u>3+90 to 6+71</u> TRENCH DEPTH <u>3-5</u>
PERFORATED PIPE-DIA.	AIR# <u>EW-52R2</u> PIPE DIA. <u>2"</u>
SOLID PIPE -DIA.	LINEAR FT. <u>48'</u>
COMPLETION: (WELL NUMBERS)	STATION <u>0+00 to 0+48</u> TRENCH DEPTH <u>3'</u>
	FORCEMAIN# <u>EW-52R2</u> PIPE DIA. <u>2"</u>
	LINEAR FT. <u>48'</u>
	STATION# <u>0+00 to 0+48</u> TRENCH DEPTH <u>3'</u>
	PIPE DIA.
	LINEAR FT.
	TRENCH DEPTH
GENERAL INFORMATION	
WEATHER CONDITIONS	PIPE DIA.
<u>Sunny</u>	LINEAR FT.
	TRENCH DEPTH
	PIPE DIA.
START TIME <u>7:00AM</u>	LINEAR FT.
	TRENCH DEPTH
STOP TIME <u>6:15PM</u>	PIPE DIA.
	LINEAR FT.
	TRENCH DEPTH

Today we started with our safety meeting and then went up on the hill and started digging on the 18" header on the east side. While we were trenching we put air test on 18" header pipe. We put air test at 10 psi for 4hrs. After trenching was all done we then started preping up tie in. We had to expose liner and cut and remove liner away from 18" existing riser pipe so we would have grade. After Janet checked air test and passed it we then got with SCS and had them isolate header for tie in. After SCS gave us the ok we tie in too 18" riser with 18" tee. After tie in was complete we got with SCS and told them they could have there system back. We then shot in all pipe in at 3% or more grade. So we then started backfilling trench line. We set survey risers every 50ft and fittings. We then went over and finished doing the the air and forcemain going to EW-52R2. We then wrapped things up and left for the day

Don McElroy 5/14/12
CLIENT REPRESENTATIVE DATE
Janet A. Todid CDA
NAME & TITLE

[Signature] 5/14/2012
AEGLE SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/15/2012
Tues.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING			
LINEAR FEET OF DRILLING		HEADER#	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION#	TRENCH DEPTH
PERFORATED PIPE-DIA.		AIR#	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
		STATION	TRENCH DEPTH
		FORCEMAIN#	PIPE DIA.
COMPLETION: (WELL NUMBERS)			LINEAR FT.
		STATION#	TRENCH DEPTH
			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
GENERAL INFORMATION			
WEATHER CONDITIONS			PIPE DIA.
Sunny			LINEAR FT.
			TRENCH DEPTH
			PIPE DIA.
START TIME <u>7:00AM</u>			LINEAR FT.
			TRENCH DEPTH
STOP TIME <u>7:00PM</u>			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH

Today we started with our safety meeting and then went up on the hill and started exposing around EW-43R2,EW-48R2,EW-101R2 and EW-122R so we could reduce wells up to 8". After wells were exposed we reduced wells up to 8" because the wellheads are 3" and they call for pumps. We couldn't put pumps down wells because the 8" vault packs aren't done in for a few weeks. While we were doing that we also installed pumps at EW-161-107ft, EW-160-111ft, EW-138-99ft, EW-40R2-95ft, EW-159-65ft, EW-127R2-88ft, EW-52R2-100ft and EW-9R2-106ft. All pumps were put 2ft off the bottoms of the wells. Also liner guys came in and repaired liner around 18" tie in point on the eastside of the landfill. We also abandon old vacuum riser at EW-131 with a 6" buttcap and then hooked up well to new vacuum riser off of the 18" header. After liner repair was made we then backfilled hole around 18" riser. We also installed stands at flares 1 and 2. We then wrapped things up and left for the day.

James A. Tolia 5/15/12
CLIENT REPRESENTATIVE DATE
James A. Tolia CEA
NAME & TITLE

[Signature] 5/15/2012
AEGL SITE SUPERVISOR DATE



American
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DAILY DIARY

DATE: 5/16/2012

Weds.

PROJECT NAME LORAIN COUNTY

PROJECT# 20212114

DRILLING			
LINEAR FEET OF DRILLING		HEADER#	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION#	TRENCH DEPTH
PERFORATED PIPE-DIA.		AIR#	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
		STATION	TRENCH DEPTH
COMPLETION: (WELL NUMBERS)		FORCEMAIN#	PIPE DIA.
			LINEAR FT.
		STATION#	TRENCH DEPTH
			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
GENERAL INFORMATION			
WEATHER CONDITIONS			PIPE DIA.
Sunny			LINEAR FT.
			TRENCH DEPTH
			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
START TIME <u>7:00AM</u>			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
STOP TIME <u>7:00PM</u>		PUMPS	PIPE DIA.
		<u>3</u>	LINEAR FT.
			TRENCH DEPTH

Today we started with our safety meeting and then went up on the hill and finished installing pumps at EW-141R-91ft, EW-146R-100ft and EW-115-106ft. All pumps were set 2ft off bottom of wells. While we were doing that we hauled dirt to the 24" header tie ins and backfilled around valve stems. We then went around and cleaned up all pipe and fittings and took them to the bone yard. We then went down and hard pipe the pump to the sump vault. We also dressed up around sump vault and put gravel around pipe stands at flares 1 and 2. We also put all signs on sump vault and forcemain vaults. We then wrapped things up and left for the day

James A. Todia 5/16/12
CLIENT REPRESENTATIVE DATE
James A. Todia CQA
NAME & TITLE

[Signature] 5/16/2012
AEGL SITE SUPERVISOR DATE



American
Environmental
Group Ltd.

DAILY DIARY

DATE: 5/17/2012

Thurs.

PROJECT NAME LORAIN COUNTY
PROJECT# 20212114

DRILLING			
LINEAR FEET OF DRILLING		HEADER#	PIPE DIA.
LINEAR FEET OF DRILLING-ABANDONMENT			LINEAR FT.
LINEAR FEET OF WELL COMPLETION		STATION#	TRENCH DEPTH
PERFORATED PIPE-DIA.		AIR#	PIPE DIA.
SOLID PIPE -DIA.			LINEAR FT.
		STATION	TRENCH DEPTH
		FORCEMAIN#	PIPE DIA.
COMPLETION: (WELL NUMBERS)			LINEAR FT.
		STATION#	TRENCH DEPTH
			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
GENERAL INFORMATION			
WEATHER CONDITIONS			PIPE DIA.
Sunny			LINEAR FT.
			TRENCH DEPTH
			PIPE DIA.
			LINEAR FT.
			TRENCH DEPTH
START TIME 7:00AM			PIPE DIA.
STOP TIME 5:30PM			LINEAR FT.
	PUMPS 3		TRENCH DEPTH

Today we started with our safety meeting and then started packing up trailer for moving to county wide. While we were doing that we had our walk thru with Chris, Rick and Janet. After we got our punch list we went around litter lugged around a few wells. Chris asked us if we could put a french drain back by CS-7 where the water is coming out of the ground. So we went back and dug a 2ft trench from CS-7 to out fall by CS-7. After trench was dug we put rock on bottom of trench and then put 4"ads pipe in trench then put more rock over top of pipe. We then backfilled trench line. Chris also asked if we would bring down some big rocks from the top of the landfill and put along the road so trucks wouldn't tear the grass. So we brought down several rocks and placed them along the road. We then got the ok to leave from Janet. So we then hooked up truck to trailer and headed down to county wide. When we got to county wide we dropped off trailer and then called it a day.

Chris A. Todia 5/17/12
CLIENT REPRESENTATIVE DATE
Chris A. Todia COA
NAME & TITLE

[Signature] 5/17/2012
AEGL SITE SUPERVISOR DATE

Appendix B: Construction Photographs and Description Logs

(CD Enclosed)

Date	Photo ID	Direction	Description
4/13/2012	100 1079	SE	Drilling EW31R
4/13/2012	100 1082	E	Set up casing EW31R and prepare for installation into well bore
4/13/2012	100 1090	E	EW31R well casing in place with safety bars
4/13/2012	100 1092	NE	EW31R drop No. 4 stone into bore
4/16/2012	100 1097	Ground	Perforated well casing and end cap
4/23/2012	100 1135	NW	Air and force main trench EW122R to EW140R
4/23/2012	100 1137	NW	Air and force main being placed in trench EW122R to EW140R
4/25/2012	100 1166	NW	Uncover for tie in of lateral EW121R to EW121 (original vacuum source)
4/27/2012	100 1192	SE	Installation of "cactus" style configuration for vacuum source EW116R and EW168 (remote well head)
4/28/2012	100 1203	Ground	EW5R2 boot and cap repair
4/30/2012	100 1218	SW	EW87R2 new lateral tie in to original vacuum source EW57R and extension of air and force main to the new well EW87R2
5/1/2012	100 1220	N	Isolation valves for air and force main at road crossing north of EW43R2
5/2/2012	100 1230	NE	Air and force main trench EW40R2 to EW159
5/2/2012	100 1234	S	Air and force main laid in trench EW159 to EW40R2
5/2/2012	100 1239	SW	Installation of CMP for road crossing for 18" header west side leg
5/2/2012	100 1241	N	CMP road crossing for air and dual contained force main at EW146R
5/2/2012	100 1243	N	Tie in for air and dual contained force main EW146R
5/3/2012	100 1248	S	Uncover for 18" west side leg and prepare to install shut off valve
5/4/2012	100 1268	N	18" shut off valve west side leg of 18" header installation
5/4/2012	100 1269	S	18" header east side leg excavate and prepare to lay 18" header in trench
5/4/2012	100 1280	Ground	Vacuum test EW121R for boot and cap repair
5/7/2012	100 1291	E	Air test 18" header west leg
5/7/2012	100 1292	E	Blind flange 18" header on west side leg for air test; was later removed for the tie in
5/12/2012	100 1337	SW	Installation of new 6" lateral for EW133.
5/12/2012	100 1349	E	Pressure test 6" lateral EW133
5/14/2012	100 1361	NE	18" header east side leg pulled slightly west ward in order to obtain 3% grade for tie in to 18" termination riser
5/14/2012	100 1362	E	18" header east side leg "T" installation
5/15/2012	100 1370	E	Vacuum test 18" header east side leg cap repair
5/15/2012	100 1377	E	18" header (east side leg) completion of tie in with the cap repaired

Appendix C: Resumes for CQA Certifying Engineer and Monitors

Richard A. Isaac, P.E.

Experience Summary

Rick Isaac has 34 years of extensive experience managing, performing, and certifying engineering design, permitting, and construction quality assurance (CQA) programs for new land disposal and other solid and hazardous waste management facilities. Mr. Isaac's CQA experience includes landfills in Ohio, Virginia, West Virginia, Pennsylvania, Maryland, Mississippi, and Louisiana for new cell construction, final cover system construction and final landfill closure, and landfill gas collection and control system (GCCS) installations. Mr. Isaac has prepared and certified construction quality assurance plans (CQAPs) for landfills used as the basis for performing field oversight and CQA services. Mr. Isaac has managed and certified the CQA activities on recent projects for Republic in Ohio at the Lorain County II Landfill, Lorain County I Landfill (Closed), Countywide Recycling and Disposal Facility, County Environmental of Wyandot Landfill, County Land Development (CLD) Landfill, and Lewis Landfill (Closed) and Imperial Landfill in Pennsylvania. He has successfully completed and received approval of Construction Certification Reports from the Ohio Environmental Protection Agency (Ohio EPA) and the Pennsylvania Department of Environmental Protection (PADEP) for various types of construction at each of these landfills.

In addition, Mr. Isaac brings to his work extensive experience in managing feasibility studies (FS) and remedial design/remedial action (RD/RA) for Superfund sites under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and state-led remedial sites, as well as managing corrective measures studies (CMS) and implementation of remediation systems for operating facilities under Resource Conservation and Recovery Act (RCRA). He also possesses extensive experience with bid procurement services including preparation of contract documents, technical specifications, and construction drawings for a wide variety of projects including solid and hazardous waste facilities, remediation, and the cleaning and demolition of buildings, both municipal and industrial. He participates in and/or conducts pre-bid and pre-construction meetings, bid review, evaluation, recommendation, and contract award.

Assignment

Certifying Engineer

Education

B.S. Civil Engineering, West Virginia University, Morgantown, 1978

Registration

Professional Engineer in Ohio, Michigan, Pennsylvania, Mississippi, Louisiana, and West Virginia; Virginia (retired status); Colorado (retired status); Wyoming (retired status); and Montana (retired status)

Experience

34 years

Joined Firm

2007

Training

OSHA 29 CFR 1910.120, Health and Safety Training

Relevant Expertise

- *Solid and Hazardous Waste Management*
- *CQA Oversight and Management*
- *CERCLA, RCRA, and Remediation*
- *Site Assessments and Investigations*
- *Regulatory Compliance*
- *Storm Water/Surface Water Management*

Solid and Hazardous Waste Management

Reservoir Liner and Earthwork CQA Services, City of Fremont, Fremont, Ohio

Certifying Engineer. Managed the CQA for the installation of a 96 acre liner system for a raw water reservoir in Fremont, Ohio. The liner system included, in ascending order, Bentomat 200R geosynthetic clay liner (GCL), 40-mil smooth linear low density polyethylene (LLDPE) geomembrane, 10 oz./sy. nonwoven geotextile, and 18-inches of protective soil on the reservoir floor and Bentomat DN GCL, 40-mil textured LLDPE geomembrane, 10 oz./sy. nonwoven geotextile, 12-inches of sand material, 4-inch bedding stone, and 24-inch dumped rock riprap on the reservoir slopes. Provided direction to the field inspectors who were onsite full-time throughout the duration of the liner installation activities. Perform review and approval of the quality control (QC) testing for the liner materials and oversight for the quality assurance (QA) sample collection and testing of the liner materials. The CQA inspectors performed field density/moisture testing for the liner system subgrade and replacement of the reservoir dam to facilitate the liner anchor trench. Prepared and served as the "Engineer of Record" for the Certification Report submitted to the Ohio Department of Natural Resources (ODNR) to document the reservoir liner installation.

Lorain County II Landfill Gas CQA Services, Republic Services, Inc., Oberlin, Ohio

Certifying Engineer. Managed the CQA for the installation of a 24-inch diameter high density polyethylene (HDPE) header pipeline to connect onsite enclosed flares to a gas plant at a landfill in Oberlin, Ohio. Provided direction to

the field inspectors who were onsite full-time throughout the duration of the pipeline installation activities. The header installation included the 24-inch diameter HDPE pipeline with a 3-inch by 6-inch diameter HDPE force main, 3-inch diameter HDPE airline, and 3-inch diameter HDPE communications conduit. Seven 48-inch diameter HDPE condensate pump station were installed along the header. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the header line installation.

Lorain County II Landfill Gas Design and CQA Services, Republic Services, Inc., Oberlin, Ohio

Certifying Engineer. Managed the CQA for the expansion of the landfill gas management system at a landfill in Oberlin, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the expansion implementation activities. The expansion activities included installation of an enclosed flare station, condensate sumps, 24-inch and 18-inch diameter HDPE header pipelines, laterals to new and re-drilled gas extraction wells, condensate and airlines, and road crossings. Managed the preparation and provided QA review of the construction drawings for the landfill gas management system expansion. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the landfill gas system expansion installation.

Lorain County I Landfill (Closed) Gas CQA Services, Allied Waste Industries, Inc., Oberlin, Ohio

Certifying Engineer. Managed the CQA for the expansion of the landfill gas management system at a closed landfill in Oberlin, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the expansion implementation activities. The expansion activities included installation of 8-inch diameter HDPE header pipelines, laterals to new and re-drilled gas extraction wells, installation of Landtec combination wellheads, leachate system force main, condensate and airlines, and road crossings. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the landfill gas system expansion installation.

County Land Development Landfill Closure CQA Services, Republic Services, Inc., Salem, Ohio

Project Manager/Certifying Engineer. Managed the CQA for the implementation of final closure activities at a sanitary/construction demolition debris (C&DD) landfill in Salem, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the final closure implementation including final cover construction, landfill gas management system expansion, and storm water controls. Managed and assisted in the preparation, performed quality assurance (QA) review, and served as the "Engineer of Record" for the Final Closure Certification Report submitted to the Ohio EPA to document the implementation of the final landfill closure construction.

County Environmental of Wyandot Landfill Gas Design and CQA Services, Republic Services, Inc., Carey, Ohio

Certifying Engineer. Managed the CQA for the expansion of the landfill gas management system at a landfill in Carey, Ohio. Provided direction to the field inspectors who were onsite full-time throughout the duration of the expansion implementation activities. The expansion activities included installation of an enclosed flare station, condensate sumps, 24-inch diameter high-density polyethylene (HDPE) header pipeline, laterals to new and re-drilled gas extraction wells, condensate and airlines, and road crossings. Managed the preparation and provided QA review of the construction drawings for the landfill gas management system expansion. Assisted in the preparation, performed QA review, and served as the "Engineer of Record" for the Certification Report submitted to the Ohio EPA to document the landfill gas system expansion installation.

Cherokee Run Landfill Gas Design Services, Republic Services, Inc., Bellefontaine, Ohio

Certifying Engineer. Managed the design of the expansion of the landfill gas management system at a landfill in Bellefontaine, Ohio. Provided direction to the design engineers who prepared the construction drawings and details for use by the installer to construct the landfill gas management system expansion. The expansion activities included installation of a condensate sump, 18-inch diameter HDPE header pipeline, laterals to new and re-drilled gas extraction wells, and condensate and airlines. Provided QA review of the construction drawings for the landfill gas management system expansion.

Noble Road Landfill Vertical Expansion Perimeter Berm Design, Republic Services, Inc., Shiloh, Ohio
Project Manager/Certifying Engineer. Managed the design of a perimeter berm used to expand the available air space at a landfill in Shiloh, Ohio. Provided direction and assisted staff engineers in the preparation of “construction-ready” design drawings for use by contractors in preparation of bids. The drawings included grading plans, construction sequence plans, leachate management system plans, storm water management plans, and details. Prepared the contract documents and technical specifications for use by contractors in preparing bids. Participated in the bid procurement, bid review, and contractor selection for construction of the perimeter berm. Performed QA review, and served as the “Engineer of Record” for the berm design.

Hazardous Waste Landfill Remediation, Laufen International, Inc., East Sparta, Ohio
Project Manager/Certifying Engineer. As part of a RCRA Corrective Action through a Consent Decree with the U.S. EPA Region 5, prepared an Interim Measures Work Plan for the remediation of a hazardous waste landfill at a facility in eastern Ohio. The Interim Measures included landfill cap enhancements, leachate management system modifications, construction of a flood protection levee, modification of the perimeter surface drainage system, and modification of the settlement monitoring program. Managed and prepared the contract documents, technical specifications, and drawings to procure a geosynthetics installer for the synthetic components of the new final cover system. Managed the implementation and CQA for the construction of the Interim Measures including construction of a new final cover system to encapsulate the existing landfill and the geotechnical program and construction of the flood protection levee. Prepared the construction certification report for submittal to the U.S. EPA following completion of the remediation activities.

Design, Permitting, and Construction of a Solid Waste Transfer Station, Rumpke Waste, Inc., Ironton, Ohio

Project Manager/Certifying Engineer. Managed the design, permitting, and construction of a solid waste transfer station for a major solid waste company in southeast Ohio. The facility permit was through the Ohio EPA Southeast District Office in accordance with the Ohio Administrative Code rules and regulations pertaining to transfer stations. Coordinated and managed the transfer facility design by assembling a team of design professionals including site work, geotechnical and structural, environmental management systems, architectural, and mechanical, electrical, and plumbing including both wet and dry fire suppression systems. Prepared and obtained the required building permits through the Ohio Department of Commerce, Bureau of Building Code Compliance office. Managed the preparation of the contract documents, technical specifications, and construction drawings including QA/QC of the final bid documents and was responsible for the bid procurement including pre-bid meeting, bid evaluation, recommendation, and contract award. Performed limited CQA during the facility construction including project progress meetings, contractor requests for information, pay application review and approval, and change order requests.

Design and Permitting for a Type I Restricted Waste Landfill, Mittal Steel USA, Burns Harbor, Indiana

Project Manager/Certifying Engineer. Managed the design and permit preparation for a Type I Restricted Waste Landfill for disposal of secondary wastewater treatment plant sludge at a major steel manufacturing facility in Indiana. Performed the leachate management system evaluation including landfill floor configuration, HELP Model to determine leachate volumes, and design calculations for pipe sizes, perforation openings, sumps, and pumps. Assisted with the preparation of the Special Exception to the Zoning Application required for the facility.

C&DD Landfill Closure Certification, Stambaugh Properties Ravenna, Ohio

Project Manager/Certifying Engineer. Managed the closure and closure certification of a C&DD landfill in Ravenna, Ohio. Performed field oversight services including soil sample collection for geotechnical analysis. Prepared the Closure Certification Report and served as the Engineer-of-Record. Submitted the Closure Certification Report to the Portage County Health Department.

Hazardous Waste Facility Post – Closure Plan, ESAB Welding & Cutting Ashtabula, Ohio

Design Engineer. Prepared and submitted to the Ohio EPA a hazardous waste facility post-closure plan for former lime ponds and associated impoundments at a welding wire manufacturer in Northeast Ohio. Post-

closure plan included discussions on site security, inspection plan, monitoring plan, maintenance plan, and financial assurance.

Design and Permitting of a Solid Waste Transfer Station, Waste Management, Inc., Wooster, Ohio
Design Engineer. Managed the design and permitting of a solid waste transfer station for a major solid waste company in central Ohio. The design included grading and storm water control plans, vehicle sequencing and staging plans, and detailed design of the transfer building structure and operating pad.

Design and Permitting for the Vertical Expansion of a Sanitary Landfill, Mid-American Waste Systems, Gary, Indiana

Design Engineer. Managed the design and permitting for the vertical expansion of an existing sanitary landfill. Project included the design of leachate management, gas management, grading, closure and post-closure, and erosion and sediment control plans. Coordinated site remediation activities, including a toe drain collection and conveyance system and a groundwater cut-off slurry wall.

Design and Permitting for the Upgrade and Compliance of a Large Sanitary Landfill, City of Virginia Beach, Virginia

Project Manager/Design Engineer. Managed the design and permitting for upgrade and compliance of a large existing sanitary landfill located in the Tidewater region of Virginia with new Subtitle D regulations. The design included plans for grading, leachate collection system and groundwater underdrain, closure and post-closure, and storm water management. Wetlands associated with expansion were permitted through the US Army Corps of Engineers Nationwide 26 Permit process.

Design and Closure of an On-Site Waste Disposal Site at an Aluminum-Processing Facility, Alcoa Cleveland Works, Cleveland, Ohio

Design Engineer. Managed the design and closure of an on-site waste disposal site at an aluminum processing facility. Closure plan included grading, storm water management, gas management, post-closure care, and land-use plans.

Design and Permitting for Closure of Three Disposal Units at a Coke Facility, Wheeling-Pittsburgh Steel, Follansbee, West Virginia

Design Engineer. Managed the design and permitting for the closure of three disposal units located at a coke facility along the Ohio River. Closure plans included grading, storm water management, gas management, and post-closure care and land use plans. Designed the closure plans and prepared permit applications as "fast track" projects in order to meet imposed regulatory deadlines.

Closure of a Hazardous Ash Disposal Impoundment at a Paint Pigment Facility, Cytec Industries, Inc., Washington, West Virginia

Design Engineer. Managed the closure of a hazardous ash disposal impoundment at a paint pigment facility located along the Ohio River in West Virginia. The closure included final grading plan; final cover system configuration, including geogrids to allow construction equipment access to the ash material during the construction phase; and surface water management.

Design and Preparation of Permit Application Drawings for the Vertical Expansion of a Landfill, City of Barnstable, Massachusetts

Design Engineer. Managed the design and preparation of permit application drawings for the vertical expansion of an existing landfill in Massachusetts. The project included the design of grading plans, disposal cell phase and sequence plans, storm water management, leachate collection and treatment systems, landfill gas management system, liner and fill cap system configurations, and closure and post-closure care plans. The existing site is located on Cape Cod within a Zone II Aquifer system, which required specialized engineering designs to ensure zone environmental protection of the groundwater systems at the site.

