Environmental Consultants
and Contractors

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SCS ENGINEERS, PC

File No. 02209366.04
August 25, 2014

RECEIVED
AUG 27 2014
SOLID WASTE SECTION

Mr. Ervin Lane, Hydrogeologist
North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
217 West Jones Street
Raleigh, North Carolina 27603

Subject: **Closed Anson County (Lilesville) Landfill - Facility Permit Number 04-01**
Notification of Modification to Existing Methane Gas Collection System

Dear Mr. Lane:

Anson County has elected to modify an existing methane gas collection system located on the closed Anson County Landfill, i.e. Lilesville Landfill. This landfill was closed with a final cover system and subject to post-closure conditions on January 18, 1996. Based on information available, the existing methane gas collection system was originally installed in September of 1997 and expanded in October of 1999 to avert the migration of methane gas from the landfill to an adjacent Gum Springs Baptist Church property. This modification to the existing methane gas collection system will provide a long term safeguard for inhibiting possible methane migration from the landfill onto the adjacent property. The existing system consists of a trench with a perforated pipe and stone connected to a blower to provide negative pressure to the trench. The trench is located along the landfill and church property lines. A 1999 drawing showing the layout of the trench and blower is included as an attachment. To monitor the operation and effectiveness of the system, subsurface methane gas monitoring probes were installed on the landfill and adjacent property line side of the system. The probes were installed when the system was installed.

At Anson County's direction SCS Engineers, PC (SCS) began monitoring on April of 2013 the operation of the existing methane gas collection system, on a quarterly basis. During the monitoring, SCS Engineers personnel operated and monitored the effectiveness of the existing methane gas collection system using the existing subsurface methane gas monitoring probes and blower data. For safety and security reasons operation of the blower only occurs when a County representative, SCS personnel or other qualified representative is on site due to the landfill being closed and unstaffed.

During the operation and monitoring it was concluded by the County and SCS that the existing methane gas collection system is not operating to its original design condition. Based on this conclusion and the need for a long-term safeguard against the possible migration of methane gas to the adjacent church property SCS recommended the installation of a passive methane gas collection system along the landfill and church property lines. The passive system will be less labor intensive and replace the existing blower/trench system as a methane gas control mechanism for the landfill.

MODIFICATION DESCRIPTION

The passive methane gas collection system consists of a 2 to 3-foot wide trench excavated to a minimum depth of 10-feet below the existing ground surface. The trench depth is based on being in close proximity to the groundwater surface. Measured groundwater depths from the last groundwater monitoring event at the landfill in April 2013 were used. The trench will be fitted with a perforated horizontal pipe and washed stone with solid vertical pipes spaced approximately every 150 linear feet. Turbine ventilators are connected to the vertical pipes aboveground to assist in exhausting methane gas collected within the trench to the atmosphere. The system will be low maintenance and not labor intensive considering the landfill is closed and unstaffed and should provide a long term safeguard from possible methane migration. The layout and details for the passive methane gas collection system are depicted on enclosed **Figures 1 and 2**.

Installation of the passive methane gas collection system is expected to be complete by September 2014. At the conclusion of the system installation SCS will provide a document and drawings to NCDENR outlining the installation.

If you should require further information concerning the modification or this notification please contact myself at 704-504-3107.