Preparation of a Waste Alternatives Study for a Large Paper Mill Facility, WESTVACO, Luke, Maryland

Design Engineer. Managed the preparation of a Waste Alternatives Study for a large paper mill facility located in western Maryland. The study compared the development, design, permit preparation, and construction of two potential landfill sites: one located in West Virginia and the second located in Maryland. The study

evaluated operations, design, permitting, material hauling to each site, and construction of each potential site for a study period of 20 years, with present worth analysis performed to determine capital required to finance the project. Each potential site was also compared to contract waste collection, transportation, and disposal by an independent waste contractor.

Design and Permitting for a Construction and Demolition Debris Landfill, Warren Recycling, Inc., Warren, Ohio

Project Manager/Design Engineer. Managed the design and permitting for a C&DD landfill located in Warren, Ohio. The project included License Application forms, grading plans, leachate management plans, storm water management plans, and fill sequence plans. Applied for and received a variance from groundwater monitoring from the City Health Department.

Design and Permitting for a Construction and Demolition Debris Landfill, Iron Valley, Chesapeake, Lawrence County, Ohio

Project Manager/Design Engineer. Managed the design and permitting for a C&DD landfill located in Lawrence County, Ohio. The project included License Application forms, grading plans, leachate management plans, storm water management plans, and fill sequence plans.

Design and Permitting of the Closure for a Residual Carbon Waste Disposal Facility, The Stackpole Corporation, St. Marys, Pennsylvania

Design Engineer. Managed the design and permitting of the closure for a residual carbon waste disposal facility in Pennsylvania. Design included a combination RCRA-style final cover system and standard State of Pennsylvania cover system.

CERCLA, RCRA, and Remediation

RD/RA and Implementation of Closure for a Site in Elyria, Ohio

Certifying Engineer/Designer. Prepared the bid documents, technical specifications, and construction drawings for the construction of a steep slope (2:1) soil buttress from the river plain to the crest and installation of a 1976 Ohio EPA-compliant final cover system at a former landfill site. Soil buttress had specific strength requirements for the soil related to slope stability issues and the final cover system incorporated low permeability soil ($k \leq 1 \times 10^{-5}$ cm/sec). The steep slope incorporated GreenArmour™ 7020 turf reinforcement mat with Flexterra® HP-FGM™ flexible growth medium with a steep slope seed mix developed for the site to control erosion. Bid documents and technical specifications were prepared to following the CSI 2004 format. Participated in pre-bid meetings, bid evaluation, and contractor recommendation and contract award. Served as the Engineer-of Record for the design and assisted with the field CQA program including contractor oversight, project progress meetings, and contractor requests for information.

Bid Documents, Technical Specifications and Construction Drawings for a Hydraulic Barrier Wall and Groundwater Extraction and Treatment System for a Site in Holland, Michigan

Certifying Engineer/Designer. Prepared the bid documents, technical specifications, and construction drawings for the installation of a hydraulic barrier wall and groundwater extraction and treatment system at a former manufacturing site. The hydraulic barrier wall consists of a soil-bentonite (SB) slurry wall and blast furnace slag- cement-bentonite (BFSCB) slurry wall. Groundwater extraction and treatment system consists of five extraction wells, water filtration treatment, and deep well injection under high pressure. Bid documents and technical specification were prepared to following the CSI 2004 format. Participated in pre-bid meetings, bid evaluation, and contractor recommendation and contract award. Served as the Engineer-of Record for the design and assisted with the field CQA program including contractor oversight, project progress meetings, and contractor requests for information.

Preparation of RD/RA for Former Tar and Chemical Facility, Reilly Industries, Inc., Dover, Ohio

Project Manager/Design Engineer. Managed the preparation of the RD/RA for a former tar and chemical facility located in Dover, Ohio. The remedial design included excavation of on-site soils and sediments contaminated with polycyclic aromatic hydrocarbons (PAHs), and benzene, toluene, ethylbenzene, and xylene (BTEX) for either off-site treatment by thermal destruction and disposal or placement within an on-site building foundation closed by the construction of an Ohio EPA- compliant solid waste final cover system; construction of

a groundwater recovery trench with recovered groundwater discharged to the local publically owned treatment works (POTW); and placement of soil cover.

Hydrogeologic Site Investigation and Preparation of a Focused FS for a Lagoon at a Major Coke-Producing Facility, US Steel, Clairton, Pennsylvania

Design Engineer. Managed the performance of a hydrogeologic site investigation and preparation of a "focused" FS for a lagoon contaminated with polynuclear aromatic hydrocarbons, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) at a major coke- producing facility. Performed the FS to adhere to the requirements of the Pennsylvania Department of Environmental Protection (PADEP). Alternatives evaluated included augmenting the existing groundwater pump and treat with lagoon sediment solidification/stabilization and construction of a PADEP-compliant final cover system.

Site Investigation, Permitting, Remedial Design, and Remediation Implementation at a Creosote Wood Treating Facility, Southern Wood Piedmont, Benson, North Carolina

Design Engineer. Managed the site investigation, permitting, remedial design, and remediation implementation at a creosote wood treating facility in North Carolina. Surface impoundments used for disposal of creosote and surface water were remediated by stabilization/solidification of the resulting sludge and covering with a solid-waste-style final cover system.

Preparation of a Feasibility Study for a Large Primary Aluminum Facility, Ormet, Hannibal, Ohio

Design Engineer. Managed the preparation of a FS for a large primary aluminum facility located along the Ohio River in the State of Ohio. Five impoundments, a former potash disposal area, a former spent carbon disposal area, a former construction material and demolition debris area, and the backwash area required remediation for fluoride, cyanide, and VOCs. The final proposed remedy included construction of RCRA-style final cover systems; soil washing/soil flushing aided by a Ranney well, which influenced the flow of groundwater; and river sediment dredging.

Preparation of a "Focused" Corrective Measures Study for a Hazardous Measures Recycling Facility, Safety-Kleen, Hebron, Ohio

Design Engineer. Managed the preparation of a "focused" CMS for a hazardous materials recycling facility in the State of Ohio. Implemented interim corrective measures including groundwater recovery wells and low-profile air stripper with a groundwater cut-off wall. The CMS evaluated alternatives for remediating VOCs that had entered the soils and groundwater as a result of a fire at the facility.

Design of an Ultraviolet Peroxidation Groundwater Treatment System, Honeywell, Annapolis, Maryland

Design Engineer. Managed the design of an ultraviolet (UV) peroxidation groundwater treatment system. The design included the UV system and associated groundwater recovery system for the remediation of VOCs, and SVOCs. Prepared contract documents, technical specifications, and construction drawings for use in the contractor bid procurement process.

Paint Sludge and Sediment Remediation in Lake Michigan, Flanders Industries, Inc., Menominee, Michigan

Design Engineer. Managed the design and preparation of contract documents, technical specifications, and construction drawings for paint sludge and sediment remediation in Lake Michigan. Project included the design and construction of an impermeable dike built in Lake Michigan to isolate the contaminated sediments, sediment removal plans, sediment staging and sequencing plans, sediment testing plans, and site restoration plans.

Design and Construction of a Recovery and Treatment System at a Carbon Graphitizing Facility, The Stackpole Corporation, St. Marys, Pennsylvania

Provided QA/QC and senior oversight for the design and construction of a recovery and treatment system at a carbon graphitizing facility in Pennsylvania. The system included 14 groundwater recovery wells and soil vapor extraction for chlorinated organics.

General Engineering

Implementation of Design/Build Services for Building Demolition, TRW, Inc., Cleveland, Ohio

Lead Engineer Responsible for providing direction and oversight to the onsite CQA inspector throughout the performance of the building demolition for a former automobile parts manufacturing facility. Site activities included asbestos abatement, multi-story building complex demolition consisting of steel and wood frame, concrete, block and brick buildings including removal, cleaning, and off-site disposal of tanks and pipelines containing residual materials, removal, cleaning, and off-site disposal of PCB-containing transformers, and segregation and recycling of steel, concrete, and brick materials. Provided interpretation of project specifications and conducted bi-monthly project progress meetings.

Design, Technical Specifications and Construction Drawings for Filter Press installation, Whirlpool Corporation, Marion, Ohio

Project Manager for the design and preparation of technical specifications and construction drawings for the installation of a filter press in an existing water treatment building. Prepared the civil component of the specifications and drawings and managed the preparation of the structural, mechanical, electric, and plumbing (MEP) components of the project. Installed the filter press in the existing filter press building by retrofitting the inside of the building and the existing structural components and MEP. Installation of the filter press allowed the client to realize a two-fold increase in filtering the effluent from the onsite wastewater treatment plant (WWTP).

Technical Specifications and Construction Drawings for Building Demolition, City of Dayton, Office of Economic Development, Dayton, Ohio

Design Engineer. Prepared the contract documents, bidding documents, technical specifications, and construction drawings for the demolition of a 845,000 square foot, multi-story building complex consisting of steel frame, concrete, block and brick buildings including removal and off-site disposal of tanks and pipelines containing residual materials. Contract and bidding documents were prepared to adhere to client's (municipal) preferred formats. Participated in pre-bid and pre-demolition meetings, bid evaluation, and contractor recommendation and contract award. Managed the CQA program including contractor oversight, project progress meetings, and contractor requests for information.

Technical Specifications and Construction Drawings for Building Demolition, Columbus Recreation and Parks, Columbus, Ohio

Project Manager/Design Engineer. Prepared the contract documents, bidding documents, technical specifications, and construction drawings for the demolition of a 25,500 square foot, three-story, steel frame, concrete, block and brick building including removal and off-site disposal of an underground storage tank (UST). Contract and bidding documents were prepared to adhere to client's (municipal) preferred formats. Participated in pre-bid and pre-demolition meetings, bid evaluation, and contractor recommendation and contract award. Project included field survey and verification of existing utilities associated with the building and preparation of a site grading plan following removal of the building debris from the site.

Cleaning, Asbestos Abatement, and Demolition of Aboveground Storage Tanks, Buildings, Process Equipment, and Pipelines at a Large Coal Tar Refining Facility, Reilly Industries, Inc., Cleveland, Ohio

Project Manager/Design Engineer. Managed the cleaning, asbestos abatement, and demolition of aboveground storage tanks (500 to 1,000,000 gallons) and pipelines and demolition of facility buildings and process equipment at a large coal tar refining facility under the Ohio EPA Cessation of Regulated Operations (CRO) Program. Products produced at the site included coal tar and coal tar distillates, creosote, naphthalene, and oils. Directly prepared technical specifications and construction drawings for use in bid procurement, conducted pre-bid and pre-demolition meetings, bid review and evaluation and assisted client with contract award. Managed the field oversight services throughout performance of the field activities.

Site Assessments and Investigations

Preparation of Phase I Environmental Site Assessment, City of Steubenville, City Engineer, Steubenville, Ohio

Project Manager. Performed the Phase I Environmental Site Assessment (ESA) in accordance with ASTM E1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The Phase I ESA included environmental database searches, interviews with past property owners, limited title searches, site reconnaissance, agency information reviews, and report preparation.

Preliminary Phase II Site Screening, Whittier Peninsula Properties, Columbus Recreation and Parks, Columbus, Ohio

Project Manager. The purpose of the site screening was to review historical information and data related to environmental issues and concerns associated with the Peninsula properties, develop a site ranking system, and develop preliminary recommendations and costs for performing Phase II site investigation activities to identify potential impacts to the soils and groundwater at the Whittier Peninsula.

Phase II Environmental Site Investigation, Whittier Peninsula Properties, Columbus Recreation and Parks, Columbus, Ohio

Project Manager. The Phase II ESI included field work, laboratory analysis, and reporting writing in accordance with the Ohio EPA Voluntary Action Program (VAP) rules and regulations. Field work included collection of soil samples using the Geoprobe® Direct-Push Technology and installation and sampling of groundwater monitoring wells. Prepared the report narrative text, tables, and drawings.

Preparation of Phase I Environmental Site Assessment, City of Columbus, Street Design Department, Columbus, Ohio

Managed and provided QA/QC for a Phase I ESA of Short Street in Columbus, Ohio. Performed the Phase I ESA for the City of Columbus Street Design Department as part of the street-widening program. Used ASTM E1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process in the performance and preparation of the Phase I ESA report.

Preparation of Phase II Environmental Site Investigation, City of Columbus, Street Design Department, Columbus, Ohio

Managed and provided QA/QC for a site investigation performed at Reynolds Avenue in the City of Columbus, Ohio. Performed work for the City of Columbus Street Design Department as part of the street-widening program. The site investigation included the performance of Geoprobe holes to collect soil samples for laboratory analysis prior to initiation of construction activities. Prepared a Phase II Environmental Site Investigation Report presenting the results of the investigation and conclusions that no subsurface contamination was present within the construction limits.

Preparation of Phase II Environmental Site Investigation, City of Columbus, Street Design Department, Columbus, Ohio

Managed and provided QA/QC for a site investigation at an intersection along Hudson Street in the City of Columbus, Ohio. The intersection was being modified to include turning lanes and Geoprobe holes were performed to collect subsurface soil samples. Performed work for the City of Columbus Street Design Department as part of the street-widening program.

Phase II Environmental Site Investigation and Remediation, City of Columbus, Street Design Department, Columbus, Ohio

Managed and performed QA/QC for a site investigation and remediation of a former dry-ice manufacturing facility along McKinley Avenue in Columbus, Ohio. The City of Columbus Street Design Department was widening McKinley Avenue. Used Geoprobe technology to collect subsurface soil samples for purposes of determining the presence of contamination within the construction limits. A former dry ice manufacturing facility, located along the revised road centerline, required remediation of an existing concrete vault prior to demolition to allow construction to proceed. Cleaned the vault by power washing and vacuuming with off-site disposal of the resulting sludge and rinsate waters.

Compliance

Spill Prevention, Control, and Countermeasure Plans – Medical Center, The Ohio State University, Columbus, Ohio

Prepared the Spill Prevention, Control, and Countermeasure (SPCC) Plans for the OSU Main Campus Medical Center and the Hospital East Complex in accordance with the requirements of 40 CFR 112 for The Ohio State University (OSU) in Columbus, Ohio. Reviewed facility specific oil storage areas, performed facility inspections, and prepared the SPCC Plans using the “poster-format” with cross-references and supporting documents.

Spill Prevention, Control, and Countermeasure Plan, The Ohio State University, Columbus, Ohio

Performed the “five-year” review and evaluation of existing Spill Prevention, Control, and Countermeasure (SPCC) Plans for re-certification in accordance with the requirements of 40 CFR 112 for The Ohio State University (OSU) in Columbus, Ohio. Reviewed, revised, and re-certified the Master SPCC Plan for the OSU main campus. Reviewed facility specific SPCC Plans, performed facility inspections, and revised the SPCC Plans using the “poster-format” with cross-references and supporting documents for four facilities within the OSU main campus: Center for Automotive Research, McCracken Power Plant, Transportation and Parking Services, and the Scarlet and Gray Golf Course. Also reviewed the SPCC Plan for the Wooster Campus of OSU in Wooster, Ohio, performed a site inspection, and prepared and certified the “poster-format” with cross-references and supporting documents.

Integrated Contingency Plan (ICP), The Ohio State University, Don Scott Field, Columbus, Ohio

Prepared an ICP for The Ohio State University Airport, Don Scott Field. Combined the existing Storm Water Pollution Prevention Plan (SWP3) and the existing SPCC Plan into one document that also included a new emergency response plan for the airport. The ICP addressed the onsite Avgas and Jet A aviation fuel storage facility, mobile aircraft refuelers, and two maintenance facilities resident on the airport property. Prepared the ICP in accordance with the National Interagency Incident Management System (NIIMS) Incident Command System (ICS) that is a nationally recognized system that provides a commonly understood framework that allows for effective interaction among response personnel, thus facilitating its ease of use during an emergency situation.

Spill Prevention, Control, and Countermeasure Plan, Denison Hydraulics, Marysville, Ohio

Prepared SPCC Plan to bring the Denison Hydraulics facility in compliance with the requirements of 40 CFR 112 for a specialty hydraulic equipment manufacturing facility in Marysville, Ohio. Prepared the SPCC Plan text, drawings, and appendices based on review of historic records, conversations with facility personnel, and site inspections. Served as the “Engineer-of-Record” for certification of the SPCC Plan.

Spill Prevention, Control, and Countermeasure Plan, Koneta Rubber, Wapakoneta, Ohio

Prepared SPCC Plans to bring two facilities in compliance with the requirements of 40 CFR 112 for a specialty rubber manufacturing facility in Wapakoneta, Ohio. Prepared the SPCC Plan text, drawings, and appendices based on review of historic records, conversations with facility personnel, and site inspections. Served as the “Engineer-of-Record” for certification of the SPCC Plans.

Notice of Intent and Storm Water Pollution Prevention Plan, United Precast, Mount Vernon, Ohio

Prepared and submitted the Notice of Intent (NOI) for a concrete manufacturing facility in central Ohio to provide coverage of the facility under the General Permit Authorization to discharge Storm Water Associated with Industrial Activity (General Permit No. OHR000003) Under the National Pollutant Discharge Elimination System (NPDES) as administered by the Ohio EPA. As a condition of the General Permit, prepared the SWP3 for the facility including a site walk over, material inventory, preliminary development of “Best Management Practices (BMPs)”, certification of non-storm water discharges, and recommendations for implementing BMPs to minimize contact with storm water.

Spill Prevention, Control, and Countermeasure Plan, Campbell Soup Company, Napoleon, Ohio

Reviewed and revised existing SPCC Plan for re-certification in accordance with the requirements of 40 CFR 112 for a food manufacturing facility in Napoleon, Ohio. Prepared revisions to the SPCC Plan based on the site inspection and updated the existing plan to adhere to the revised SPCC Plan Rules and Regulations effective as of August 16, 2002.

Spill Prevention, Control, and Countermeasure Plan, Lumi-Lite Candle Factory, Norwich, Ohio

Reviewed and revised existing SPCC Plan for re-certification in accordance with the requirements of 40 CFR 112 for a candle manufacturing facility in Norwich, Ohio. Prepared revisions to the SPCC Plan based on the site inspection and updated the existing plan to adhere to the revised SPCC Plan Rules and Regulations effective as of August 16, 2002.

Spill Prevention, Control, and Countermeasure Plan, Confidential Client, Bucyrus, Ohio

Reviewed and revised existing SPCC Plan for re-certification in accordance with the requirements of 40 CFR 112 for a rubber and plastic hose manufacturing facility in Bucyrus, Ohio. Prepared revisions to the SPCC Plan based on the site inspection and updated the existing plan to adhere to the revised SPCC Plan Rules and Regulations effective as of August 16, 2002.

Conditional No Exposure Exclusion for Industrial Activity, Delphi Automotive Systems, Warren, Ohio

Performed site inspections and developed inspection forms for five automotive parts manufacturing facilities to determine compliance with the NPDES, Storm Water Phase II Final Rule – Conditional No Exposure Exclusion for Industrial Activity as administered by the Ohio EPA. Used the initial facility inspections to develop forms that the client could use to perform subsequent annual compliance inspections. Provided a summary of issues to be addressed prior to submitting Conditional No Exposure Exclusion requests to the Ohio EPA.

Spill Prevention, Control, and Countermeasures Plan Re-Certification, Delphi Automotive Systems, Warren, Ohio

Perform review, prepared revisions, and re-certified SPCC Plans in accordance with the requirements of 40 CFR 112 for a major automotive parts manufacturer in Northeast Ohio. Performed site inspections for two facilities, updated the SPCC Plans, and signed as the “Engineer of Record”.

Storm Water Pollution Prevention Plans, Delphi Automotive Systems, Warren, Ohio

Performed site inspections, review of existing plans, and prepared required revisions of SWP3s for a major automotive parts manufacturer in Northeast Ohio. Reviewed and revised the SWP3s in accordance with the facilities General Permit Authorization to Discharge Storm Water Associated with Industrial Activity under the NPDES.

Aboveground Tank Compatibility Certification, Yenkin-Majestic Paint Corporation, Columbus, Ohio

Certified the compatibility of an aboveground storage tank (AST) for use in storing waste solvents in accordance with Ohio Administrative Code (OAC) Rules and Regulations, Chapter 3745-66-92. Certification included inspection of the AST including overflow and automatic shut-off controls, preparation of the certification report and submittal to the Ohio EPA.

Storm Water/Surface Water Management

Design and Implementation of a “Class A” Trout Stream, Cerro Metal Products, Company, Bellefonte, Pennsylvania

Managed the design and implementation of a “Class A” trout stream in central Pennsylvania. Lead, copper, zinc, and PCBs contaminated the stream banks and sediment. Modeled 20+ square mile drainage area utilizing SEDCAD 4 software for the design of riprap/gabion baskets to stabilize the stream banks, following excavation and off-site removal of the contaminated soils and sediments. Prepared contract documents, technical specifications, and construction drawings. Completed the project on a “fast track” schedule due to strict regulatory deadlines.

Evaluation of Sedimentation Basin at a Sanitary Landfill, Private Landfill in Minnesota

Prepared the evaluation of an existing sedimentation basin at a sanitary landfill utilizing SEDCAD+ computer software. Modeled the watershed for the basin and added 1000 GPM of inflow from a groundwater recovery/treatment system. Treated the basin as an infiltration structure, which saved the client \$200,000 by not having to construct a second basin to handle water from the groundwater recovery/treatment system.

Abandoned Mine Lands and Mining

Acid Mine Drainage, Investigation and Remedial Design, Meigs County, Ohio, Ohio Department of Natural Resources, Columbus, Ohio

Managed the investigation and remedial design for acid mine drainage (AMD) from old underground mine openings in Meigs County, Ohio. Basements of houses located within 30- to 50-feet of the toe of the slope were flooding during rainfall events due to saturation of the soils caused by AMD from the mine openings. Resealed the openings and employed an underdrain system to drain the back yards of the houses and former mine openings. Designed the underdrain system and constructed taking into account the proximity of the toe of the slope and the need to protect the integrity of the slope by preventing slope failure. Technical specifications and drawings were prepared in accordance with the Ohio Department of Natural Resources (ODNR) protocols.

Reclamation and Surface Erosion Remediation, Gallia County, Ohio, Ohio Department of Natural Resources, Columbus, Ohio

Managed the reclamation and surface erosion remediation at an abandoned mine land site in Gallia County, Ohio. The reclamation design involved the regrading of the site, including highwall and slope reduction to minimize future potential surface erosion problems. Developed technical specifications, prepared in accordance with the ODNR protocols, grading plans, and surface water control plans, in a format suitable for contractors to perform the reclamation work.

Mine Reclamation and Surface Erosion Remediation, Gallia County, Ohio, Ohio Department of Natural Resources, Columbus, Ohio

Managed the reclamation and surface erosion remediation at an abandoned mine land site in Gallia County, Ohio. The reclamation design involved the regrading of the site, including highwall and slope reduction to minimize future potential surface erosion problems. The grading plans were required to incorporate access to an active natural gas well located on the site. Developed topsoil borrow area plans (from adjacent undisturbed properties), including sampling plans, volume estimates, grading plans, and surface water control plans. Developed technical specifications, prepared in accordance with the ODNR protocols, grading plans, and surface water control plans, in a format suitable for contractors to perform the reclamation work.

Reclamation Design for Control of Acid Mine Drainage, Peabody Coal Company, St. Louis, Missouri

Prepared the reclamation design for control of AMD from an old abandoned auger mining pit in Missouri. AMD from the auger pit was flowing into the Clairton River and causing discoloration problems. The reclamation design included the construction of a sedimentation basin at the mouth of the valley leading from the old auger pit and prior to entering the river. Sedimentation basin outfall was a corrugated pipe down the slope to the river to minimize potential surface erosion attributed to the outfall.

Mine Plans and Reclamation Plans for Two Large Coal Mines, Powder River Coal Company, Bill, Wyoming

Prepared mine plans and reclamation plans for two large coal mines in Wyoming (6,000,000 tons/year and 8,000,000 tons/year). Plans included sequencing of strip pits, overburden handling, backfill, and grading plans. Storm water management included design of sedimentation basins, diversion ditches, containment berms, and ditches.

Permit Revisions to an Existing Mine Plan, Powder River Coal Company, Bill, Wyoming

Managed the preparation of permit revisions to an existing mine plan to include the construction of a concentric loop track, silo, slot storage, and conveyor system for increased coal handling, storage, and loading capacity. Following approval of the permit revision, managed the preparation of technical specifications and construction drawings for the required facility upgrades, the bidding and contractor procurement activities, and construction oversight activities throughout the construction of the project.

Underdrain System to Control Groundwater Flow at a Mine in the Rocky Mountains, Peabody Coal Company, Denver, Colorado

Designed an underdrain system to control groundwater flow beneath backfilled overburden at a mine in the Rocky Mountains. The underdrain allowed mining of the coal seam from the bottom of the mountain to the top,

instead of contour mining, which increased the amount of recoverable coal. Used the slope stability program REAME developed by the University of Kentucky to aid in the design and backfill placement of underdrain materials and overburden to create a stable backfill as part of the reclamation.

Major Channel Relocation/Remediation, Powder River Coal Company, Bill, Wyoming

Participated in the design, material handling, stockpiling, and backfilling of a major channel relocation/remediation. During the early stages of opening a new mine, relocated a major creek to allow for maximum recovery of the coal seam. As the creek was being stripped, selectively handled and stockpiled the material comprising the creek, i.e., sands, gravels, etc., for reconstruction during the reclamation process for this area. Following coal removal, reconstructed the stream in its former location, with each lithologic unit replaced to recreate the stream before mining events took place.

Publications

"Construction and Demolition Debris Rules in Ohio," Concrete Connection, Ohio Ready Mixed Concrete Association (ORMCA), November 1998

"Simplifying Environmental Planning Requirements," FOUNDRY Management & Technology, pp. 20-23, April 1999.

Janet Todia

Experience Summary

Janet Todia recently joined Brown and Caldwell. Ms. Todia brings 12 years of experience in landfill operation and maintenance.

Assignment

Project Manager

Experience

12 years

Joined Firm

2010

Relevant Expertise

- Solid Waste Management
- Landfill Gas Systems
- Air Compliance

Landfill Operation and Maintenance Experience

Cuyahoga Regional Sanitary Landfill, Solon, Ohio

Project Manager for landfill gas services to supply a 3.8 megawatt power plant on site and a 72 mmbtu boiler system to Nestle USA. Managed coordination of field operations with pipeline and compression skid construction activities for the start up of the Nestle Gas to Energy Project.

Epperson Waste Disposal, Republic Services, Williamstown, Kentucky

Supervisor for well field technicians. Aided in the installation of pneumatic pumps for well dewatering purposes. Responsible for environmental compliance reporting.

Hazel Road Landfill, Akron, Ohio

Project Manager for landfill gas field services. Assisted field technicians in trouble shooting potential landfill gas migration issues and pneumatic pump installation.

Hoffman Road Landfill, City of Toledo, Toledo, Ohio

Project Manager for landfill gas field services. Managed environmental compliance and reporting, assisted site technicians in small-scale construction repairs, installation of pneumatic pumps, potential site migration issues, and routine well field tuning. Responsible for routine and non-routine construction budgets.

Lake County RDF, Waste Management, Chesterland, Ohio

Project Manager for landfill gas field services. Managed small-scale construction repairs, submitted proposals for small-scale construction projects, and coordinated well field compliance with Environmental Specialists, Inc.

Oakland Heights Development, Allied Waste Industries, Inc., Auburn Hills, Michigan

Project Manager for landfill gas project that provides methane to the GM Lake Orion boiler system. Managed budget and non-routine activities. Worked with Air Quality Specialists, Inc. to maintain environmental compliance.

Pine Tree Acres Landfill, Inc., Waste Management, Lenox Township, Michigan

Project Manager for well field technicians and aided in routine well field tuning to increase flow to the gas energy plant on site. Worked with Air Quality Specialists, Inc. to maintain environmental compliance.

Statewide Landfill, Waste Management, Canton, Ohio

Project Manager for well field technicians and aided in routine well field tuning, installation of pneumatic pumps, small scale construction repairs, and troubleshooting potential landfill gas migration issues.

Valley View Landfill, Republic Services, Sulpher, Kentucky

Supervisor for well field technicians. Managed routine and non-routine budgets. Responsible for environmental compliance reporting.

Landfill Air Compliance Reporting Experience

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

Prepared semiannual Title V reports, semiannual new source performance standards (NSPS) reports, and semiannual startup, shutdown, and malfunction (SSM) reports. Submitted variance requests/alternative timeline requests, Title V annual compliance certification, and well decommissioning requests and Deviation Occurrence Reports.

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

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

Prepared quarterly/semiannual Title V reports, semiannual EG reports, and semiannual SSM reports. Submitted variance requests/alternative timeline requests and well decommissioning requests.

Epperson Waste Disposal, Republic Services, Williamstown, Kentucky

Prepared semiannual NSPS reports and semiannual SSM reports. Submitted alternative variance requests/alternative timeline requests and well decommissioning requests.

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

Prepared semiannual EG reports, semiannual SSM reports, semiannual Clean Air Act Permit Program (CAAPP) reports, and annual CAAPP compliance certifications. Submitted CAAPP Form 405s on an as need basis.

Hardy Road Sanitary Landfill, Waste Management, Akron, Ohio

Prepared semiannual NSPS reports, semiannual SSM reports, quarterly/semiannual Title V reports, annual Title V compliance certifications, and annual solid waste report. Maintained operating records.

Hoffman Road Landfill, City of Toledo, Toledo, Ohio

Prepared semiannual NSPS reports, semiannual SSM reports, and quarterly/semiannual Title V reports.

Lake County RDF, Waste Management, Chesterland, Ohio

Prepared semiannual EG reports, semiannual SSM reports, quarterly/semiannual Title V reports, annual Title V compliance certifications, and annual solid waste report.

Lake Landfill, Waste Management, Northbrook, Illinois

Prepared semiannual EG reports, semiannual SSM reports, semiannual CAAPP reports, and annual CAAPP compliance certifications. Submitted CAAPP Form 405s on an as need basis.

Metro Park East Landfill, Waste Management, Mitchellville, Iowa

Prepared semiannual NSPS reports, semiannual SSM reports, semiannual Title V reports, and annual Title V compliance certifications.

Valley View Landfill, Republic Services, Sulpher, Kentucky

Prepared semiannual NSPS reports, semiannual SSM reports, semiannual Title V reports, and annual compliance certifications. Submitted variance requests/alternative timeline requests, and well decommissioning requests.

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

Prepared semiannual EG reports, semiannual SSM reports, quarterly/semiannual Part 70 compliance certifications, and annual Part 70 compliance certifications. Submitted variance requests/alternative timeline requests, well decommissioning requests, and Deviation Occurrence Reports.

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

Prepared semiannual EG reports, semiannual SSM reports, semiannual Title V reports, and annual compliance certifications. Submitted variance requests/alternative timeline requests, and well decommissioning requests.

Bryant Kiedrowski, P.E.

Experience Summary

Mr. Kiedrowski has eight years of civil and environmental engineering experience. His experience includes developing municipal local limits, National Pollutant Discharge Elimination System (NPDES) permitting, evaluating landfill leachate generation and handling practices, landfill gas system design, and landfill gas construction quality assurance monitoring.

Assignment

CQA Field Observer

Education

M.S. Civil Engineering, Case
Western Reserve University, 2003

B.S. Civil Engineering, Case
Western Reserve University, 2003

Registration

Professional Engineer, Ohio
(2007)

Experience

8 years

Joined Firm

2008

Training

- HAZWOPER Eight-hour Refresher
- Bloodborne Pathogens Exposure Control
- First Aid
- Hazard Communications
- 40-Hour Hazardous Waste Operations Safety Training

Relevant Expertise

- Wastewater Collection Systems
- Industrial Water Quality
- Landfill Gas Design

Albion Local Industrial User Limits, City of Albion, Michigan

Engineer. Reviewed and developed new local industrial user limits for the City. Worked with the City's wastewater treatment plant (WWTP) superintendent in developing the local industrial user limits with an emphasis on new industries, problematic industries, and public concerns.

American Landfill Underdrain Treatment System, Waste Management, Inc., Waynesburg, Ohio

Project Engineer. Worked with Ohio Environmental Protection Agency (Ohio EPA) throughout the NPDES permitting process to meet both the client's needs and the agency's needs. Performed field tests and analyses to determine ammonia content and iron settling capabilities of underdrain water. Assisted in design layout and selection of treatment system. Designed pipe runs leading from the underdrain water pumps to the treatment system and from the treatment system to the receiving stream.

Bobmeyer Landfill POTW Connection, Republic Services, Inc., Fairfield, Ohio

Project Engineer. Worked with the City of Fairfield and the City of Hamilton to meet both the client's needs and each municipality's needs. Designed discharge pipe connecting landfill's leachate tanks to the public sewer system. Experience working with Norfolk Southern Railway and abiding by their specifications for carrier pipelines crossing their right of way. Worked along with contractors to adapt design to unforeseen circumstances during construction.

Cherokee Run Landfill Gas System Design, Republic Services, Inc., Bellefontaine, Ohio

Project Engineer. Designed five-year gas collection and control system phasing plan for future expansion plans and budgetary purposes. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity. Provided assistance to field staff in moving locations of gas wells and verifying drilling depth as conditions require.

Cherokee Run Landfill Gas Collection and Control System Construction Quality Assurance Monitor, Republic Services, Inc., Carey, Ohio

Project Engineer. Observed the drilling and installation of landfill gas monitoring wells at municipal waste landfill. Provided written and photographic documentation of installation methods, as well as equipment and materials onsite. Prepared daily work summary reports for client.

CLD Landfill Gas System Design, Republic Services, Inc., Salem, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity.

CLD Landfill Gas Collection and Control System Construction Quality Assurance Monitor, Republic Services, Inc., Salem, Ohio

Project Engineer. Observed the drilling and installation of landfill gas monitoring wells at construction and demolition landfill. Provided written and photographic documentation of installation methods, as well as equipment and materials onsite. Prepared daily work summary reports for client.

Coca-Cola Columbus Syrup Plant Wastewater Management Plan Update, Coca-Cola North America, Columbus, Ohio

Project Engineer. Collected information regarding the facility's production, clean-in-place (CIP) processes, products, and membrane bioreactor (MBR) treatment system influent. Collected CIP Wastewater and pure syrup product samples and analyzed for chemical oxidation demand (COD) and Brix. Estimated COD load in wastewater to the MBR system from each process. Made recommendations to stabilize and decrease COD Loads to MBR system.

Coffin Butte Landfill Leachate Generation Evaluation, Republic Services, Inc., Corvallis, Oregon

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 30-year period while incorporating landfill filling and cell capping plans. Compared potential leachate disposal costs to potential savings through the implementation of exposed geomembrane cover and made recommendation on future leachate handling practices.

Conestoga Landfill Leachate Generation Evaluation, Republic Services, Inc., Morgantown, Pennsylvania

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 20-year period while incorporating landfill filling and cell capping plans. Used projected peak leachate generation volumes to meet state required leachate storage capacity at the landfill.

Holland Barrier Wall Design, Pfizer, Inc., Holland, Michigan

Project Engineer. Assisted in the design and the development of the alignment of the hydraulic barrier wall. Designed the fill of a sedimentation pond and of an inlet along the Macatawa River. Worked with Michigan Department of Environmental Quality (MDEQ) and United States Army Corps of Engineers (USACE) to obtain the necessary permits for the fill activities within the 100-year floodplain. Performed quantity takeoffs for the construction bid package.

Honeywell South Bend Water Balance and Sewer Mapping, Honeywell International, Inc., South Bend, Indiana

Engineer. Collected information regarding water use and created a water balance to satisfy a portion of the facility's energy audit. Determined cross connections in the facility. Inspected the facility's backflow preventers and determined whether each protected the potable water system from cross contamination. Made recommendations concerning the location and installation of backflow preventers.

Heath Industrial Pretreatment Program Assistance, City of Heath, Ohio

Project Engineer. Assisted in the direction of the Industrial Pretreatment Program for City of Heath. Performed industrial user inspections, created pretreatment program reports for Ohio EPA, evaluated the City's methods of fats, oils, and grease (FOG) removal and provided recommendation, reviewed and developed new local industrial user limits, and reviewed and updated existing local user permits.

Lake Area Landfill Leachate Generation Evaluation, Republic Services, Inc., Sarona, Wisconsin

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 10-year period while incorporating landfill filling and cell capping plans. Compared potential leachate disposal costs to potential savings through the implementation of exposed geomembrane cover and make recommendation on future leachate handling practices.

Local Industrial User Limits, City of Columbus, Ohio

Project Engineer. Reviewed and developed new local industrial user limits for the City. Collaborated with Ohio EPA during the development process. Created a report fully detailing calculations and assumptions used and created fully annotated spreadsheets for the City's future development of local industrial user limits. Assisted the City in redeveloping their current industrial user permits.

Lorain II Landfill Gas System Design, Republic Services, Inc., Oberlin, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity. Provided assistance to field staff in moving locations of gas wells and verifying drilling depth as conditions require.

NPDES Permitting for Various Municipal and Industrial Clients

Project Engineer. Developed and submitted NPDES permit and permit renewal applications for various municipal and industrial clients in the Midwest, including Republic Services Inc., The Andersons Inc., and City of Heath, Ohio. Worked with state regulators to meet both the clients' and agencies' needs. Developed water balances and flow schematics. Estimated pollutant concentrations in facilities' surface water discharge.

Newark Local Industrial User Limits, City of Newark, Ohio

Engineer. Reviewed and developed new local industrial user limits for the City. Collaborated with Ohio EPA during the development process.

Noble Road Landfill Gas System Design, Republic Services, Inc., Shiloh, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity.

Oak Grove Sanitary Landfill Leachate Generation Evaluation, Republic Services, Inc., Winder, Georgia

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected leachate data generation rates over a 10-year period while incorporating landfill filling and cell capping plans. Compared potential leachate disposal costs to potential savings through the implementation of exposed geomembrane cover and made recommendation on future leachate handling practices.

Pine Grove Landfill Leachate Treatment System, Republic Services, Inc., Amanda, Ohio

Project Engineer. Assisted in the design of a vertical wetland treatment system for the removal of ammonia from the landfill leachate stream. Evaluated multiple treatment technologies. Produced preliminary design drawings of the vertical wetland treatment system, piping and instrumentation diagrams and piping layouts for leachate dosing of the filter.

Sunshine Canyon Landfill Leachate Generation Evaluation, Republic Services, Inc., Sylmar, California

Project Engineer. Developed and calibrated a Hydrologic Evaluation of Landfill Performance (HELP) computer model based on landfill cell construction and historical precipitation and leachate generation volumes at the site. Projected the peak leachate generation volume for the site based on landfill filling and cell capping plans. Evaluated existing leachate treatment, conveyance, and storage capacity on site and recommended facility upgrades to better facilitate leachate handling capabilities.

Sycamore Landfill Leachate Treatment System, Republic Services, Inc., Hurricane, West Virginia

Project Engineer. Assisted in the design of a vertical wetland treatment system for the removal of ammonia from the landfill leachate stream. Evaluated multiple treatment technologies. Produced preliminary design drawings of the vertical wetland treatment system, piping and instrumentation diagrams, piping layouts for leachate dosing of the filter, and grading drawings for construction of the filter into an existing hillside.

Wyandot Landfill Gas System Design, Republic Services, Inc., Carey, Ohio

Project Engineer. Designed the placement of new and redrilled gas wells to maximize their effectiveness within the landfill. Completed design and as-built well schedules to maintain landfill integrity.

**Wyandot Landfill Gas Collection and Control System Construction Quality Assurance Monitor,
Republic Services, Inc., Carey, Ohio**

Project Engineer. Observed the drilling and installation of landfill gas monitoring wells at municipal waste landfill. Provided written and photographic documentation of installation methods, as well as equipment and materials onsite. Prepared daily work summary reports for client.

Memberships

Water Environment Federation

Bill Foster

Experience Summary

Bill Foster has extensive experience dealing with project management, surveying, project scheduling, project cost estimating. As a design engineer, Mr. Foster has experience in landfill design, sewer design, grading, technical report preparation, landfill gas collection and control systems (GCCS), leachate management systems, and surface water management systems. As a field engineer, he has experience in providing quality assurance (QA) services for the construction and certification of municipal solid waste facilities, sanitary landfill facilities, and construction and demolition debris facilities. As a field technician, he has experience in observing and inspecting the installation of soils, aggregates, geosynthetics, geotextiles, structural fill berms, landfill gas collection and control systems, leachate management systems, recompacted soil barriers (liner/leachate and cap systems), protective cover placement, drainage structures, and final cover placement.

Mr. Foster has been involved in many projects as a project engineer, a design engineer, a field engineer and a field technician. These projects include site selection, borrow study evaluation, wetlands delineation, cost analysis, design of leachate management systems, design of surface water management systems, design of Class I, II, and III water reservoirs, design of landfill gas collection and control systems, cap and liner stability analysis, air emission calculations, and access road development. Compost facilities and transfer station applications have also been prepared under his direction.

Assignment

CQA Field Observer

Education

BS, Civil & Environmental Engineering,
The Ohio State University, 2001.

Registration

Engineering Intern, (E.I.) Ohio

Surveying Intern, (S.I.) Ohio

Training

40-Hour OSHA Health & Safety Training

Troxler Nuclear Density Gauge Certified

OSHA Site Supervisor Training

CPR/First Aid

APR Training

AED Training

Experience

11 years

Joined Firm

2009

Relevant Expertise

- Construction Quality Assurance (CQA)
- Project and Site Management
- Installation and Quality Assurance/Quality Control
- Repair and Maintenance
- Project Cost Estimating and Budget Control
- Permitting
- Compliance
- Planning and Development
- Design

Relevant Project Experience

Countywide Recycling & Disposal Facility 2011 South Slope Relocation, Gas and Liner System CQA Services, East Sparta, Ohio

Provided engineering expertise and served as the construction quality assurance (CQA) lead for this project that included modifications to the existing south slope, the existing leachate collection system, the existing GCCS, and the existing temporary flexible membrane liner (FML). These modifications consisted of the:

- Relocation of approximately 142,000 cubic yards of waste
- Replacement of approximately 1,900 feet of toe drain
- Installation of approximately 11,000 feet of high-density polyethylene (HDPE) pipe of various diameters.
- Installation of 5 new extraction wells
- Installation of 11 replacement extraction wells
- Installation of approximately 22 acres of temporary FML

CQA activities included documenting waste relocation, leachate, GCCS, and FML installation, field testing of HDPE pipe and FML, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an "as-built" construction certification report. Served as liaison between several parties including the US EPA, the Ohio EPA, the contractor, surveyor, pipe manufacturer, liner manufacturer, and the client. Prepared the construction certification report for submission and approval by the Ohio Environmental Protection Agency (Ohio EPA).

Imperial Landfill, LFG, Cell Construction, CQA Services, Republic Services, Inc., Republic Services, Findlay Township, Allegheny County, Pennsylvania

Provided engineering expertise and served as the construction quality assurance (CQA) lead for this \$8 million project to address odors resulting from hydrogen sulfide generation at a landfill located adjacent to an elementary school. Major project elements included the following:

- Installation of 42 acres of 40 mil geomembrane and 16 oz geotextile
- Construction of two new sedimentation ponds
- Expansion of an existing sedimentation pond
- Construction of nearly 20,000 feet of surface water channels
- Installation of 11 surface water culverts
- Installation of nearly 60,000 feet of high-density polyethylene (HDPE) header, lateral, horizontal collector, toe drain, forcemain, and airline piping of various diameters.
- Installation of 28 new extraction wells
- Installation of 11 replacement extraction wells
- Construction of a 3.7 acre dual-lined cell

The project involved assistance in developing the design, facilitating the permitting process, overseeing the construction, and providing the construction quality assurance services. Prepared the construction certification reports for submission and approval by the Pennsylvania Department of Environmental Protection for this time critical and substantial corrective action.

Countywide Recycling & Disposal Facility 2010 Gas System CQA Services, East Sparta, Ohio

Provided engineering expertise and served as the construction quality assurance (CQA) lead for this project that included modifications to the existing GCCS. These modifications consisted of the installation of the following:

- Approximately 19,000 feet of high-density polyethylene (HDPE) header, lateral, and forcemain piping of various diameters.
- 11 new extraction wells
- 2 pump stations
- 1 lift station
- 2 force main tie-in vaults

CQA activities included documenting GCCS installation, field testing of HDPE pipe, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an "as-built" construction certification report. Served as liaison between several parties including the Ohio EPA, the contractor, surveyor, pipe manufacturer, and the client. Prepared the construction certification report for submission and approval by the Ohio Environmental Protection Agency (Ohio EPA).

Countywide Recycling & Disposal Facility 2009 Gas System CQA Services, East Sparta, Ohio

Provided engineering expertise and served as the construction quality assurance (CQA) lead for this project that included modifications to the existing GCCS. These modifications consisted of the installation of the following:

- Approximately 43,000 feet of high-density polyethylene (HDPE) header, lateral, and forcemain piping of various diameters.
- 18 new extraction wells
- 26 replacement extraction wells

- 7 pump stations
- 2 force main tie-in vaults

CQA activities included documenting GCCS installation, field testing of HDPE pipe, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an “as-built” construction certification report. Served as liaison between several parties including the US EPA, the Ohio EPA, the contractor, surveyor, pipe manufacturer, and the client. Prepared the construction certification report for submission and approval by the Ohio Environmental Protection Agency (Ohio EPA).

Countywide Recycling & Disposal Facility Leachate Collection System Improvements CQA Services, East Sparta, Ohio

Provided engineering expertise and served as the CQA lead for this project that incorporated improvements to the leachate collection system. These improvements consisted of the installation of the following:

- Approximately 2,200 feet of gravity drain piping.
- Approximately 14,000 feet of force main piping.
- 2 lift stations.
- 6 manholes
- A 500,000-gallon above ground storage tank.

CQA activities consisted of documenting pipe installation, field testing of the leachate pipe, coordination and review of manufacture and laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an “as-built” construction certification report. Served as liaison between several parties including the US EPA, the Ohio EPA, the contractor, surveyor, concrete testing lab, leachate storage tank manufacturer, geosynthetics testing lab, and the client. Prepared the construction certification report for submission and approval by the Ohio EPA.

Countywide Recycling & Disposal Facility Isolation Break CQA Services, East Sparta, Ohio

Provided engineering expertise and served as the CQA lead for this project that included the installation of the following:

- Approximately 7,000 feet of high-density polyethylene (HDPE) header, lateral, and forcemain piping of various diameters.
- 8 new extraction wells
- 2 pump stations
- 1 force main tie-in vault
- 1 leachate sump
- Approximately 7.80 acres of Flexible Membrane Liner (FML)

CQA activities included documenting GCCS and FML installation, field testing of HDPE pipe and FML, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an “as-built” construction certification report. Served as liaison between several parties including the US EPA, the Ohio EPA, the contractor, surveyor, pipe manufacturer, FML manufacturer, and the client. Prepared the construction certification report for submission and approval by the United States Environmental Protection Agency (USEPA).

Countywide Recycling & Disposal Facility 2009 Temporary FML CQA Services, Stark County, Ohio

Provided engineering expertise and served as the CQA lead for this project which included the installation of approximately 22.4 acres of FML

CQA activities included documenting FML installation, field testing of FML, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation

of the construction progress and collecting data for an “as-built” construction certification report. Served as liaison between several parties including the US EPA, the Ohio EPA, the contractor, surveyor, FML manufacturer, soils testing lab, geosynthetics testing lab, and the client. Prepared the construction certification report for submission and approval by the USEPA.

Lorain County II Landfill Gas System CQA Services, Oberlin, Ohio

Provided engineering expertise and served as the CQA lead for this project that included the following:

- Replacement of approximately 800 linear feet of existing 12-inch diameter SDR-17 HDPE header pipe along the north slope of the Landfill with new 12-inch diameter SDR-17 HDPE header pipe.
- Installation of new 6-inch diameter SDR-17 HDPE jumper lines for EW-47, EW-48, EW-56, and EW-62R2.
- Installation of new 4-inch diameter SDR-17 HDPE vacuum lines to three existing side slope risers.
- Enhancements (new 48-inch diameter HDPE sump top and 4-inch diameter HDPE vacuum pipeline) to the northern sump of the southwest leachate sumps.
- Replacement of existing 2-inch diameter wellheads with new 3-inch diameter wellheads on five landfill gas extraction wells.