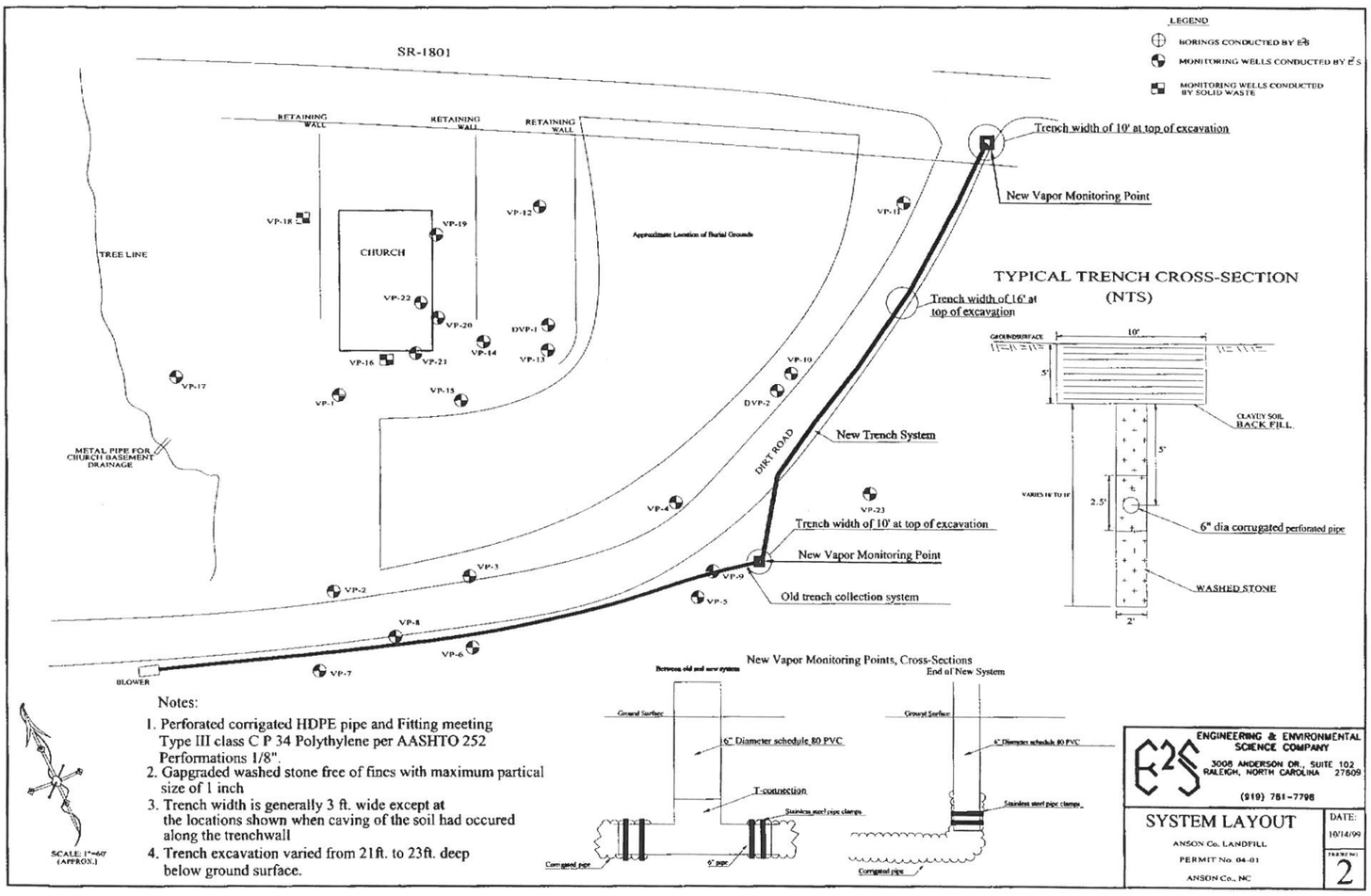
Sincerely,

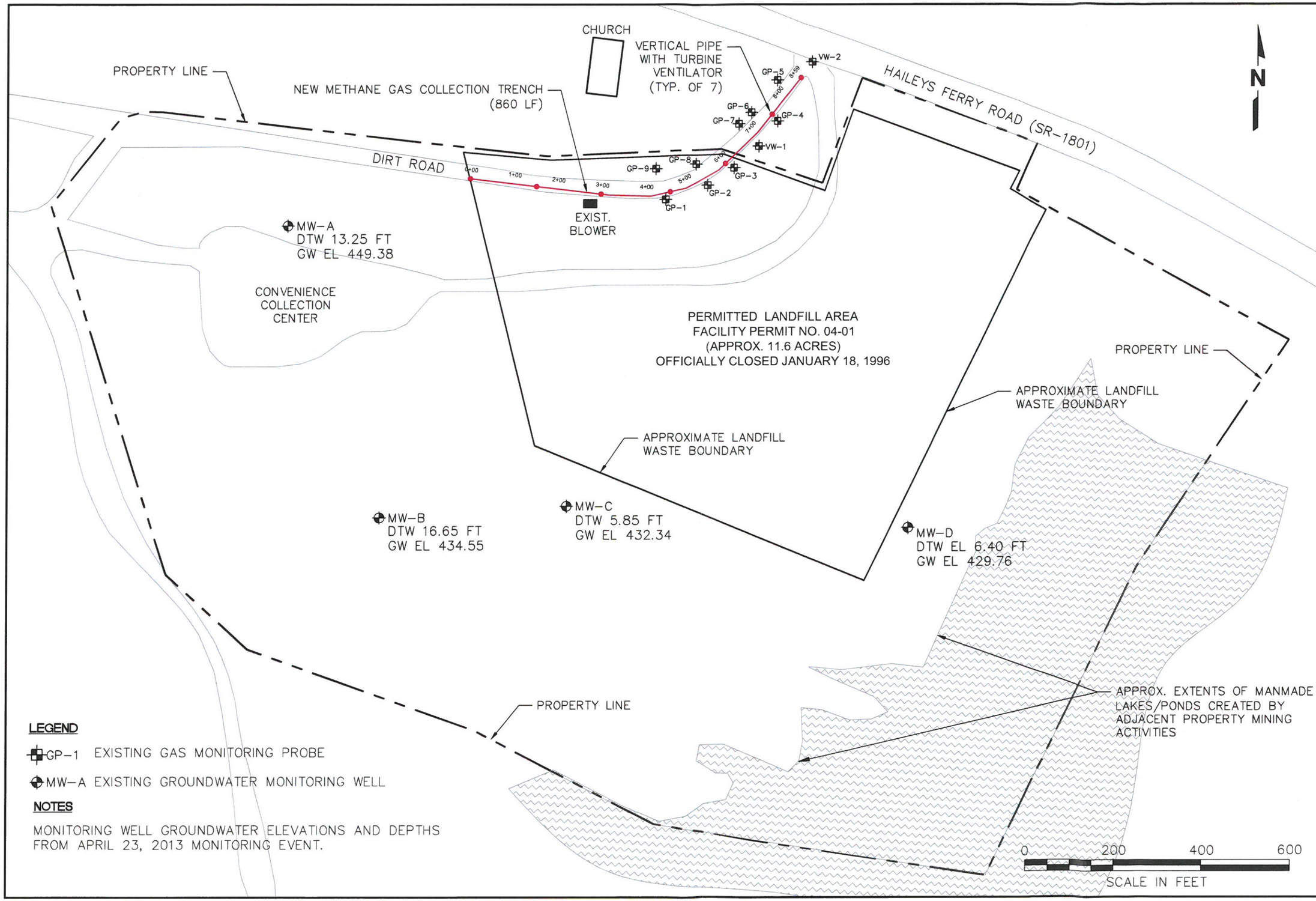
NORTH CAROLINA PROFESSIONAL SEAL 031802 ENGINEER ALBERT D. GLENN

Albert D. Glenn, PE
Project Manager
SCS ENGINEERS, PC

cc: Mike Sessions, Anson County, File

Attachment: Figures


LEGEND
BORINGS CONDUCTED BY E2S
MONITORING WELLS CONDUCTED BY E2S
MONITORING WELLS CONDUCTED BY SOLID WASTE
SR-1801
RETAINING WALL
RETAINING WALL
RETAINING WALL
CHURCH
TREE LINE
METAL PIPE FOR CHURCH BASEMENT DRAINAGE
Approximate Location of Burial Grounds
DIRT ROAD
BLOWER
Trench width of 10' at top of excavation
New Vapor Monitoring Point
Trench width of 16' at top of excavation
New Trench System
Trench width of 10' at top of excavation
New Vapor Monitoring Point
Old trench collection system
TYPICAL TRENCH CROSS-SECTION
(NTS)
GROUNDSURFACE
10'
5'
CLAYEY SOIL BACK FILL
5'
VARIES 18' TO 18'
2.5'
6" dia corrugated perforated pipe
WASHED STONE
2'
New Vapor Monitoring Points, Cross-Sections
Between old and new system
End of New System
Ground Surface
6" Diameter schedule 80 PVC
T-connection
Stainless steel pipe clamps
Corrugated pipe
6" pipe
Ground Surface
6" Diameter schedule 80 PVC
Stainless steel pipe clamps
Corrugated pipe
SCALE: 1"=60' (APPROX.)
Notes:
1. Perforated corrigated HDPE pipe and Fitting meeting Type III class C P 34 Polythylene per AASHTO 252 Performations 1/8".
2. Gapgraded washed stone free of fines with maximum partical size of 1 inch
3. Trench width is generally 3 ft. wide except at the locations shown when caving of the soil had occured along the trenchwall
4. Trench excavation varied from 21ft. to 23ft. deep below ground surface.
ENGINEERING & ENVIRONMENTAL SCIENCE COMPANY
3008 ANDERSON DR., SUITE 102
RALEIGH, NORTH CAROLINA 27609
(919) 781-7798
SYSTEM LAYOUT
ANSON Co. LANDFILL
PERMIT No. 04-01
ANSON Co., NC
DATE: 10/14/99
FIGURE No.: 2



LEGEND

GP-1 EXISTING GAS MONITORING PROBE

MW-A EXISTING GROUNDWATER MONITORING WELL

NOTES

MONITORING WELL GROUNDWATER ELEVATIONS AND DEPTHS FROM APRIL 23, 2013 MONITORING EVENT.