CQA activities included documenting GCCS installation, field testing of HDPE pipe, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an “as-built” construction certification report. Served as liaison between several parties including the contractor, surveyor, pipe manufacturer, and the client. Prepared the construction certification report for submission and approval by the Ohio EPA.

Wyandot County Landfill Gas System CQA Services, Carey, Ohio

Provided engineering expertise and served as the CQA lead for this project that included the installation of approximately 2,956 linear feet of high-density polyethylene (HDPE) header, lateral, and forcemain piping of various diameters to connect the re-drilled extraction wells, new flare station, condensate sump, and convert the two existing extraction wells for combination wellheads.

CQA activities included documenting GCCS installation, field testing of HDPE pipe, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an “as-built” construction certification report. Served as liaison between several parties including the contractor, surveyor, pipe manufacturer, and the client. Prepared the construction certification report for submission and approval by the Ohio EPA.

Design, Permitting, and Construction Quality Assurance of a Resource Conservation and Recovery Act (RCRA) Hazardous Waste Landfill, Eastern Ohio

Managed the permitting and design for the remediation of an existing RCRA hazardous waste landfill in eastern Ohio. Permitting included the preparation and subsequent approval of the Interim Measures Work Plan for submittal to the USEPA Region 5 as part of a Consent Decree. The landfill remedial design included replacement of leachate storage tanks, incorporation of a new final cover system to completely encompass the existing landfill footprint, construction of a flood protection levee, and remediation of the perimeter surface drainage system. Provided CQA for the construction of the new final cover system including geosynthetic components installation. Prepared the construction certification report for submission and approval by the USEPA.

Coshocton County Landfill, Coshocton, Ohio

Served as project engineer and CQA lead on a project that included excavation of cell, placement of engineered subgrade, structural fill, recompacted soil liner, geosynthetic clay liner, 60 mil HDPE geomembrane, geotextile, HDPE pipe, and protective layer. QA activities included documenting liner installation, field sampling and testing, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress, and collecting data for an “as-built” construction certification report. The work was performed at an accelerated pace to meet the client's needs. To minimize and ease the regulatory review process, worked closely with the

site owner and the Ohio EPA district engineers through the preparation of this alteration. Served as liaison between several parties including the contractor, surveyor, soils testing lab, geosynthetics testing lab, and client. Prepared construction certification report for submission to the Ohio EPA.

Gallia County Landfill, Gallia County, Ohio

Provided engineering expertise and served as the CQA lead for this project which included leachate management system (leachate collection and storage system, lift station, and force main), surface water management system (sedimentation basin, culverts, and channels), and a final cover system (recompacted soil barrier, intermediate cover, linear low-density polyethylene (LLDPE) geomembrane, geonet, geotextile and vegetative layer). CQA activities included documenting liner installation, field sampling and testing, coordination and review of laboratory testing, interpretation of specifications, documentation of all construction activities, documentation of the construction progress and collecting data for an "as-built" construction certification report. Served as liaison between several parties including the contractor, surveyor, soils testing lab, geosynthetics testing lab, and client. Prepared the construction certification report for submission and approval by the Ohio EPA. Also prepared the annual operational report for submission and approval by the Ohio EPA.

Franklin County Sanitary Landfill, Franklin County, Ohio

As Project Engineer, is involved in all contracts providing professional services at the Franklin County Landfill, either for the landfill operator or the Solid Waste Authority of Central Ohio (SWACO). Highly knowledgeable with the landfill and both the current landfill operations management and the SWACO landfill management personnel. Prepared the annual operational report for submission and approval by the Ohio EPA. Developed an excellent working relationship with the Ohio EPA Central District engineers and general staff having regulatory jurisdiction over the site.

H. Hafner & Sons, Inc., Construction and Demolition Debris Facility, Cincinnati, Ohio

Project included excavation of cell, placement of engineered subgrade, structural fill, recompacted soil liner, HDPE pipe, protective layer, drainage channels, sedimentation basins, and leachate management system. Services include preparing required air emission and storm water discharge permit applications for this facility located along the Little Miami River (State Designated Scenic River), including a Storm Water Pollution Prevention Plan (SWPPP) to control site runoff. Had designed a leachate management system, a surface water management system, and overall site grading. Evaluated the floodway line and 100-year flood impact of the Little Miami River adjacent to this site using HEC modeling. The firm has worked closely with the local health department to demonstrate facility expansion plans and flood control practices in this environmentally sensitive area. The firm has prepared various site expansion plans to compare available airspace in relation to final site grade and coordinated topographic mapping of the site. The firm has assisted the owner in phasing the landfill development in such a manner to minimize financial assurance requirements. Prepared the annual license application reports for submission and approval by the Ohio EPA.

D-K Enterprises, Construction and Demolition Debris Facility, Wood County, Ohio

Re-designed surface water management system (drainage channels, stilling basins, and sedimentation basins), and overall site grading. Prepared air emission and storm water discharge permits, a SWPPP, a preliminary site layout. Prepared a SWPPP to control site runoff. Provided design assistance in site access road paving, site entry layout, operational manifests, and transportation logs to allow the site operator to better track incoming loads. Coordinated the acquisition of topographic mapping and property line surveys. Also prepared numerous annual license application reports for submission and approval by the Ohio EPA.

Gene Hazen & Sons, Construction and Demolition Debris Facility, Zanesville, Ohio

Provided project engineering, project management, and oversight of this project from designing the final cap to the closure construction certification report. The project was under legal action from the Ohio's Attorney General's Office. The Ohio EPA closely regulated this project and considered many different closure options in detail. Developed an excellent working relationship with the Ohio EPA Southeast District engineers and general staff, as well as the staff of the Ohio Attorney General's Office, having regulatory jurisdiction over the site. Prepared the construction certification report for submittal and approval by the Ohio EPA.

Design, Permitting, and Construction of a Hazardous Waste Tipping Floor, The Environmental Quality Company, Wayne Disposal, Inc., Belleville, Michigan

Provided engineering expertise for the redesign, of a hazardous waste tipping floor, to minimize Polychlorinated Biphenyls being tracked out on the truck tires. Provided support in the preparation and management of the contract documents, technical specifications, and construction drawings including QA/QC of the final bid documents. Provided engineering guidance and construction quality assurance during the construction of the tipping floor.

Design, Permitting, and Construction of a Solid Waste Transfer/Recycling Station, Rumpke Waste, Inc., Ironton, Ohio

Provided engineering expertise for the design, permitting, and construction including construction quality assurance of a solid waste transfer/recycling station for a major solid waste company in southeast Ohio. The facility permit was obtained through the Ohio EPA Southeast District Office in accordance with the Ohio Administrative Code rules and regulations pertaining to transfer stations. Provided support in the preparation and management of the contract documents, technical specifications, and construction drawings including QA/QC of the final bid documents. Provided part-time construction quality assurance (CQA) during the construction of the facility.

North Star Golf Community Development, Delaware County, Ohio

Served as the project engineer providing expertise in surface water management, sediment control, and erosion control practices. Designed and modeled a channel to handle the off-site flow for up to a 100-year storm. Designed and modeled an irrigation impoundment to receive the 100-year storm without any discharge. Provided site grading and site underground utility layout guidance. Developed an excellent working relationship with the Ohio EPA Central District engineers and general staff and worked very closely with them throughout this project. Served as liaison between several parties including the contractor, surveyor, soils testing lab, and client.

The Ohio State University Experimental Wetlands, Franklin County, Ohio

Project included redesigning the surface water management of facility to better meet the client's needs. This project required more regulated inflow and the outflow of a 6.0 acres wetland area and the ability to possibly control, if so desired. An outlet channel and outlet structure, as well as a pump to control the inflow were all components of the design.

Long Term Control Plan, City of Columbus, Ohio

Served as a sampling crew team leader for this project. His crew is responsible for collecting samples from sewer overflows and regulators throughout the City's sewer system during wet weather events. Member of the consultant team led by Malcolm Pirnie, Inc., conducting these studies for the City of Columbus to develop a long-term plan to control and eliminate sewer overflows.

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Appendix D: Project Record Drawings

LEGEND

PROPERTY BOUNDARY

EXISTING SOLID WASTE CELL BOUNDARY

EXISTING 10' CONTOUR

EXISTING 2' CONTOUR

EXISTING LANDFILL GAS HEADER

EXISTING CONDENSATE FORCEMAIN

EXISTING LEACHATE FORCE MAIN

EXISTING AREA OF FINAL COVER PLACEMENT

EXISTING AIRLINE

EXISTING COMMUNICATIONS CONDUIT

EXISTING LFG EXTRACTION WELL WITH LANDTEC WELLHEAD

EXISTING LFG EXTRACTION WELL

EXISTING COMBINATION WELL

EXISTING REMOTE WELLHEAD

EXISTING HORIZONTAL COLLECTOR WELLHEAD

EXISTING HEADER ACCESS RISER

EXISTING CONTROL VALVE

EXISTING BLIND FLANGE

EXISTING FLANGE CONNECTION

EXISTING CONDENSATE DRIPLEG

EXISTING CONDENSATE SUMP STATION

EXISTING SELF DRAINING CONDENSATE TRAP

LANDFILL GAS HEADER/LATERAL AIRLINE

CONDENSATE FORCEMAIN

ROAD CROSSING

LFG WELL - ABANDONMENT

LFG EXTRACTION WELL

LFG EXTRACTION WELL - RE-DRILL

EXISTING LFG WELL - COMBINATION WELLHEAD

LFG COMBINATION WELL - RE-DRILL

LFG COMBINATION WELL - 8" WELL CASING

REMOTE WELLHEAD

CAP FOR LATERAL ABANDONMENT

CONTROL VALVE

AIR LINE AND FORCE MAIN ISOLATION VALVES

12"

6"

4"

2"

18"

24"

30"

36"

42"

48"

54"

60"

66"

72"

78"

84"

90"

96"

102"

108"

114"

120"

126"

132"

138"

144"

150"

156"

162"

168"

174"

180"

186"

192"

198"

204"

210"

216"

222"

228"

234"

240"

246"

252"

258"

264"

270"

276"

282"

288"

294"

300"

306"

312"

318"

324"

330"

336"

342"

348"

354"

360"

366"

372"

378"

384"

390"

396"

402"

408"

414"

420"

426"

432"

438"

444"

450"

456"

462"

468"

474"

480"

486"

492"

498"

504"

510"

516"

522"

528"

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540"

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558"

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690"

696"

702"

708"

714"

720"

726"

732"

738"

744"

750"

756"

762"

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774"

780"

786"

792"

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7392"

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7476"

7482"

7488"

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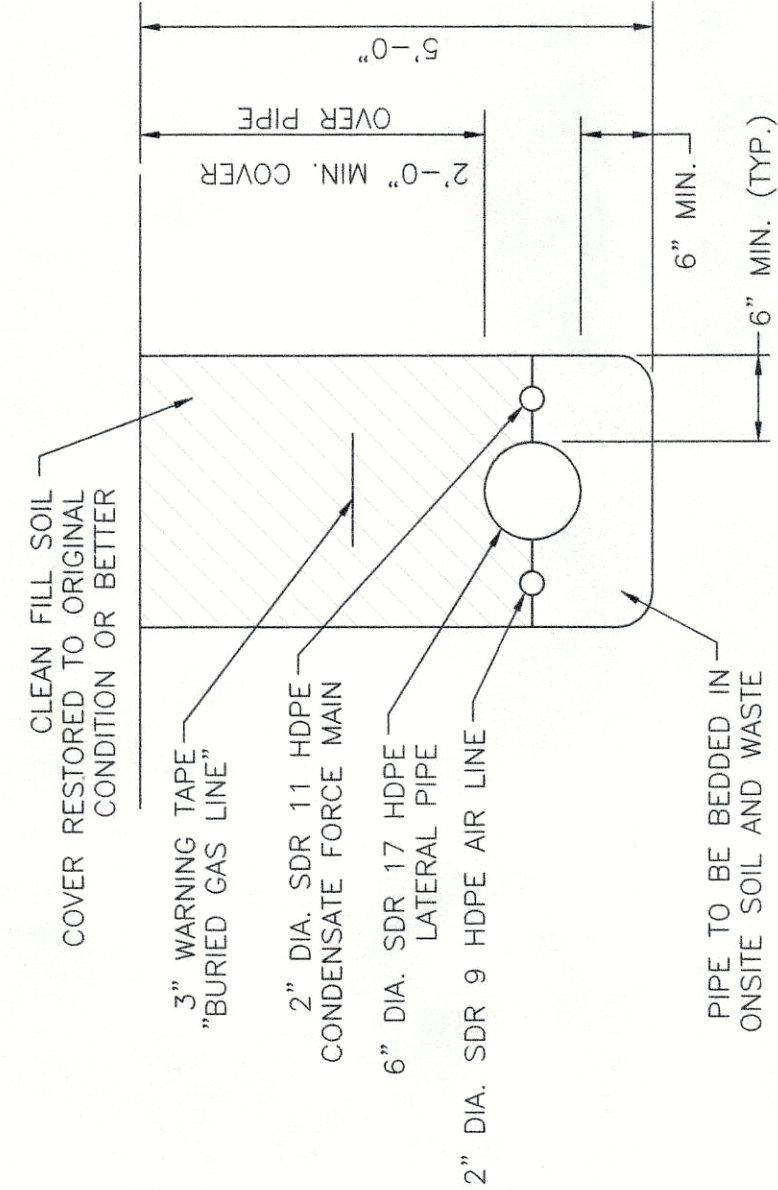
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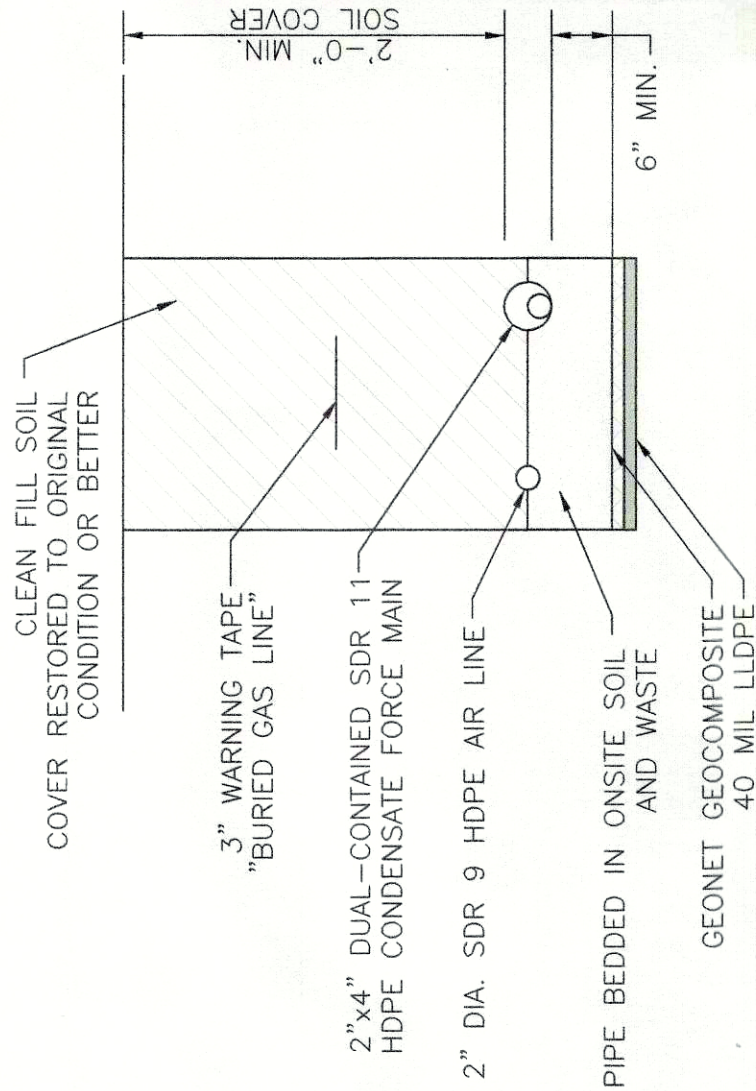
DETAIL

1

RD-3

SCALE: NOT TO SCALE

NOTES:
1. COMPACTED ONSITE SOIL AND WASTE PROVIDED SOLID BEDDING FOR PIPE.



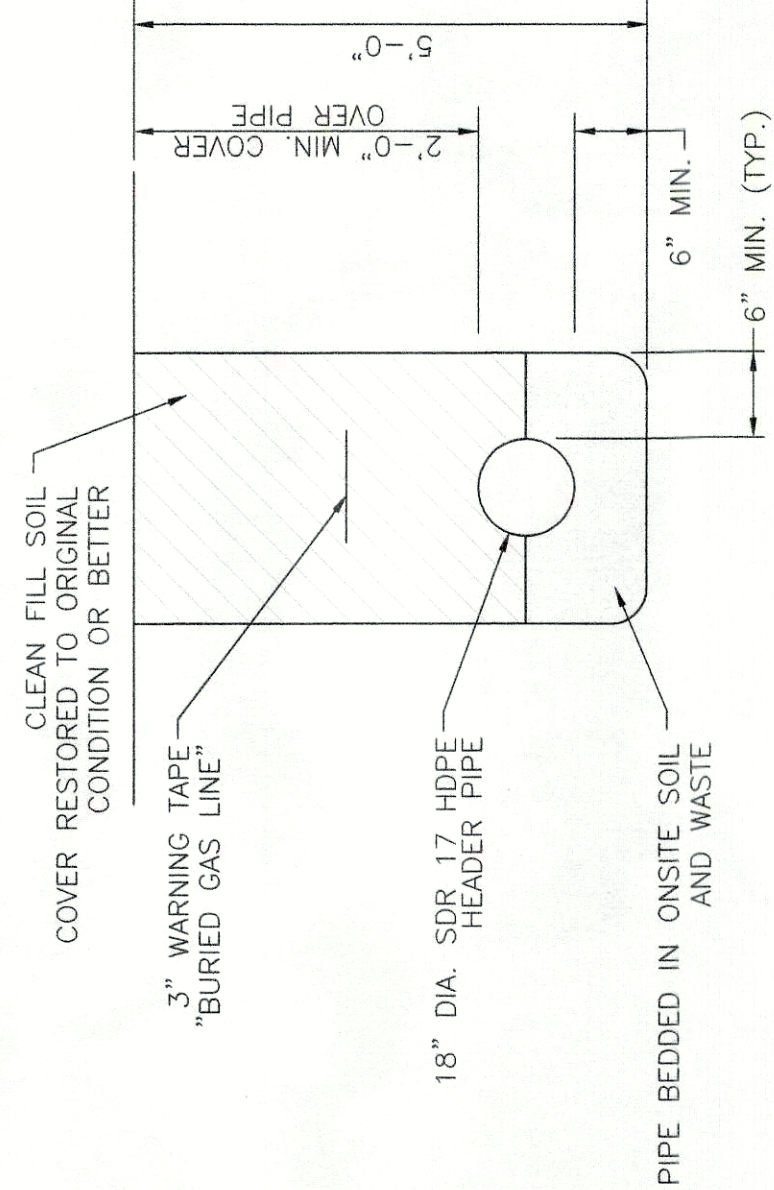
DETAIL

SCALE: NOT TO SCALE

5 RD-3

NOTES:

1. COMPACTED ONSITE SOIL AND WASTE PROVIDED SOLID BEDDING FOR PIPE.
2. CONDENSATE FOREMAIN IS 2" WHEN PLACED INSIDE THE LIMITS OF WASTE PLACEMENT, AND 2"x4" DUAL CONTAINED WHEN PLACED OUTSIDE THE LIMITS OF WASTE PLACEMENT OR AS NOTED ON DRAWINGS.



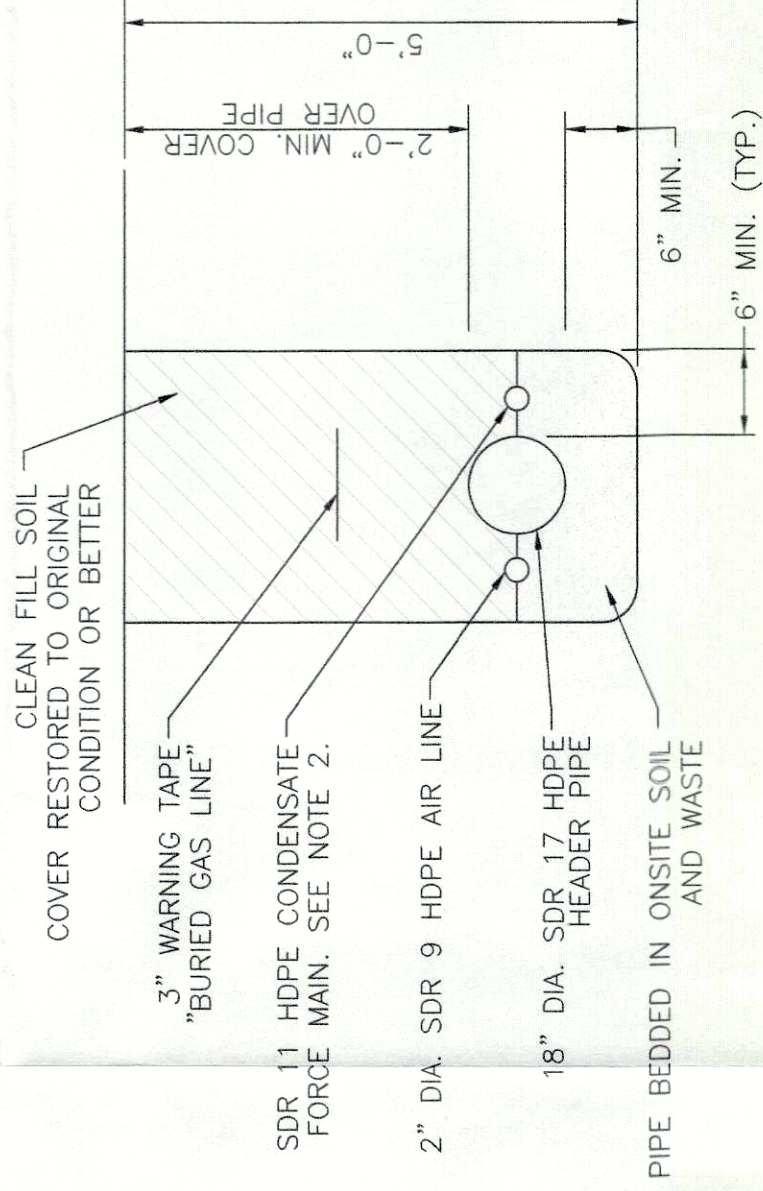
DETAIL

SCALE: NOT TO SCALE

7 RD-3

NOTES:

1. COMPACTED ONSITE SOIL AND WASTE PROVIDED SOLID BEDDING FOR PIPE.
2. SEEDED, FERTILIZED, AND MULCHED ALL DISTURBED AREAS.



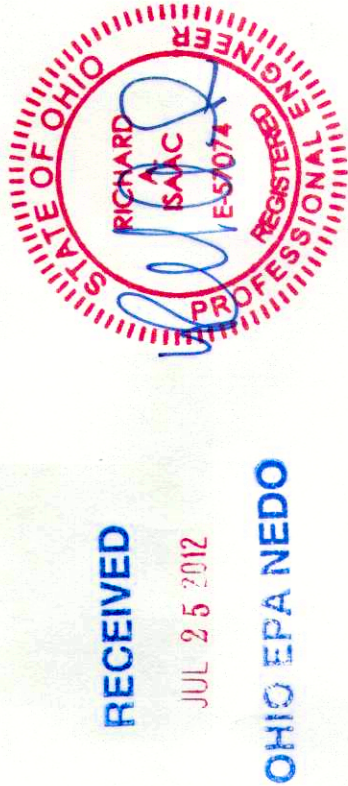
DETAIL

SCALE: NOT TO SCALE

8 RD-3

NOTES:

1. COMPACTED ONSITE SOIL AND WASTE PROVIDED SOLID BEDDING FOR PIPE.
2. SEEDED, FERTILIZED, AND MULCHED ALL DISTURBED AREAS.