CLOSED ANSON COUNTY LANDFILL 04-01
MODIFICATION TO EXISTING METHANE GAS COLLECTION SYSTEM

DATE AUG. 2014
FIGURE 1

PROJECT NO. 02209365.04 TASK 8
SCALE AS SHOWN
CAD FILE
DES BY ADG
CHK BY TAS
APP BY SCL

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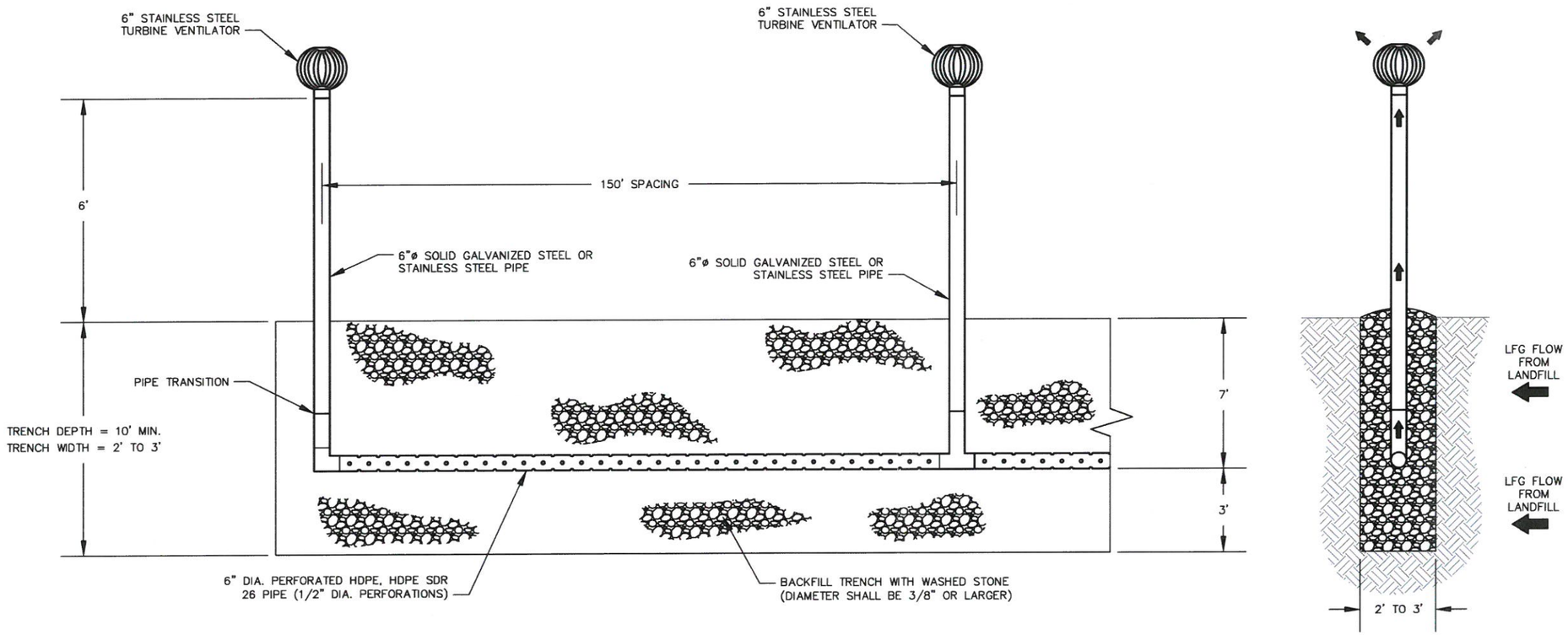
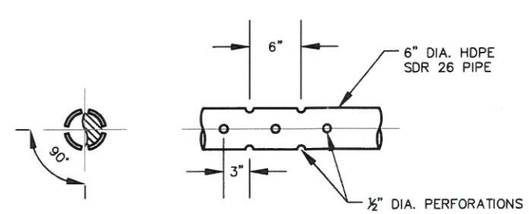


GAS COLLECTION TRENCH ELEVATION VIEW

NO SCALE



PERFORATED PIPE DETAIL

NO SCALE

DATE AUG. 2014

FIGURE 2

CLOSED ANSON COUNTY LANDFILL 04-01

MODIFICATION TO EXISTING METHANE GAS COLLECTION SYSTEM

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CHK BY TAS

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SCALE AS SHOWN

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