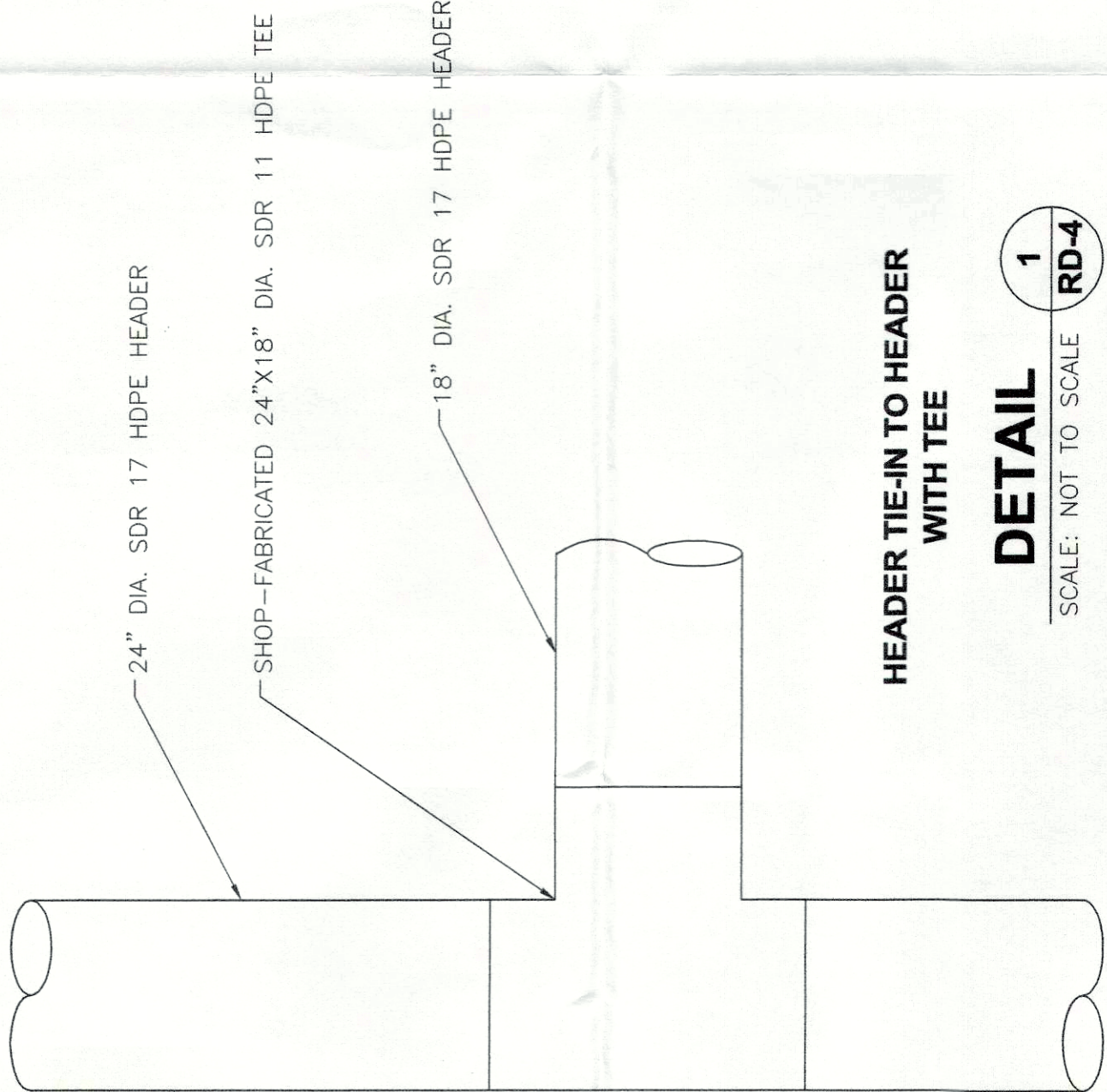
FILENAME	2012 Phase 1 RD-3
BC PROJECT NUMBER	142487
CLIENT PROJECT NUMBER	
DRAWING NUMBER	RD-3
SHEET NUMBER	3 OF 5

Brown and Caldwell

COLUMBUS, OHIO

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL

LINE IS 2" INCHES AT FULL SIZE (IF NOT 2" SCALE ACCORDINGLY)	EXTERNAL REFERENCE FILES
DESIGNED: BKK	BROWER.DWG
DRAWN: NG	
CHECKED: RI	
CHECKED: JT	
APPROVED: RI	

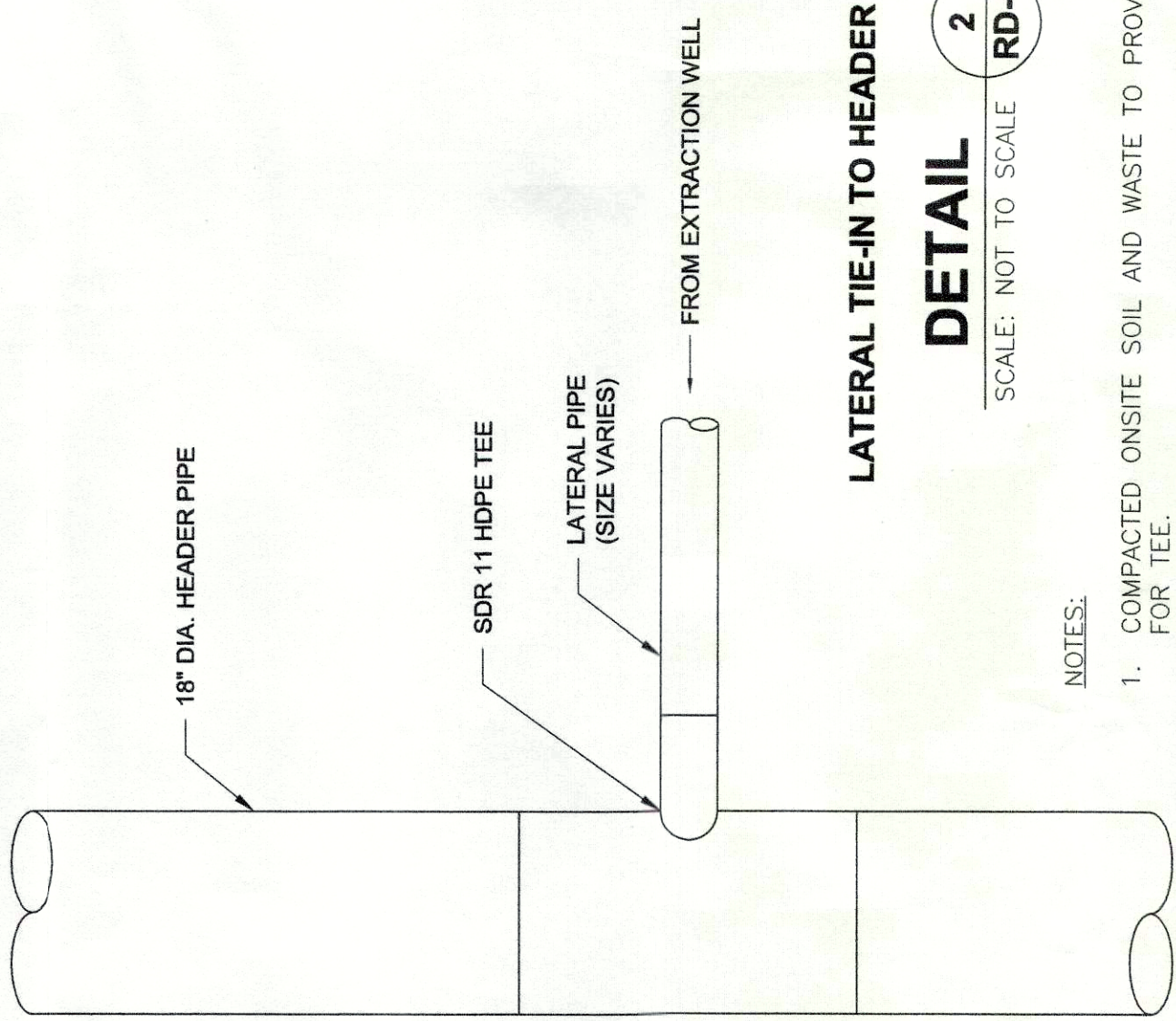


HEADER TIE-IN TO HEADER WITH TEE

DETAIL 1
SCALE: NOT TO SCALE
RD-4

NOTES:

1. COMPACTED ONSITE SOIL AND WASTE TO PROVIDE SOLID BEDDING FOR TEE.

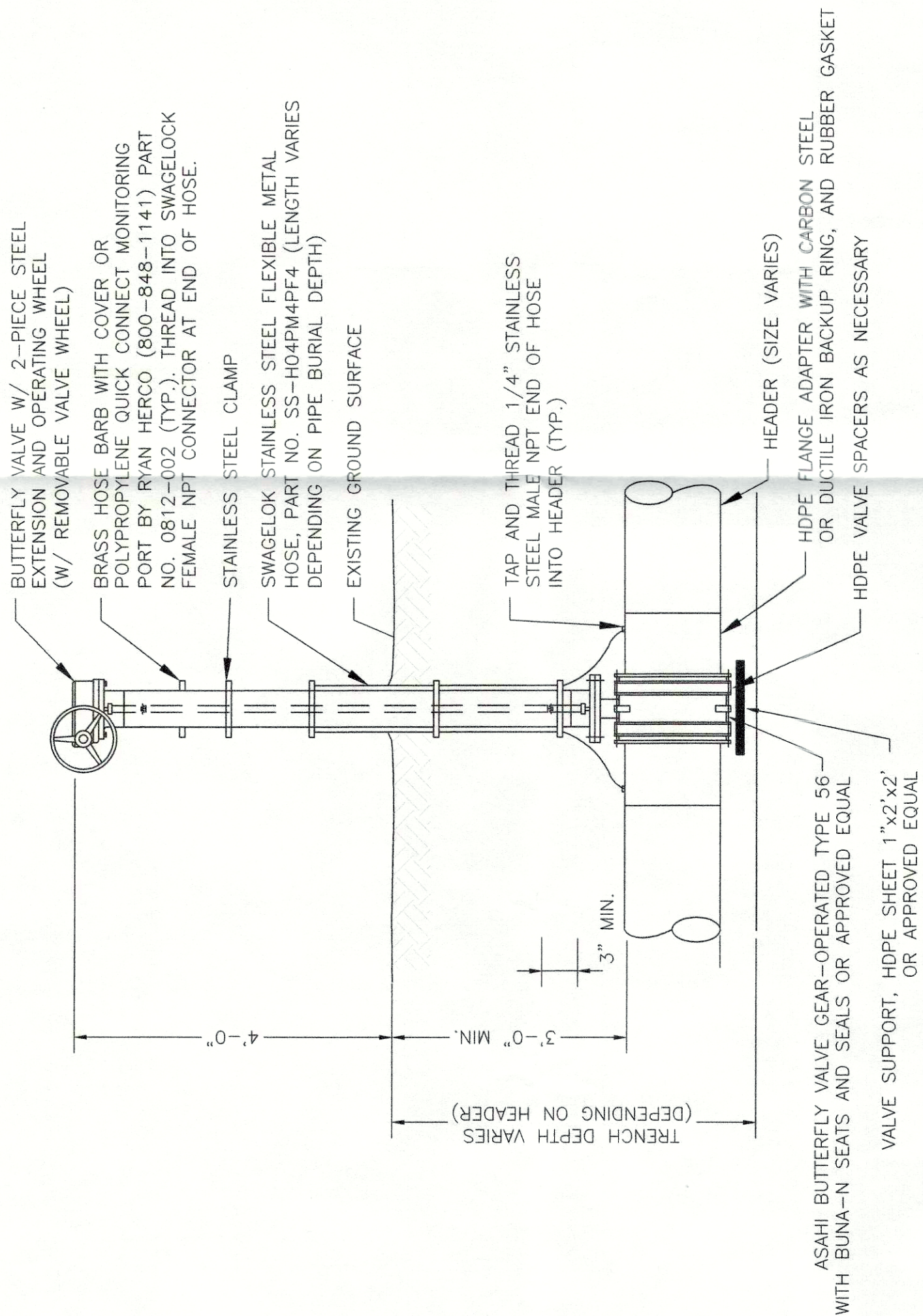


LATERAL TIE-IN TO HEADER

DETAIL 2
SCALE: NOT TO SCALE
RD-4

NOTES:

1. COMPACTED ONSITE SOIL AND WASTE TO PROVIDE SOLID BEDDING FOR TEE.

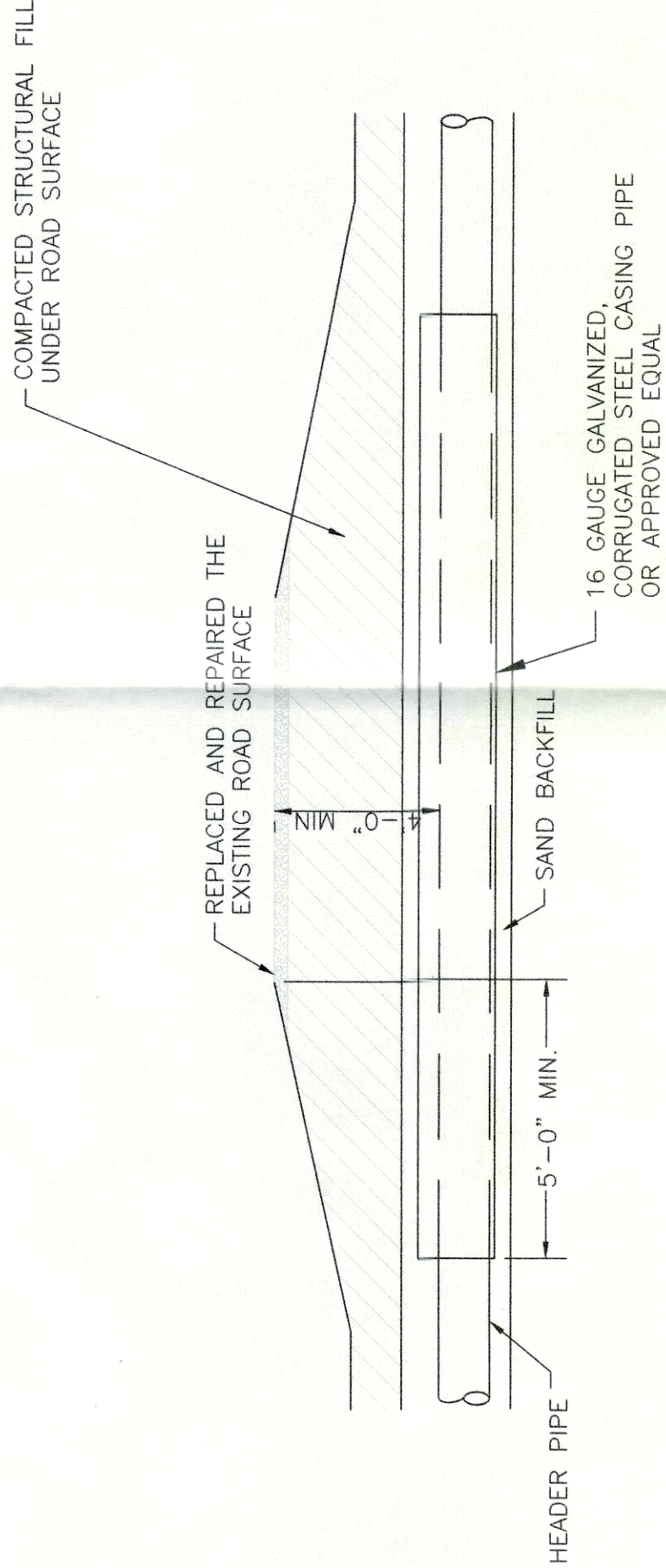


CONTROL VALVE

DETAIL 3
SCALE: NOT TO SCALE
RD-4

NOTES:

1. THOROUGHLY COAT ENTIRE SURFACE OF BOLTS, WASHERS, NUTS, AND BACKUP RINGS W/ POLYCOAT RUBBERIZED PRIMER, OR EQUAL AFTER TIGHTENING BOLTS. COATING SHALL HAVE NO "HOLIDAYS", OR GAPS IN ITS APPLICATION.
2. WRAP FLANGE IN PLASTIC WRAP PRIOR TO BACKFILLING.

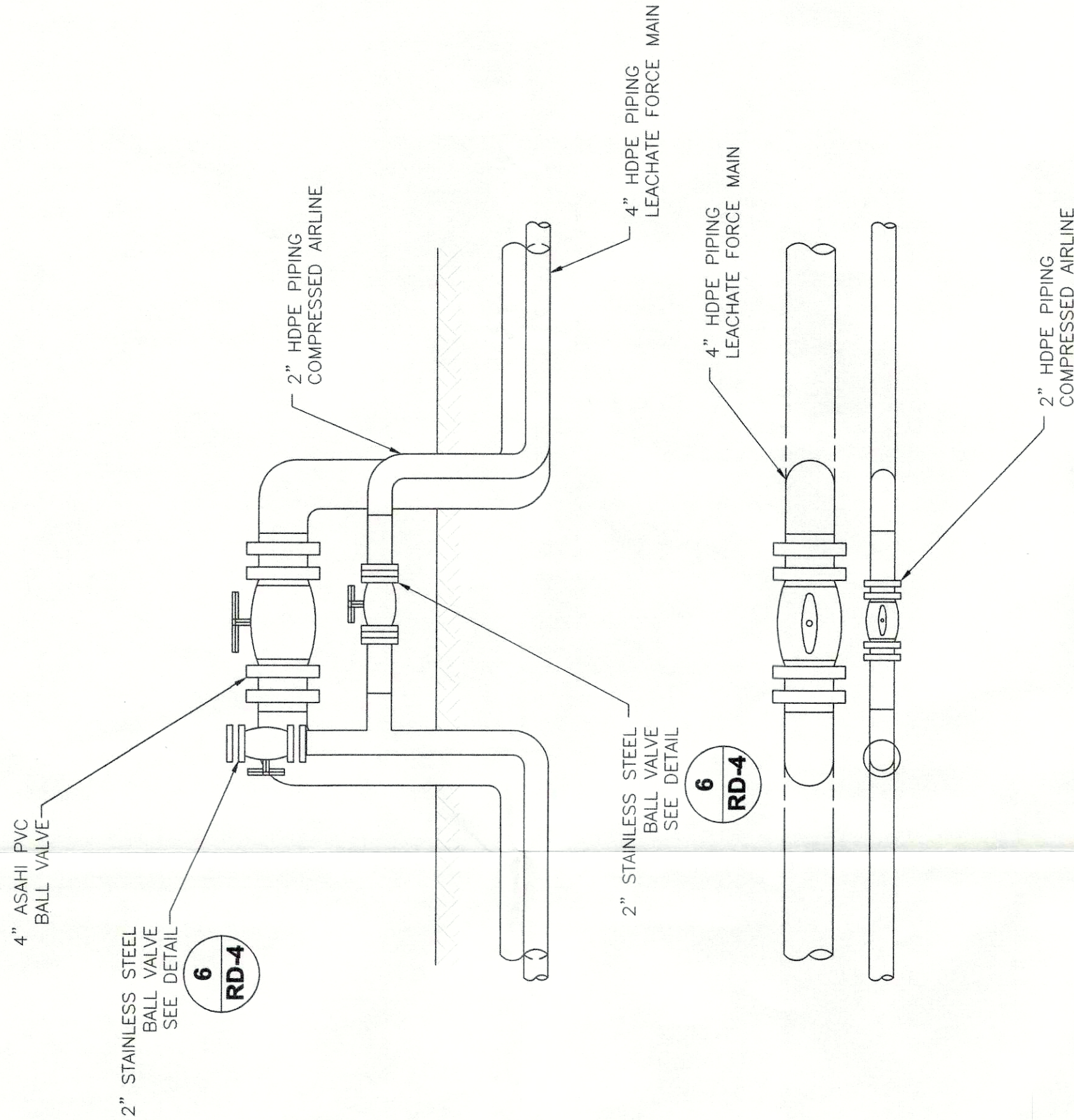


TRENCHED ROAD CROSSING

DETAIL 4
SCALE: NOT TO SCALE
RD-4

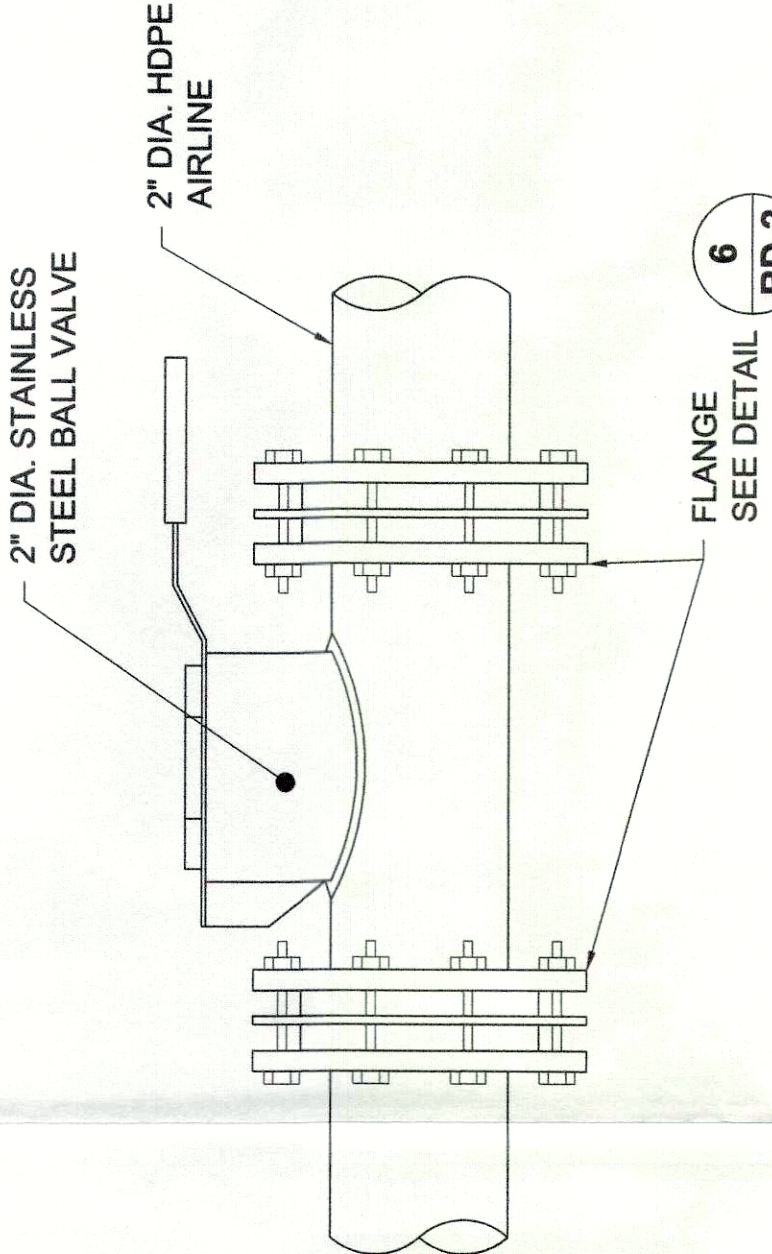
PIPE CASING SCHEDULE

2" FORCE MAIN PIPE AND 2" AIRLINE PIPE IN SAME CASING	10" CASING PIPE OR APPROVED EQUAL
18" HEADER PIPE	24" CASING PIPE OR APPROVED EQUAL



AIR LINE AND FORCE MAIN ISOLATION VALVES

DETAIL 5
SCALE: NOT TO SCALE
C-4



STAINLESS STEEL BALL VALVE ASSEMBLY

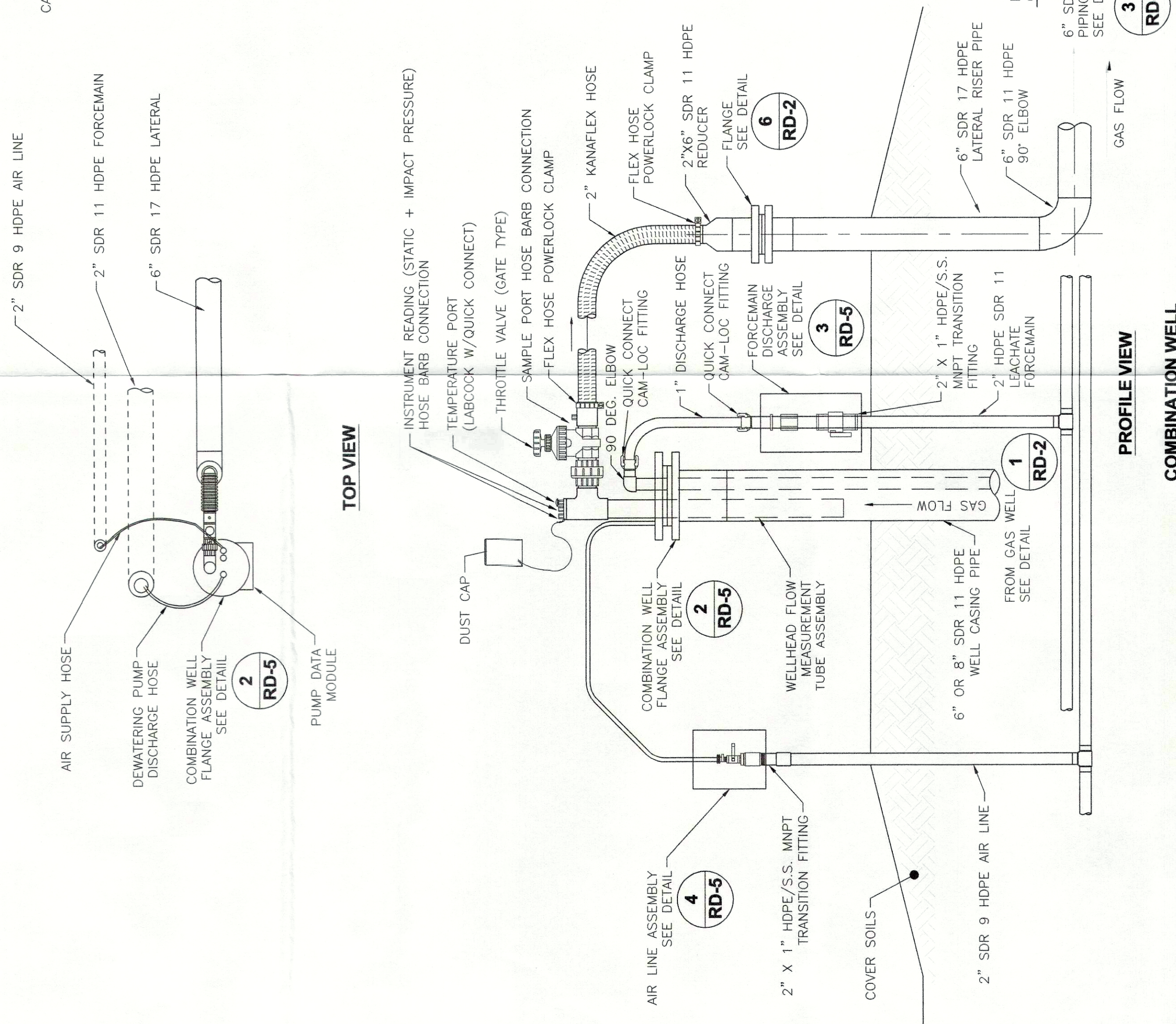
DETAIL 6
SCALE: NOT TO SCALE
RD-4

RECEIVED
JUL 25 2012



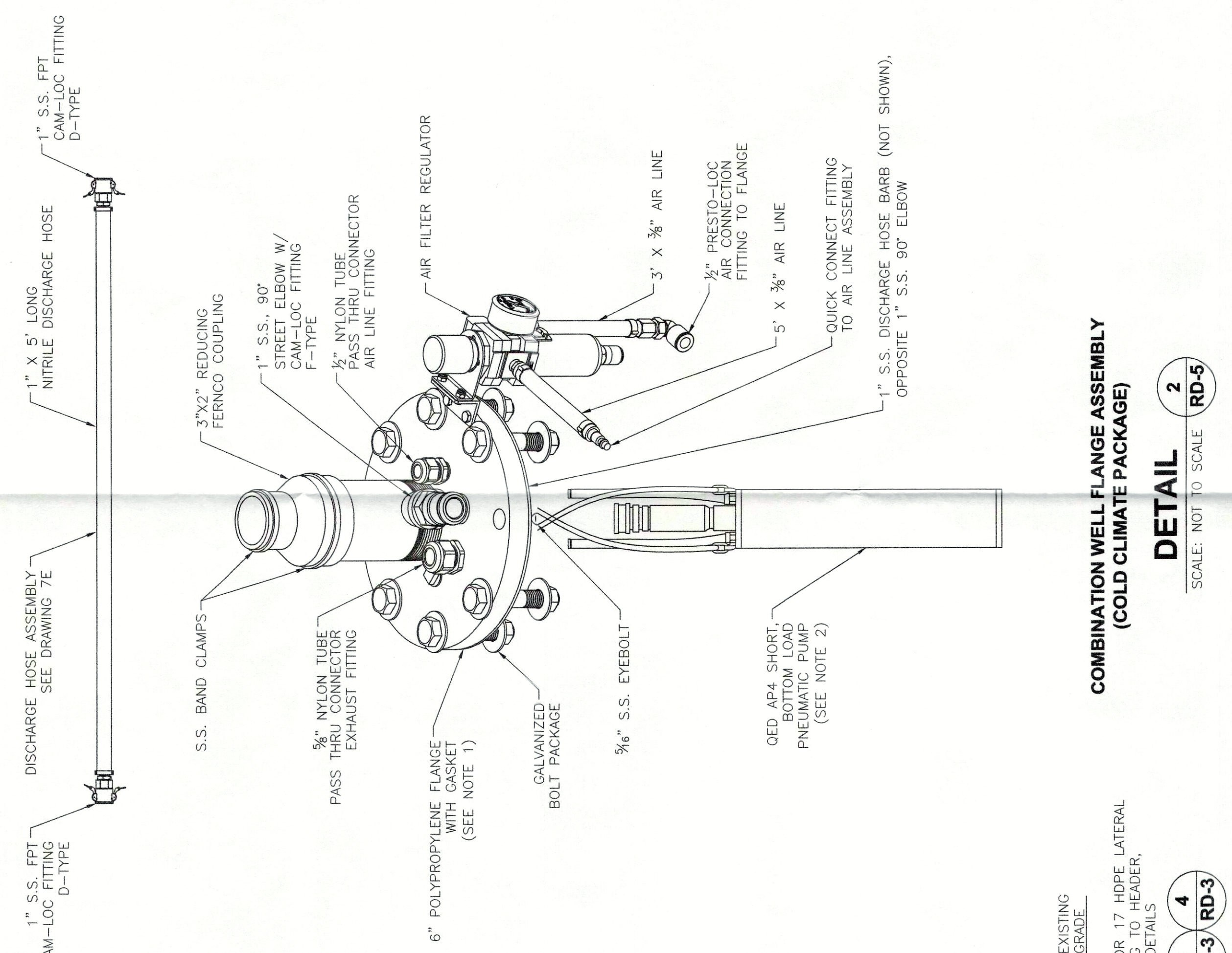
LORAIN COUNTY II LANDFILL
OBERLIN, OHIO
2012 GCCS PHASE 1
PROJECT RECORD DRAWINGS
DETAILS

FILENAME
2012 Phase 1_RD-4
BC PROJECT NUMBER
142487
CLIENT PROJECT NUMBER
DRAWING NUMBER
RD-4
SHEET NUMBER
4 OF 5



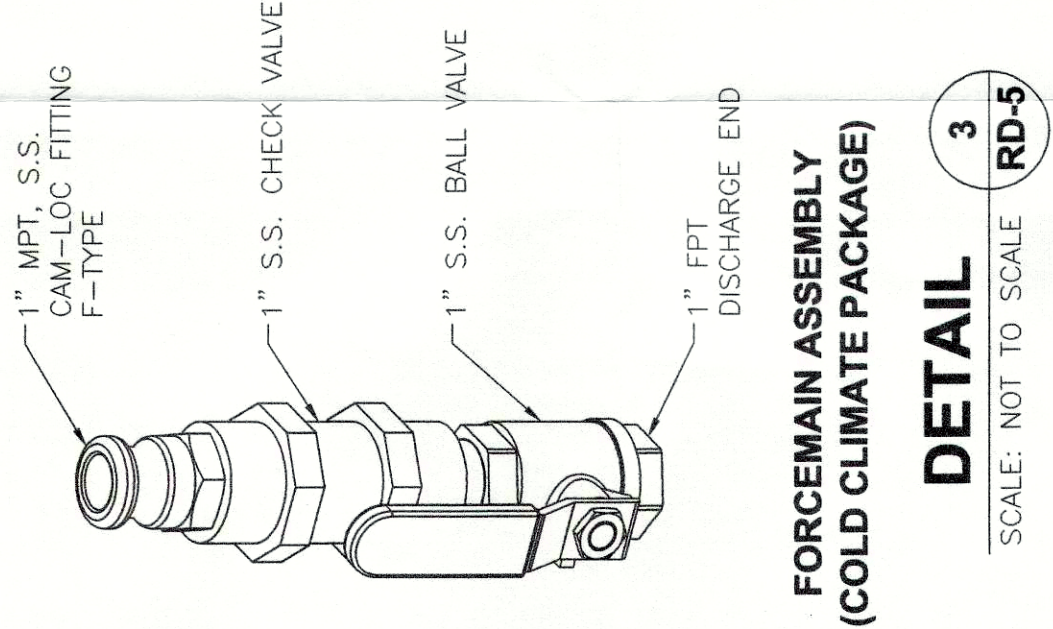
COMBINATION WELL
DETAIL 1
SCALE: NOT TO SCALE RD-5

- NOTES:
1. WELLHEAD ASSEMBLY SHOWN REPRESENTS 2" LANDTEC ACQU-FLO MODEL 200 WELLHEAD ASSEMBLY, TEL. 1-800-LANDTEC, FAX 1-909-825-0591.
 2. HIGH VISIBILITY TAPE PROVIDED AROUND TOP 1-FOOT OF WELL CASING AND LATERAL PIPE.



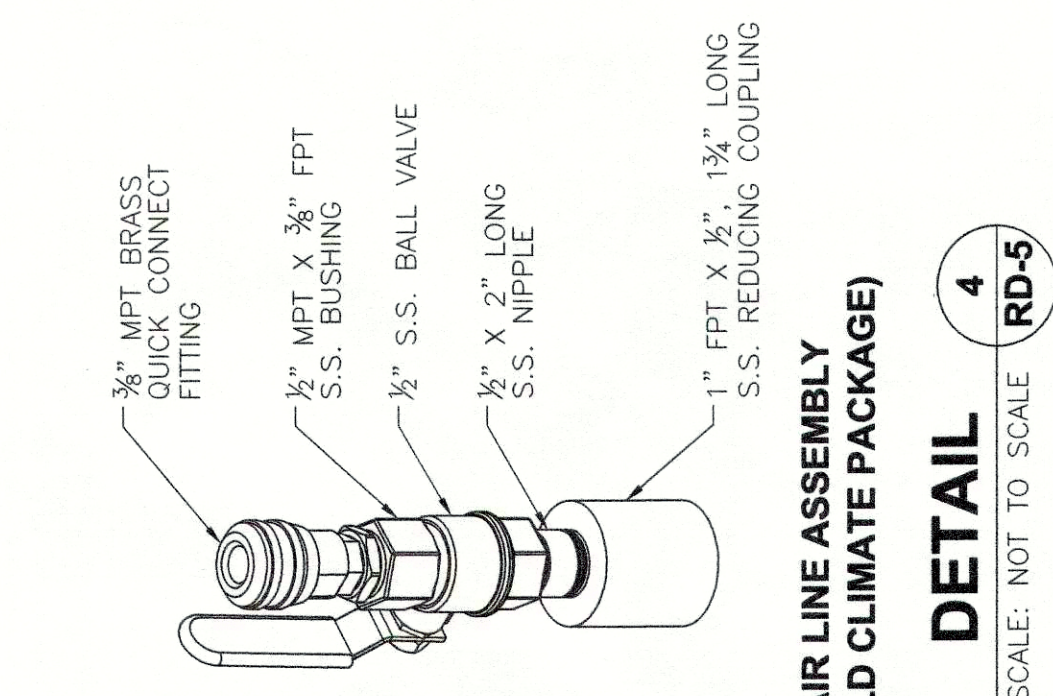
COMBINATION WELL FLANGE ASSEMBLY
(COLD CLIMATE PACKAGE)
DETAIL 2
SCALE: NOT TO SCALE RD-5

- NOTES:
1. DUAL EXTRACTION FLANGE ASSEMBLY SHOWN REPRESENTS COMPLETE 6" POLYPROPYLENE COLD CLIMATE FLANGE PACKAGE (#40084).
PACKAGE INCLUDES:
(1) 6" POLYPROPYLENE FLANGE (# 40075),
(2) COLD CLIMATE AIR LINE ASSEMBLY (#40073),
(3) COLD CLIMATE FORCEMAIN ASSEMBLY (#40072),
(4) DISCHARGE HOSE ASSEMBLY (#40074), AND
(5) AIR FILTER REGULATOR (#40006).
 2. PUMP AND HOSES NOT INCLUDED IN THE FLANGE PACKAGE.



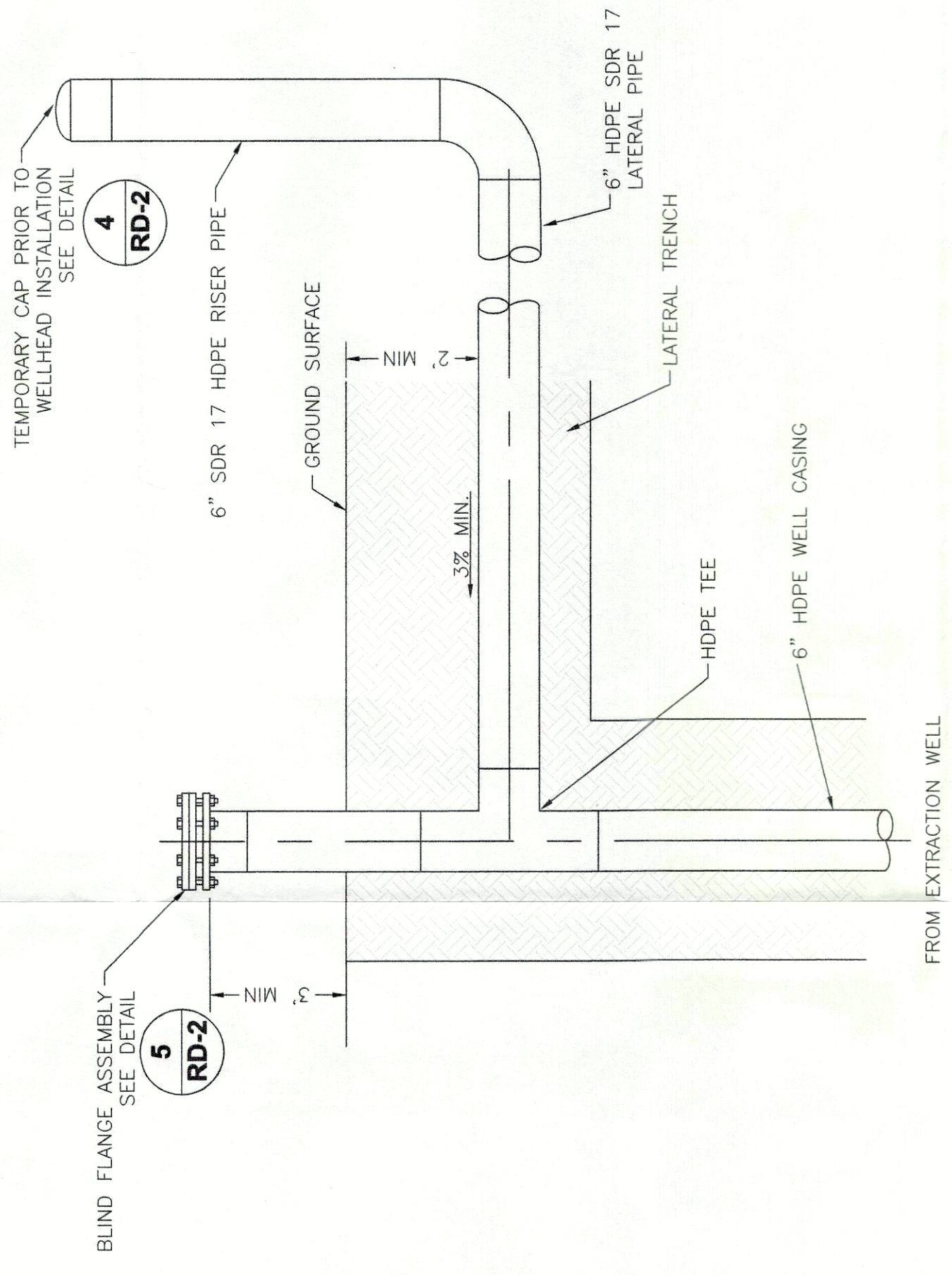
FORCEMAIN ASSEMBLY
(COLD CLIMATE PACKAGE)
DETAIL 3
SCALE: NOT TO SCALE RD-5

- NOTES:
1. FORCEMAIN ASSEMBLY SHOWN REPRESENTS COLD CLIMATE FORCEMAIN ASSEMBLY (#40072).



AIR LINE ASSEMBLY
(COLD CLIMATE PACKAGE)
DETAIL 4
SCALE: NOT TO SCALE RD-5

- NOTES:
1. AIR LINE ASSEMBLY SHOWN REPRESENTS COLD CLIMATE AIR LINE ASSEMBLY (#40073).



REMOTE WELL
DETAIL 5
SCALE: NOT TO SCALE RD-5

Brown and Caldwell
COLUMBUS, OHIO

SUBMITTED: _____ DATE: _____

PROJECT MANAGER

APPROVED: _____ DATE: _____

BROWN AND CALDWELL

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" SCALE ACCORDINGLY)

DESIGNED: BKK
DRAWN: NG
CHECKED: RI
APPROVED: RI

EXTERNAL REFERENCE FILES

Border.dwg

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

LORAIN COUNTY II LANDFILL
OBERLIN, OHIO

2012 GCCS PHASE 1
PROJECT RECORD DRAWINGS
DETAILS

FILENAME
2012 Phase 1 RD-5
BC PROJECT NUMBER
142487
CLIENT PROJECT NUMBER
DRAWING NUMBER
RD-5
SHEET NUMBER
5 OF 5

RECEIVED
JUL 25 2012
OHIO EPA NEDO

REGISTERED PROFESSIONAL ENGINEER
STATE OF OHIO
NO. 837014
BOBARD

Appendix E: Landfill Gas Extraction Well Boring Logs

American Environmental Group, Ltd.

American Environmental Group, Ltd



RECEIVED

JUL 25 2012

OHIO EPA NEDO

Well Log

PROJECT NAME Lorain 2

DATE: 4/13/2012

PROJECT# 101-12-105

Drilling		Well Asbuild	
EW31R WELL NUMBER OR NAME			
51 LINEAR FEET OF DRILLING			
51 LINEAR FEET OF COMPLETION			
LINEAR FEET OF ABANDONMENT			
Time in: 7:40 Time out: 8:50			
Time in: Time out:		Length of Solid 20	
Weather conditions: Cloudy		Clean on site soil backfill	
Site conditions: Dry		Bentonite 2 Ft Hydrated	
Rig hrs:		Soil 1 ft	
Service: Ralidator Grease		Isolation Ring	
		above	
		Length of Gravel Pack 33	
		Length of Perf. Pipe 30	
		style of pipe 6\"SDR11	
		Bore diameter 36\"well bore	
		Bottom of bore	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt Msw	Moderate	Dry	91
11:45 AM				10-20	Msw	Moderate	Dry	97
12:45 PM				20-30	Msw	High	Dry	104
1:45 PM				30-40	Msw	High	Dry	111
2:45 PM				40-50	Msw	High	Dry	115
3:45 PM				50-51	Msw Depth	High	Dry	124
4:45 PM				60-70				
5:45 PM				70-80				
				80-90				
				90-100				
Notes								

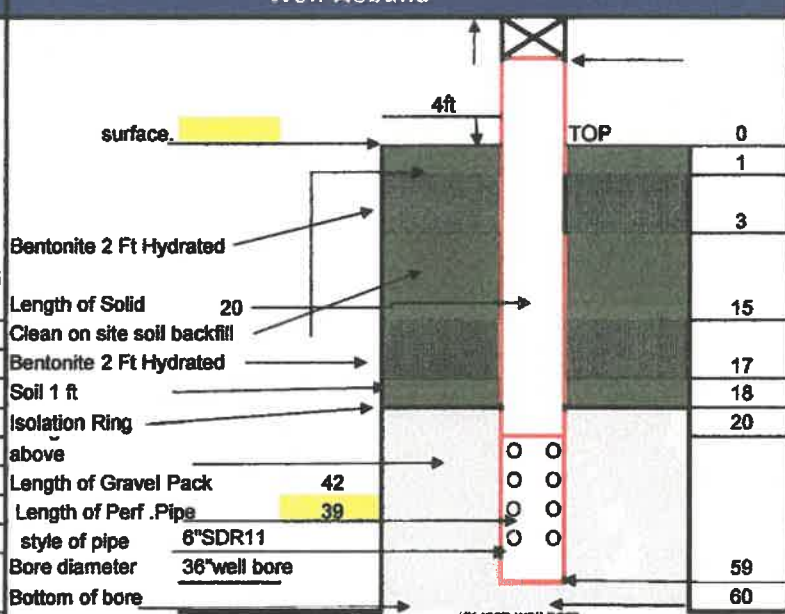
Detin Moore 4/13/12
 CLIENT REPRESENTATIVE DATE
Donna D. Doria CSM *Samuel Caldwell*
 NAME & TITLE

Detin Moore 4/13/2012
 AEGL SITE SUPERVISOR DATE

Well Log

PROJECT NAME Lorain 2
PROJECT# 101-12-105

DATE: 4/13/2012

Drilling		Well Asbuild	
EW108R WELL NUMBER OR NAME			
60 LINEAR FEET OF DRILLING			
60 LINEAR FEET OF COMPLETION			
LINEAR FEET OF ABANDONMENT			
Time in: 9:50 Time out: 11:25			
Time in: Time out:		Length of Solid 20	
Weather conditions: Cloudy		Clean on site soil backfill	
Site conditions: Dry		Bentonite 2 Ft Hydrated	
Rig hrs:		Soil 1 ft	
Service: Radiator Grease		Isolation Ring above	
		Length of Gravel Pack 42	
		Length of Perf .Pipe 39	
		style of pipe 6"SDR11	
		Bore diameter 36"well bore	
		Bottom of bore	

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
10:45 AM				1-10	Dirt Msw	Moderate	Dry	90	
11:45 AM				10-20	Msw	Moderate	Dry	100	
12:45 PM				20-30	Msw	High	Dry	105	
1:45 PM				30-40	Msw	High	Dry	114	
2:45 PM				40-50	Msw	High	Dry	121	
3:45 PM				50-60	Msw Depth	High	Damp	133	
4:45 PM				60-70					
5:45 PM				70-80					
				80-90					
				90-100					
Notes									

CLIENT REPRESENTATIVE Detin Moore DATE 4/13/12
NAME & TITLE AEGL SITE SUPERVISOR

Detin Moore 4/13/2012
AEGL SITE SUPERVISOR DATE



Well Log

Lorain 2

DATE: 4/16/2012

101-12-105

Drilling				Well Asbuild					
EW112R WELL NUMBER OR NAME									
112 LINEAR FEET OF DRILLING									
112 LINEAR FEET OF COMPLETION									
LINEAR FEET OF ABANDONMENT									
Time in:		7:00 Time out:		10:25					
Time in:		Time out:							
Weather conditions:		Cloudy		Length of Solid		20		15	
Site conditions:		Dry		Clean on site soil backfill					
Rig hrs:				Bentonite 2 Ft Hydrated				17	
Service:		Raidiator Grease		Soil 1 ft				18	
				Isolation Ring				20	
				above					
				Length of Gravel Pack		94			
				Length of Perf .Pipe		91			
				style of pipe		6"SDR11			
				Bore diameter		36"well bore		111	
				Bottom of bore				112	
Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
10:45 AM				1-10	Dirt Msw	Slight	Dry	88	
11:45 AM				10-20	Msw	Slight	Dry	99	
12:45 PM				20-30	Msw	Slight	Dry	104	
1:45 PM				30-40	Msw	Moderate	Dry	104	
2:45 PM				40-50	Msw	Moderate	Dry	106	
3:45 PM				50-60	Msw	Moderate	Damp	109	
4:45 PM				60-70	Msw	High	Damp	112	
5:45 PM				70-80	Msw	High	Wet	115	
				80-90	Msw	High	wet	115	
				90-100	Msw	High	Damp	113	
				100-110	Msw	High	Dry	115	
				110-112	Msw Depth	High	Damp	119	
Notes									

4/16/2012
DATE

DATE _____

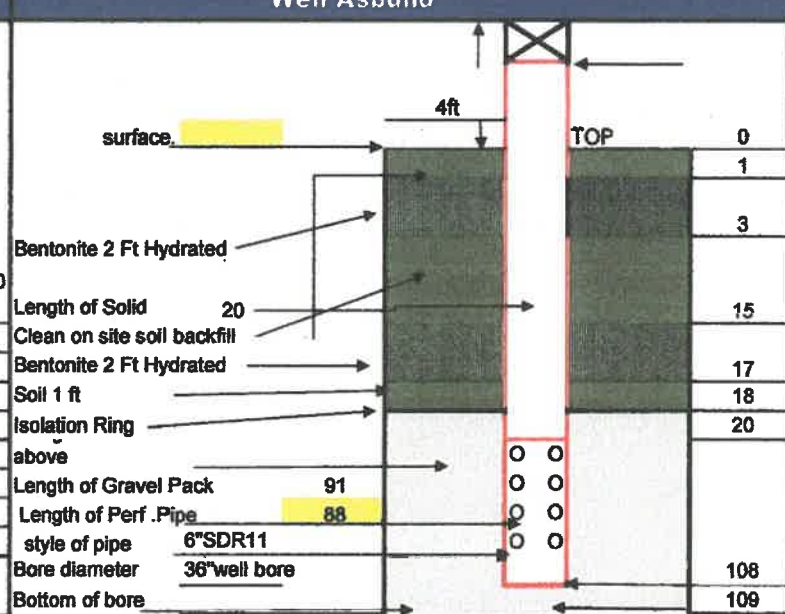
NAME & TITLE

Well Log

PROJECT NAME Lorain 2

DATE: 4/16/2012

PROJECT# 101-12-105

Drilling	Well Asbuild
EW113R WELL NUMBER OR NAME	
109 LINEAR FEET OF DRILLING	
109 LINEAR FEET OF COMPLETION	
LINEAR FEET OF ABANDONMENT	
Time in: <u>10:40</u> Time out: <u>2:50</u>	
Weather conditions: <u>Cloudy</u>	
Site conditions: <u>Dry</u>	
Rig hrs:	
Service: <u>Raidiator</u> <u>Grease</u>	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt Msw	Slight	Dry	86
11:45 AM				10-20	Msw	Slight	Dry	94
12:45 PM				20-30	Msw	Slight	Dry	101
1:45 PM				30-40	Msw	Moderate	Dry	108
2:45 PM				40-50	Msw	Moderate	Dry	110
3:45 PM				50-60	Msw	Moderate	Dry	111
4:45 PM				60-70	Msw	High	Damp	119
5:45 PM				70-80	Msw	High	Wet	121
				80-90	Msw	High	Dry	120
				90-100	Msw	High	Dry	120
				100-109	Msw Depth	High	Dry	122
				110-120				
Notes								

CLIENT REPRESENTATIVE

DATE

Detin Moore
AEGL SITE SUPERVISOR

4/16/2012
DATE

NAME & TITLE



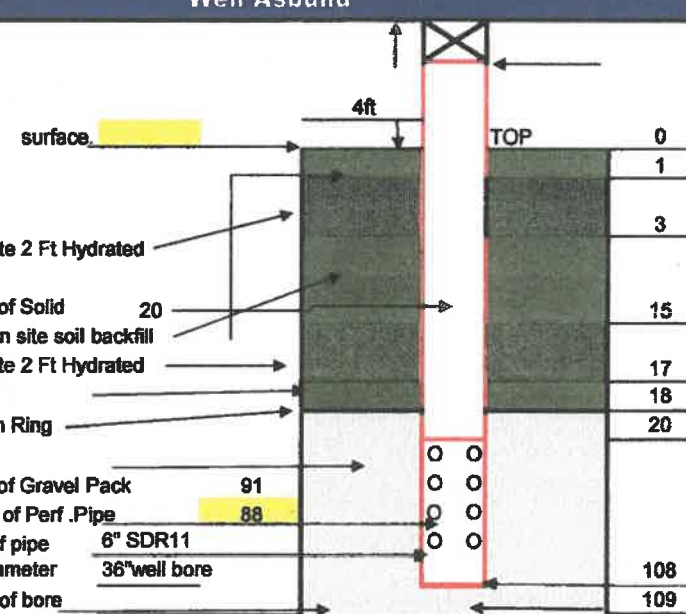
American
Environmental
Group Ltd.

Well Log

PROJECT NAME Lorain 2

DATE: 4/17/2012

PROJECT# 101-12-105

Drilling		Well Asbuild	
EW114R WELL NUMBER OR NAME			
109 LINEAR FEET OF DRILLING			
109 LINEAR FEET OF COMPLETION			
LINEAR FEET OF ABANDONMENT			
Time in: 7:05 Time out: 11:20			
Time in: Time out:			
Weather conditions: Cloudy			
Site conditions: Dry			
Rig hrs:			
Service: Ralidator Grease			
Bentonite 2 Ft Hydrated		20	
Length of Solid		20	
Clean on site soil backfill		15	
Bentonite 2 Ft Hydrated		17	
Soil 1 ft		18	
Isolation Ring		20	
above			
Length of Gravel Pack		91	
Length of Perf .Pipe		88	
style of pipe 6" SDR11			
Bore diameter 36"well bore		108	
Bottom of bore		109	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt Msw	Slight	Dry	89
11:45 AM				10-20	Msw	Slight	Dry	92
12:45 PM				20-30	Msw	Moderate	Dry	100
1:45 PM				30-40	Msw	Moderate	Dry	104
2:45 PM				40-50	Msw	Moderate	Dry	111
3:45 PM				50-60	Msw	Moderate	Damp	117
4:45 PM				60-70	Msw	Moderate	Wet	121
5:45 PM				70-80	Msw	High	Wet	125
				80-90	Msw	High	Dry	129
				90-100	Msw	High	Dry	133
				100-109	Msw Depth	High	Dry	132
				110-120				
Notes								

Detin Moore
AEGL SITE SUPERVISOR

4/17/2012
DATE

CLIENT REPRESENTATIVE

DATE

NAME & TITLE



Well Log

Lorain 2

DATE: 4/17/2012

101-12-105

Drilling		Well Asbuilt	
EW35R2 WELL NUMBER OR NAME			
86 LINEAR FEET OF DRILLING			
85 LINEAR FEET OF COMPLETION			
LINEAR FEET OF ABANDONMENT			
Time in:	12:00 Time out:	2:45	
Time in:	Time out:		
Weather conditions:	Cloudy	Length of Solid	20
Site conditions:	Dry	Clean on site soil backfill	
Rlg hrs:		Bentonite 2 Ft Hydrated	
Service:	Raidiator Grease	Soil 1 ft	
		Isolation Ring	
		above	
		Length of Gravel Pack	67
		Length of Perf .Pipe	64
		style of pipe	6" SDR11
		Bore diameter	36" well bore
		Bottom of bore	
			36 inch well bore

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition		Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt	Msw	Slight	Dry	90
11:45 AM				10-20	Msw		Moderate	Dry	96
12:45 PM				20-30	Msw		Moderate	Dry	102
1:45 PM				30-40	Msw		High	Dry	105
2:45 PM				40-50	Msw		High	Dry	104
3:45 PM				50-60	Msw		High	Dry	121
4:45 PM				60-70	Msw		High	Dry	129
5:45 PM				70-80	Msw		High	Dry	133
				80-85	Msw	Depth	High	Dry	134
				90-100					
				100-110					
				110-120					
Notes									

4/17/2012
DATE

Detin Moore

AEGL SITE SUPERVISOR

4/17/2012

DATE _____

CLIENT REPRESENTATIVE

DATE _____

NAME & TITLE



Well Log

Lorain 2

4/18/2012

101-12-105

Drilling		Well Asbuilt	
EW138R	WELL NUMBER OR NAME		
101	LINEAR FEET OF DRILLING		
101	LINEAR FEET OF COMPLETION		
	LINEAR FEET OF ABANDONMENT		
Time in:	7:15 Time out:	11:00	
Weather conditions:	Cloudy		
Site conditions:	Dry		
Rig hrs:			
Service:	Raidiator Grease		
		Bentonite 2 Ft Hydrated	
		Length of Solid 20	
		Clean on site soil backfill	
		Bentonite 2 Ft Hydrated	
		Soil 1 ft	
		Isolation Ring	
		above	
		Length of Gravel Pack 83	
		Length of Perf .Pipe 80	
		style of pipe 6" SDR11	
		Bore diameter 36" well bore	
		Bottom of bore	
			TOP 0
			1
			3
			15
			17
			18
			20
			100
			101

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition		Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt	Msw	Slight	Dry	92
11:45 AM				10-20	Msw		Moderate	Dry	100
12:45 PM				20-30	Msw		Moderate	Dry	109
1:45 PM				30-40	Msw		High	Dry	125
2:45 PM				40-50	Msw		High	Dry	124
3:45 PM				50-60	Msw		High	Dry	126
4:45 PM				60-70	Msw		High	Damp	131
5:45 PM				70-80	Msw		High	Damp	130
				80-90	Msw		High	Damp	135
				90-100	Msw		High	Dry	134
				100-101	Msw	Depth	High	Dry	135
				110-120					
Notes Bench									

4/18/2012
DATE

DATE _____

NAME & TITLE



Well Log

Lorain 2

DATE: 4/18/2012

101-12-105

[illegible]

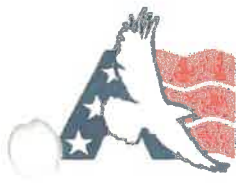
Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition		Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt	Msw	Slight	Dry	93
11:45 AM				10-20	Msw		Moderate	Dry	104
12:45 PM				20-30	Msw		Moderate	Dry	106
1:45 PM				30-40	Msw		High	Damp	111
2:45 PM				40-50	Msw		High	Damp	114
3:45 PM				50-60	Msw	Leachate	High	Wet	122
4:45 PM				60-70	Msw	Leachate	High	Wet	127
5:45 PM				70-80	Sludge	Leachate	High	Wet	129
				80-90	Sludge	Depth	High	Wet	131
				90-100					
				100-110					
				110-120					
Notes									

4/18/2012
DATE

CLIENT REPRESENTATIVE

DATE _____

NAME & TITLE



American
Environmental
Group Ltd.

Well Log

PROJECT NAME

Lorain 2

DATE: 4/19/2012

PROJECT#

101-12-105

Drilling		Well Asbuilt	
TEW5R2 WELL NUMBER OR NAME			
126 LINEAR FEET OF DRILLING			
126 LINEAR FEET OF COMPLETION			
LINEAR FEET OF ABANDONMENT			
Time in: 6:55	Time out: 3:00		
Weather conditions: Cloudy			
Site conditions: Dry			
Rig hrs:			
Service: Raidiator Grease			
Bentonite 2 Ft Hydrated		0	
Length of Solid 20		1	
Clean on site soil backfill		3	
Bentonite 2 Ft Hydrated		15	
Soil 1 ft		17	
Isolation Ring above		18	
Length of Gravel Pack 108		20	
Length of Perf. Pipe 105			
style of pipe 6" SDR11			
Bore diameter 36" well bore		125	
Bottom of bore		126	

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
10:45 AM				1-10	Dirt Msw	Slight	Dry	90	
11:45 AM				10-20	Msw	Slight	Dry	99	
12:45 PM				20-30	Msw	Slight	Dry	103	
1:45 PM				30-40	Msw	High	Damp	109	
2:45 PM				40-50	Msw	Moderate	Dry	111	
3:45 PM				50-60	Msw	Moderate	Dry	119	
4:45 PM				60-70	Msw	Moderate	Dry	120	
5:45 PM				70-80	Msw	High	Dry	124	
				80-90	Msw	High	Wet	122	
				90-100	Sludge	Moderate	Wet	129	
				100-110	Msw	High	Dry	133	
				110-120	Msw	High	Dry	132	
Notes				120-126	Msw Depth	Moderate	Dry	132	

Detin Moore

AEGL SITE SUPERVISOR

4/19/2012

DATE

CLIENT REPRESENTATIVE

DATE

NAME & TITLE



Well Log

Lorain 2

DATE: 4/20/2012

101-12-105

[illegible][illegible]

DATE _____

4/20/2012

DATE _____

NAME & TITLE



Well Log

Lorain 2

DATE: 4/20/2012

101-12-105

Drilling		Well Asbuilt	
EW49R2	WELL NUMBER OR NAME		
58	LINEAR FEET OF DRILLING		
58	LINEAR FEET OF COMPLETION		
	LINEAR FEET OF ABANDONMENT		
Time in:	12:15 Time out:	1:35	
Weather conditions:	Cloudy	Length of Solid	20
Site conditions:	Dry	Clean on site soil backfill	
Rig hrs:		Bentonite 2 Ft Hydrated	
Service:	Raidiator Grease	Soil 1 ft	
		Isolation Ring	
		above	
		Length of Gravel Pack	40
		Length of Perf .Pipe	37
		style of pipe	6" SDR11
		Bore diameter	36" well bore
		Bottom of bore	

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
10:45 AM				1-10	Dirt Msw	Slight	Dry	92	
11:45 AM				10-20	Msw	Slight	Dry	97	
12:45 PM				20-30	Msw	Slight	Dry	100	
1:45 PM				30-40	Msw	Slight	Dry	104	
2:45 PM				40-50	Msw	High	Dry	105	
3:45 PM				50-58	Msw Depth	High	Dry	104	
4:45 PM				60-70					
5:45 PM				70-80					
				80-90					
				90-100					
				100-110					
				110-120					
Notes				120-130					

DATE _____

4/20/2012
DATE

NAME & TITLE

Well Log

PROJECT NAME Lorain 2

DATE: 4/24/2012

PROJECT# 101-12-105

Drilling	Well Asbuild
EW17R3 WELL NUMBER OR NAME	
123 LINEAR FEET OF DRILLING	
123 LINEAR FEET OF COMPLETION	
LINEAR FEET OF ABANDONMENT	
Time in: <u>6:35</u> Time out: <u>11:05</u>	
Weather conditions: <u>Cloudy</u>	
Site conditions: <u>Dry</u>	
Rig hrs:	
Service: <u>Radiator</u> <u>Grease</u>	
	Bentonite 2 Ft Hydrated Length of Solid <u>20</u> Clean on site soil backfill Bentonite 2 Ft Hydrated Soil 1 ft Isolation Ring above Length of Gravel Pack <u>105</u> Length of Perf .Pipe <u>102</u> style of pipe <u>8\"SDR11</u> Bore diameter <u>36\"well bore</u> Bottom of bore

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt Msw	Slight	Dry	75
11:45 AM				10-20	Msw	High	Dry	88
12:45 PM				20-30	Msw	High	Dry	102
1:45 PM				30-40	Msw	High	Dry	102
2:45 PM				40-50	Msw	High	Dry	109
3:45 PM				50-60	Msw	High	Dry	113
4:45 PM				60-70	Msw	High	Dry	117
5:45 PM				70-80	Msw	High	Dry	122
				80-90	Msw	Slight	Dry	132
				90-100	Msw	Slight	Dry	134
				100-110	Msw	High	Dry	135
				110-120	Msw	High	Dry	135
Notes				120-123	Msw Depth	High	Dry	138

 4/24/12
 CLIENT REPRESENTATIVE DATE
Detin Moore CDR. Swamp Coldwell
 NAME & TITLE

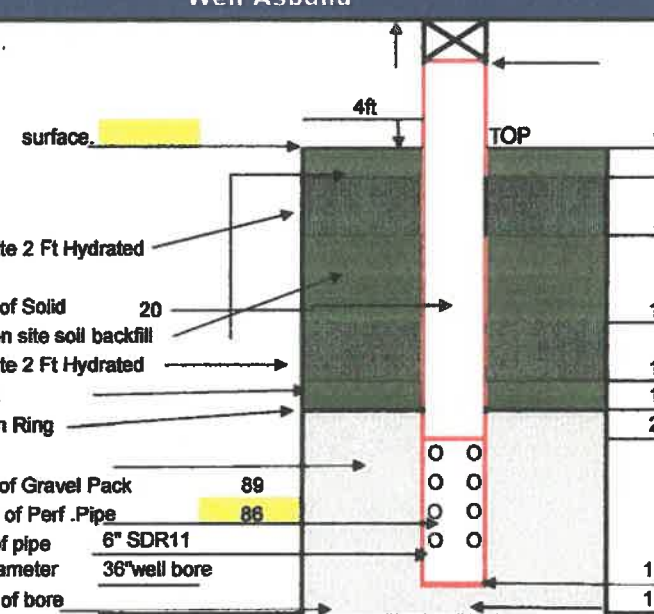
Detin Moore 4/24/2012
 AEGL SITE SUPERVISOR DATE

Well Log

PROJECT NAME Lorain 2

DATE: 4/24/2012

PROJECT# 101-12-105

Drilling	Well Asbuild											
EW117R WELL NUMBER OR NAME												
107 LINEAR FEET OF DRILLING												
107 LINEAR FEET OF COMPLETION												
LINEAR FEET OF ABANDONMENT												
Time in: <u>11:35</u> Time out: <u>2:15</u>												
Weather conditions: <u>Cloudy</u>												
Site conditions: <u>Dry</u>												
Rig hrs:												
Service: <u>Radiator</u> <u>Grease</u>												
	<table border="1"> <tr><td>0</td></tr> <tr><td>1</td></tr> <tr><td>3</td></tr> <tr><td>15</td></tr> <tr><td>17</td></tr> <tr><td>18</td></tr> <tr><td>20</td></tr> <tr><td>89</td></tr> <tr><td>86</td></tr> <tr><td>106</td></tr> <tr><td>107</td></tr> </table>	0	1	3	15	17	18	20	89	86	106	107
0												
1												
3												
15												
17												
18												
20												
89												
86												
106												
107												

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
10:45 AM				1-10	Dirt Leachate	Slight	Wet	79	
11:45 AM				10-20	Msw Leachate	High	Damp	91	
12:45 PM				20-30	Dirt	High	Dry	100	
1:45 PM				30-40	Msw	High	Dry	105	
2:45 PM				40-50	Msw	High	Dry	110	
3:45 PM				50-60	Msw	High	Dry	115	
4:45 PM				60-70	Msw	High	Dry	122	
5:45 PM				70-80	Msw	High	Dry	126	
				80-90	Msw	Slight	Dry	131	
				90-100	Msw	Slight	Dry	135	
				100-107	Msw Depth	High	Dry	134	
				110-120					
Notes				120-130					

Detin Moore 4/24/12
CLIENT REPRESENTATIVE DATE
Detin Moore CDR Brown & Caldwell
NAME & TITLE

Detin Moore 4/24/2012
AEGL SITE SUPERVISOR DATE



DATE: 4/25/2012

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition		Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt	Msw	High	Dry	84
11:45 AM				10-20	Msw		High	Dry	99
12:45 PM				20-30	Msw		Slight	Dry	106
1:45 PM				30-40	Msw		Slight	Dry	111
2:45 PM				40-50	Msw		Slight	Dry	115
3:45 PM				50-58	Msw	Depth	Slight	Dry	128
4:45 PM				60-70					
5:45 PM				70-80					
				80-90					
				90-100					
				100-110					
				110-120					
Notes				120-130					

CLIENT REPRESENTATIVE 4/25/12
DATE
NAME & TITLE Tyrot A Todio CAR Brown # (566) 11

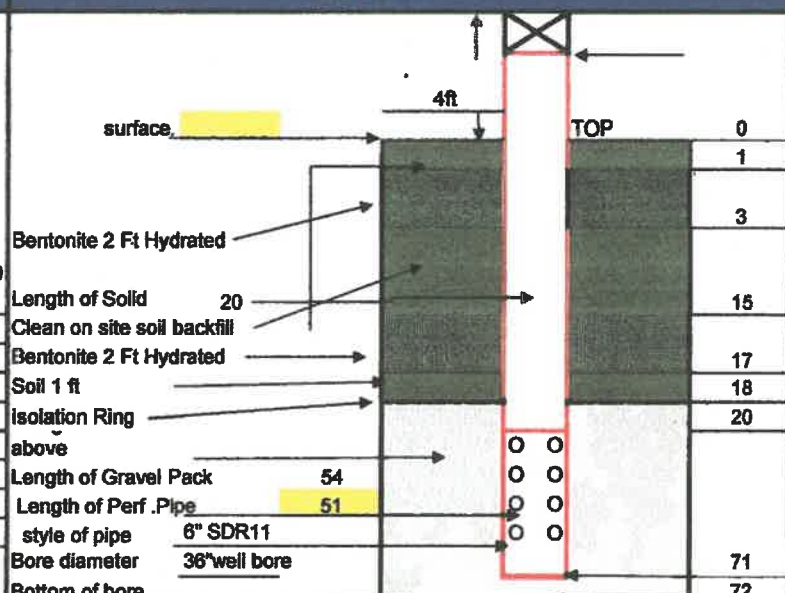
Detin Moore	4/25/2012
AEGL SITE SUPERVISOR	DATE

Well Log

PROJECT NAME Lorain 2

DATE: 4/25/2012

PROJECT# 101-12-105

Drilling	Well Asbuilt
EW121R WELL NUMBER OR NAME	
72 LINEAR FEET OF DRILLING	
72 LINEAR FEET OF COMPLETION	
LINEAR FEET OF ABANDONMENT	
Time in: 8:20 Time out: 10:20	
Weather conditions: Cloudy	
Site conditions: Dry	
Rig hrs:	
Service: Raidiator Grease	

Monitoring Log				Well Boring Log				
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt Msw	Slight	Dry	92
11:45 AM				10-20	Msw	Moderate	Dry	100
12:45 PM				20-30	Msw	High	Dry	109
1:45 PM				30-40	Msw	High	Dry	112
2:45 PM				40-50	Msw	High	Dry	114
3:45 PM				50-60	Msw	High	Dry	121
4:45 PM				60-70	Msw	High	Dry	128
5:45 PM				70-72	Msw Depth	High	Dry	132
				80-90				
				90-100				
				100-110				
				110-120				
Notes				120-130				

Detin Moore 4/25/12
CLIENT REPRESENTATIVE DATE
Detin Moore CEA Brown & White
NAME & TITLE

Detin Moore 4/25/2012
AEGL SITE SUPERVISOR DATE



Well Log

PROJECT NAME Lorain 2

DATE: 4/25/2012

PROJECT# 101-12-105[illegible]

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition		Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt	Msw	Slight	Dry	88
11:45 AM				10-20	Msw		Slight	Dry	101
12:45 PM				20-30	Msw		Moderate	Dry	103
1:45 PM				30-40	Msw		Moderate	Dry	102
2:45 PM				40-50	Msw		High	Damp	115
3:45 PM				50-60	Sludge		High	Wet	118
4:45 PM				60-70	Msw		High	Dry	120
5:45 PM				70-80	Sludge		High	Wet	123
				80-90	Sludge		High	Wet	122
				90-100	Msw		High	Damp	134
				100-109	Msw	Depth	High	Wet	134
				110-120					
Notes				120-130					

Detin Moore	4/25/2012
AEGL SITE SUPERVISOR	DATE

Detin Moore	4/25/2012
AEGL SITE SUPERVISOR	DATE



Well Log

PROJECT# 101-12-105

DATE: 4/26/2012

Drilling			Well Asbuilt		
EW168	WELL NUMBER OR NAME				
98	LINEAR FEET OF DRILLING				
98	LINEAR FEET OF COMPLETION				
	LINEAR FEET OF ABANDONMENT				
Time in:	10:45	Time out:	1:25		
Weather conditions:	Cloudy		Length of Solid	20	15
Site conditions:	Dry		Clean on site soil backfill		
Rig hrs:			Bentonite 2 Ft Hydrated		17
Service:	Raidiator	Grease	Soil 1 ft		18
			Isolation Ring		20
			above		
			Length of Gravel Pack	80	
			Length of Perf .Pipe	77	
			style of pipe	6" SDR11	
			Bore diameter	36"well bore	97
			Bottom of bore		98

Monitoring Log				Well Boring Log					
Time	OXYGEN	H ₂ S	LEL / CO	Depth	Composition		Degree of Decomp.	Degree of Moisture	Temp
10:45 AM				1-10	Dirt	Msw	Slight	Dry	81
11:45 AM				10-20	Msw		Moderate	Dry	94
12:45 PM				20-30	Msw		High	Dry	100
1:45 PM				30-40	Msw		High	Dry	103
2:45 PM				40-50	Msw		High	Dry	104
3:45 PM				50-60	Msw		High	Dry	109
4:45 PM				60-70	Msw		High	Damp	112
5:45 PM				70-80	Msw		High	Dry	117
				80-90	Msw		High	Damp	122
				90-98	Msw	Depth	Moderate	Dry	129
				100-110					
				110-120					
Notes				120-130					

Detin Moore	4/26/2012
AEGL SITE SUPERVISOR	DATE

CLIENT REPRESENTATIVE 4/26/12 DATE
 NAME & TITLE James A. Todd, OGA Brown + Caldwell



American
Environmental
Group Ltd.

Well Log

PROJECT NAME Lorain 2

DATE: 4/26/2012

PROJECT# 101-12-105

Drilling	Well Asbuild
EW101R2 WELL NUMBER OR NAME	
100 LINEAR FEET OF DRILLING	
100 LINEAR FEET OF COMPLETION	
LINEAR FEET OF ABANDONMENT	
Time in: <u>6:45</u> Time out: <u>9:55</u>	
Weather conditions: <u>Cloudy</u>	
Site conditions: <u>Dry</u>	
Rig hrs:	
Service: <u>Raidiator</u> <u>Grease</u>	
	Bentonite 2 Ft Hydrated Length of Solid <u>20</u> Clean on site soil backfill Bentonite 2 Ft Hydrated Soil 1 ft Isolation Ring above Length of Gravel Pack <u>82</u> Length of Perf .Pipe <u>79</u> style of pipe <u>6" SDR11</u> Bore diameter <u>36"well bore</u> Bottom of bore

Monitoring Log				Well Boring Log					
Time	OXYGEN	H2S	LEL / CO	Depth	Composition	Degree of Decomp.	Degree of Moisture	Temp	
10:45 AM				1-10	Dirt Msw	Slight	Dry	82	
11:45 AM				10-20	Msw	Slight	Dry	99	
12:45 PM				20-30	Msw	Moderate	Dry	103	
1:45 PM				30-40	Msw	Moderate	Dry	107	
2:45 PM				40-50	Msw	High	Dry	112	
3:45 PM				50-60	Msw	High	Dry	118	
4:45 PM				60-70	Msw	High	Dry	121	
5:45 PM				70-80	Msw	High	Dry	123	
				80-90	Msw	High	Dry	127	
				90-100	Msw Depth	High	Dry	132	
				100-110					
				110-120					
Notes				120-130					

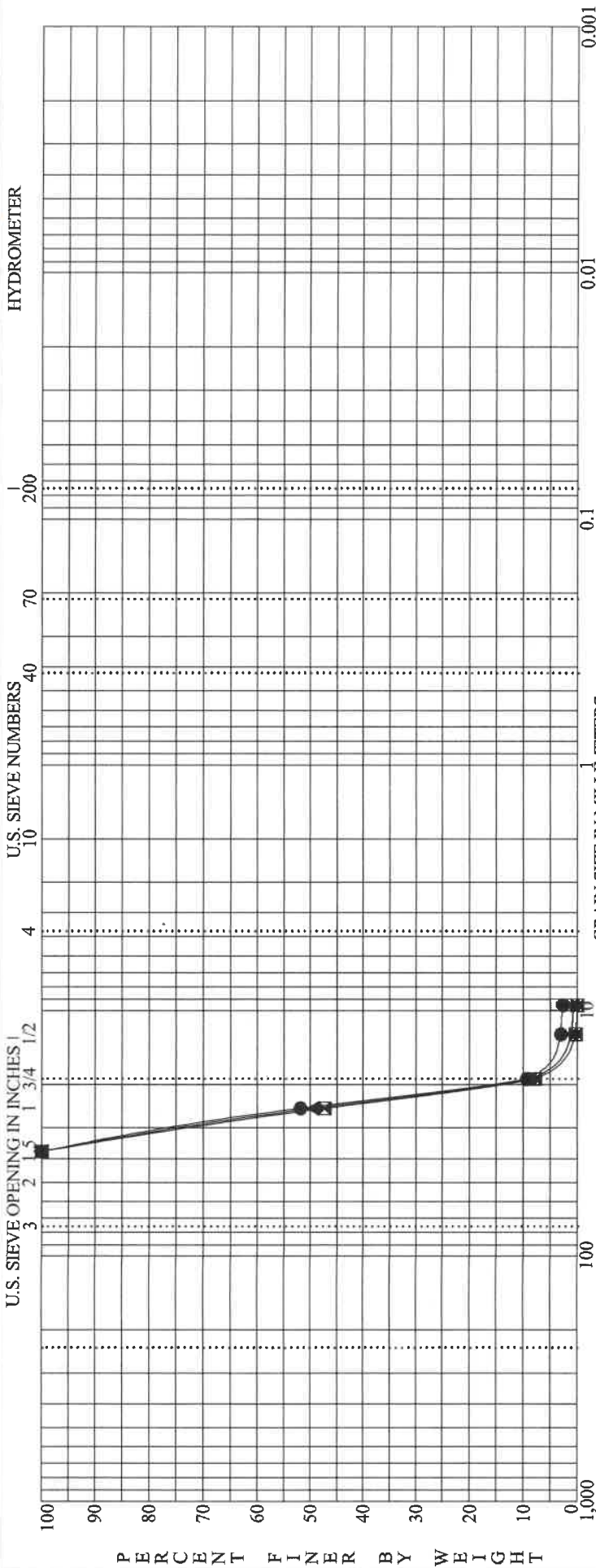
CLIENT REPRESENTATIVE
 NAME & TITLE

4/26/12
 DATE

Detin Moore
 AEGL SITE SUPERVISOR

4/26/2012
 DATE

Appendix F: No. 4 Stone Laboratory Results



SILT OR CLAY														
BOULDERS		COBBLES	GRAVEL			SAND			SILT OR CLAY					
			coarse	fine		coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu
Specimen Identification - Depth														
●	#4 STONE	As Received	#4 STONE											
☒	#4 STONE	Before pH 4												
▲	#4 STONE	After pH 4	%CARBONATE RESIDUE CONTENT = 0.27											
Specimen Identification - Depth														
●	#4 STONE	As Received	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay			
☒	#4 STONE	Before pH 4	37.5000	35.9536	26.7742	24.7019	19.0832				0.923 1.403			
▲	#4 STONE	After pH 4	37.5000	36.0862	27.5745	25.5345	19.2869				0.924 1.430			
			37.5000	36.0268	27.2136	25.1174	19.1660				0.922 1.420			

ASTM D422	GRADATION CURVE		PROJECT			
			LORAIN COUNTY II LANDFILL			
			OBERLIN, OHIO			
JOB NO.			DATE			
011.11442.014 - B & C Project Number 140980			10/10/11			

Appendix G: Geosynthetics Test Results

Geomembrane Trial Weld Summary

Geomembrane Repair Summary



CQA Monitor:

[illegible]

Geomembrane Repair Summary

Project Name: Lorain County II Landfill: 2012 GCCS Phase 1 Construction

CQA Monitor: Janet Todia

Project Number: 142487.102

Repair Number	Date	Time	Seam/ Panel	Operator/ Machine	Repair Location		Description	Size of Repair	Vacuum Test Date	Vacuum Test Results (P/F)
					North	East				
EW127R2	4/25/12	0900	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW114R	4/25/12	1100	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW113R	4/25/12	1200	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW112R	4/25/12	1300	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW108R	4/25/12	1400	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW31R	4/25/12	1510	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW35R2	4/25/12	1605	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
TEW5R	4/25/12	1703	N/A	Thongdarong/5806	N/A	N/A	Boot and cap repair	4' x 4'	4/25/12	P
EW5R2	4/28/12	1040	N/A	Thongdarong/4337	N/A	N/A	Boot and cap repair	4' x 4'	4/28/12	P
EW101R2	4/28/12	1110	N/A	Thongdarong/4337	N/A	N/A	Boot and cap repair	4' x 4'	4/28/12	P
EW121R	5/4/12	1400	N/A	Ruiz/5806	N/A	N/A	Boot and cap repair	4' x 4'	5/4/12	P
EW87R2	5/4/12	1530	N/A	Ruiz/5806	N/A	N/A	Boot and cap repair	4' x 4'	5/4/12	P
Liner patch	5/15/12	1030	N/A	Ruiz/5806	N/A	N/A	Liner patch repair 18" riser	6' x 6'	5/15/12	P

RECEIVED

SEP 28 2012

OHIO EPA NEDO

Appendix H: Air Monitoring Results

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: Phase 1Lorain II 2012

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia

(Print and Sign):

Janet A Todia

Date:

4/13/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

VRAE4 gas meterWas instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0805	drill RW31R	—	—	20.9	0	0	0
0820	"	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	drill W108R	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1115	"	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1145	"	—	—	20.9	0	0	0
1200	"	—	—	20.9	0	0	0
1215	"	—	—	20.9	0	0	0
1230	"	—	—	20.9	0	0	0
1245	"	—	—	20.9	0	0	0
1300	"	—	—	20.9	0	0	0
1315	finish RW31R	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

[illegible]

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: Phase 1 Lorain II 2012

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todis
(Print and Sign): *Janet A Todis*

Date: 4/16/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

V Rae

4 gas meter

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Windy ~ 30 mph - 50 mph gusts

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0730	drill EW 112R	—	—	20.9	0	0	0
0745	"	—	—	20.9	0	0	0
0800	"	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	drill EW 113R	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1115	"	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1145	"	—	—	20.9	0	0	0
1200	"	—	—	20.9	0	0	0
1215	"	—	—	20.9	0	0	0
1230	"	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase 3~~ Phase I 2012

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia
(Print and Sign): *Janet Todia*

Date: 4/17/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

VRAE

Hgas meter

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0800	drill RW 114R	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	" (set RW 114R)	—	—	20.9	0	0	0
1115	"	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1245	drill RW 35R2	—	—	20.9	0	0	0
1300	"	—	—	20.9	0	0	0
1315	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0

Project No: ~~Phase 3~~ Phase I 2012

Date: 4/17/2

Model:

Hydrometer

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

[illegible]

Project No: ~~Phase 3~~ *Phase I*

Date: 4/18/12

Model:

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0745	Well RW138R	—	—	20.9	0	0	0
0800	l)	—	—	20.9	0	0	0
0815	l)	—	—	20.9	0	0	0
0830	l)	—	—	20.9	0	0	0
0845	l)	—	—	20.9	0	0	0
0900	l)	—	—	20.9	0	0	0
1000	l)	—	—	20.9	0	0	0
1400	Well RW127R2	—	—	20.9	0	0	0
1415	l)	—	—	20.9	0	0	0
1430	l)	—	—	20.9	0	0	0
1445	l)	—	—	20.9	0	0	0
1500	l)	—	—	20.9	0	0	0
1515	l)	—	—	20.9	0	0	0
1530	l)	—	—	20.9	0	0	0
1545	l)	—	—	20.9	0	0	0
1600	l)	—	—	20.9	0	0	0
1615	l)	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: Phase Phase I

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia
(Print and Sign): Janet A TodiaDate: 4/19/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

VPro4 gas meterWas instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0745	drill RW5R2	—	—	20.9	0	0	0
0800	"	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1100	trenching dir + force main BW164 to BW160	—	—	20.9	0	0	0
1300	finish well set RW5R2	—	—	20.9	0	0	0
1315	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill		Project No: Phase II <i>Lorain II Phase I</i>
Project/Site Location: Oberlin, Ohio		
Employee Performing Air Monitoring: Janet Todia (Print and Sign): <i>Janet A Todia</i>		Date: <i>4/20/12</i>

Instrument(s)

Manufacturer:	Model:	Manufacturer:	Model:
VRoe	4 gas meters		

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

[illegible]

UQ 15 JUL 2010

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: Phase I 2012

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia

(Print and Sign): Janet A TodiaDate: 4/24/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

VRAC 4 gas meterWas instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0745	drill BW17R3	—	—	20.9	0	0	0
0800	()	—	—	20.9	0	0	0
0815	()	—	—	20.9	0	0	0
0830	()	—	—	20.9	0	0	0
0845	()	—	—	20.9	0	0	0
0900	()	—	—	20.9	0	0	0
1000	()	—	—	20.9	0	0	0
1030	()	—	—	20.9	0	0	0
1045	()	—	—	20.9	0	0	0
1100	()	—	—	20.9	0	0	0
1130	drill BW117R	—	—	20.9	0	0	0
1215	()	—	—	20.9	0	0	0
1330	()	—	—	20.9	0	0	0
1445	()	—	—	20.9	0	0	0
1500	()	—	—	20.9	0	0	0
1600	()	—	—	20.9	0	0	0
1615	()	—	—	20.9	0	0	0
1730	complete tie in lateral BW121R2	—	—	20.9	0	0	0
1800	complete tie in lateral	—	—	20.9	0	0	0
1815	BW108R	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill		Project No: Phase <u>I</u> 2012					
Project/Site Location: Oberlin, Ohio							
Employee Performing Air Monitoring: Janet Tolia (Print and Sign): <i>Janet Tolia</i>		Date: 4/25/12					
Instrument(s)							
Manufacturer: <i>Vloc</i>	Model: <i>H gas meter</i>	Manufacturer:	Model:				
Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No							
Remarks: <i>No trending in trash today</i>							
Monitoring Data							
Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0730	drill EW87R2	—	—	20.9	0	0	0
0745	"	—	—	20.9	0	0	0
0800	"	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
1000	drill EW121R	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1300	drill EW5R2	—	—	20.9	0	0	0
1315	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1430	"	—	—	20.9	0	0	0
1445	"	—	—	20.9	0	0	0
1500	"	—	—	20.9	0	0	0
1515	"	—	—	20.9	0	0	0

[illegible]

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase I~~ Phase I 2012

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia

(Print and Sign):

Janet A Todia

Date:

4/27/12

Instrument(s)

Manufacturer:

Vlae

Model:

4 gas meter

Manufacturer:

Model:

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0900	exhaust tie in BW168	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
1000	115R air + force main tie in	—	—	20.9	0	0	0
1008	trench excavation	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1530	air + force main trench	—	—	20.9	0	0	0
1540	129R to 48R	—	—	20.9	0	0	0
1545	"	—	—	20.9	0	0	0
1600	"	—	—	20.9	0	0	0
1615	"	—	—	20.9	0	0	0
1630	"	—	—	20.9	0	0	0
1700	BW148 tie in	—	—	20.9	0	0	0
1715	"	—	—	20.9	0	0	0
1730	"	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase 0~~ Phase 1

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: ~~James Foster~~
(Print and Sign):

B.N. Foster B.N. Foster

Date: 04/20/12 (Saturday)

Instrument(s)

Manufacturer:

RAE

Model:

VRAE

Manufacturer:

Model:

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0700	Safety Mtg						
0715	↓						
0730	Calibrating Equipment						
0745	↓						
0800							
0815	Air + FM Road Crossing	N/A	N/A	20.9	0.0	0.0	0.0
0830	↓						
0845							
0900							
0915	↓						
0930	EW-SR2 Boot/Cap Repair						
0945	↓						
1000							
1015	Air + FM Road Crossing						
1030	↓						
1045	EW-SR2 Boot/Cap Repair						
1100	EW-101R2 Boot/Cap Repair						
1115	↓						
1130							
1145	Air + FM Road Crossing						
1200	↓						

WC-19 DEV 06/2006

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase I~~ Phase II

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia
(Print and Sign): *Janet A Todia*Date: 5/2/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

*VRAE**4 qps meter*Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0800	RW40R air force main	—	—	20.9	0	0	0
0815	Excavation	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
1100	RW146R air force main	—	—	20.9	0	0	0
1115	Excavation	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1145	"	—	—	20.9	0	0	0
1200	"	—	—	20.9	0	0	0
1215	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1430	"	—	—	20.9	0	0	0
1445	"	—	—	20.9	0	0	0
1500	"	—	—	20.9	0	0	0
1515	"	—	—	20.9	0	0	0
1530	"	—	—	20.9	0	0	0
1545	"	—	—	20.9	0	0	0
1600	"	—	—	20.9	0	0	0

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase 5~~ Phase I

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia
(Print and Sign): *Janet A Todia*Date: 5/3/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

*V Rae**4 gas meter*Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
<i>0815</i>	<i>excavation of eastern 18"x24" tie in</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
		<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>0830</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>0845</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>0900</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>0915</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1000</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1020</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1100</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1330</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1345</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1400</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1415</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1430</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1500</i>	<i>excavation of western 18"x24" tie in</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1530</i>	<i>tie in</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1545</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1600</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1615</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1745</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>1800</i>	<i>11</i>	<i>—</i>	<i>—</i>	<i>20.9</i>	<i>0</i>	<i>0</i>	<i>0</i>

Instructions: Complete this form immediately prior to project start.

[illegible]

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase 5~~ Phase I 2012

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia
(Print and Sign): *Janet A Todia*

Date: 5/4/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

VRAE

H gas meter

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0900	excavation 18" east side	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1315	bore seal repair 121R	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1430	"	—	—	20.9	0	0	0
1445	bore seal repair 121	—	—	20.9	0	0	0
1500	"	—	—	20.9	0	0	0
1515	"	—	—	20.9	0	0	0
1630	"	—	—	20.9	0	0	0
1645	bore seal repair 87R2	—	—	20.9	0	0	0
1700	"	—	—	20.9	0	0	0
1715	"	—	—	20.9	0	0	0
1730	"	—	—	20.9	0	0	0

Project No: ~~Phase 2~~ *Phase I* 2012

Date: 5/4/12

4925 meter

LE 40 000 / 00000000

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase 3~~ Phase I 20VZ

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todia
(Print and Sign): *Janet A Todia*

Date: 5/10/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

*V Rae**H gas meter*Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O ₂	%LEL	H ₂ S	CO
0745	ALONGSIDE 18" HEADER (WEST LEG)	—	—	20.9	0	0	0
0800	"	—	—	20.9	0	0	0
0950	"	—	—	20.9	0	0	0
1020	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1115	"	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0
1545	"	—	—	20.9	0	0	0
1600	"	—	—	20.9	0	0	0
1615	"	—	—	20.9	0	0	0
1630	"	—	—	20.9	0	0	0
1645	"	—	—	20.9	0	0	0
1700	"	—	—	20.9	0	0	0
1715	"	—	—	20.9	0	0	0
1730	"	—	—	20.9	0	0	0

UC 40 DEU/ AC/0000

Instructions: Complete this form immediately prior to project start.

Name of Project/Site: Lorain County II Landfill

Project No: ~~Phase 2~~ Phase I

Project/Site Location: Oberlin, Ohio

Employee Performing Air Monitoring: Janet Todla
(Print and Sign): *Janet Todla*

Date: 5/11/12

Instrument(s)

Manufacturer:

Model:

Manufacturer:

Model:

VRoe

4 gas meters

Was instrument(s) calibrated per manufacturer's instructions? ☒ Yes ☐ No

Remarks:

Monitoring Data

Time	Location and Activity	P/FID (ppm)	Mini- RAM (mg/m ³)	Multi-Gas Detection			
				O2	%LEL	H2S	CO
0745	Area east 18" heady	—	—	20.9	0	0	0
0800	"	—	—	20.9	0	0	0
0815	"	—	—	20.9	0	0	0
0830	"	—	—	20.9	0	0	0
0845	"	—	—	20.9	0	0	0
0900	"	—	—	20.9	0	0	0
0915	"	—	—	20.9	0	0	0
0930	"	—	—	20.9	0	0	0
0945	"	—	—	20.9	0	0	0
1000	"	—	—	20.9	0	0	0
1015	"	—	—	20.9	0	0	0
1030	"	—	—	20.9	0	0	0
1045	"	—	—	20.9	0	0	0
1100	"	—	—	20.9	0	0	0
1115	"	—	—	20.9	0	0	0
1130	"	—	—	20.9	0	0	0
1145	"	—	—	20.9	0	0	0
1330	"	—	—	20.9	0	0	0
1345	"	—	—	20.9	0	0	0
1400	"	—	—	20.9	0	0	0
1415	"	—	—	20.9	0	0	0

Project No: ~~Phase 2~~ *Phase I*

Date: 5/11/12

Model:

4. gas meter

לפי 40 חזק / 60/10000

Project No: Phase 3 *Phase I*

Date: 5/15/12

Model:

[illegible]

Appendix I: Pipeline Pressure Test Results

2012 GCCS - Phase 1 Construction Certification Report - Pipe Pressure Test Results

Date	HDPE Pipe Description	Length (feet)	Pressure (psi)	Time (hours)	Result (Pass/Fail)	Retest (Yes/No)
4/19/12-4/20/12	6" SDR17	200	30	18	Pass	No
	6" SDR17	200	30	18	Pass	No
	6" SDR17	200	30	18	Pass	No
4/23/12-4/24/12	2" SDR09 (air)	550	100	16	Pass	No
	2" SDR11 (forcemain)	420	60	16	Pass	No
	2" x 4" dual contained	130	60 x 50	16.5	Pass	No
	2" SDR09 (air)	130	100	16.5	Pass	No
	6" SDR17	200	30	14.5	Pass	No
	6" SDR17	200	30	14.5	Pass	No
	6" SDR17	200	30	14.5	Pass	No
4/24/2012	6" SDR17	200	30	4	Pass	No
	2" SDR09 (air)	200	100	5.5	Pass	No
	2" x 4" dual contained	200	60 x 50	4	Pass	No
	6" SDR17	200	30	4	Pass	No
	2" x 4" dual contained	200	60 x 50	4	Pass	No
	2" SDR09 (air)	200	100	4	Pass	No
	6" SDR17	200	30	4	Pass	No
	6" SDR17	140	30	4	Pass	No
4/25/2012	2" SDR09 (air)	50	100	4	Pass	No
	2" SDR11 (forcemain)	50	60	4	Pass	No
	2" SDR09 (air)	65	100	4	Pass	No
	2" SDR11 (forcemain)	65	60	4	Pass	No
4/26/2012	2" x 4" dual contained (run from EW122 to EW141 tested in place)	400	60 x 50	4	Pass	No
	6" SDR17	120	25.5	4	Pass	No
	6" SDR17	100	30	4	Pass	No
	6" SDR17	160	30	4	Pass	No
4/26/12 - 4/27/12	2" SDR09 (air)	200	100	15	Pass	No
4/26/12 - 4/27/12	2" SDR11 (forcemain)	200	50	15	Pass	No
4/27/2012	2" SDR09 (air)	500	100	4	Pass	No
	2" SDR11 (forcemain)	500	50	4	Pass	No
	2" SDR11 (forcemain)	300	50	4	Pass	No
4/30/2012	2" SDR09 (air)	500	100	4	Pass	No
	2" SDR09 (air)	200	100	4	Pass	No
	2" SDR11 (forcemain)	200	50	4	Pass	No
5/7/2012	18" SDR17 (entire west leg)	200	10	4	Pass	No
5/14/2012	18" SDR17 (entire east leg)	800	10	4	Pass	No