



July 6, 2022

Mr. Kenneth Smith, PE
Manager, Solid Waste Branch
Bureau of Land
Illinois Environmental Protection Agency

Re: Proposed CQA Plan Revision – Pipe Pressure Testing
IEPA Site No. 0978020002 – Lake County
Zion Landfill, Inc.
Permit No. 1995-343-LFM
Permit Landfill 811 File

Dear Mr. Smith:

On behalf of Zion Landfill, Inc., Weaver Consultants Group (WCG) is submitting the following proposed CQA plan revision for pipe pressure testing in response to the draft permit denial dated May 6, 2022, regarding the Construction Acceptance Report (CAR) for the 2020-2021 GCCS Improvements.

IEPA stated in the draft denial *“In the addendum received by the Illinois EPA dated April 28, 2022, the applicant indicated that they did not implement the approved Construction Quality Assurance Plan when pressure testing the supply lines. The facility is required to abide by the approved Construction Quality Assurance Plan pursuant 35IAC, 811.501. If the applicant deems it necessary to deviate from the approved CQA Plan, the applicant must submit to the Agency a proposal to revise the CQA Plan. The proposal shall include detailed technical documentation that the revision will still meet regulatory and industry standards.”*

The deviation noted in the CAR is related to the air pressure testing of the HDPE SDR-11 air supply lines for the GCCS. Per Subsection *Placement Requirements* under *Section 15.2 Installation* of the current approved CQA Plan requires these nonperforated pipelines to be tested at 150 psi for a 1-hour test period. Documented pressure testing of these lines was completed at lesser pressures.

- Zion Landfill is requesting a revision to the CQA Plan to modify air pressure testing requirements of air supply lines for the GCCS system to a minimum 120 psi for a test period of 1-hour. The purpose of air testing pipe is to identify leaks within the air piping system at typical operating system pressures. Operating system pressures for the Zion Landfill air supply system typically range from 110 to 120 psi. Testing piping at the proposed 120 psi as opposed to 150 psi will therefore not impact the ability to identify leaks within the air piping system at typical system operating pressures.

- This modification is further supported based on safety concerns as pressure testing of any installed pipe is inherently dangerous. Testing at this lower pressure reduces the potential for accidents or injuries while still meeting the purpose of the test.
- In addition, best practices during pressure testing are to assure safety and prevent damage to system components. The maximum test pressure should not exceed the lowest pressure rated component in the system being tested. For the GCCS air lines the lowest rated component would be the operating ball valves. Attached is a typical operating ball valve for gas installed in the air supply line. Published operating pressure of the valve is 125 psi.

The requested revision to the CQA Plan modifying the air pressure testing of air supply lines for the GCCS system to a minimum 120 psi for a test period of 1-hour meets the purpose of the test, promotes safety during installation and testing, allows for GCCS operation within manufacture pressure limits for system components, and continues to maintain environmental protection. Therefore, this proposed reduction in test pressure meets regulatory and industry standards.

Please feel free to contact me at (844) 263-1618 if you have any questions or comments related to the proposed CQA Plan modification.

Sincerely,

Weaver Consultants Group



Kenneth J. Bergschultz, PE
Project Director

Cc: Mr. Mark Bingham, Zion Landfill
Mr. Randy Frank, GFL Environmental
Mr. Ken Mika, Tetra Tech

Attachments: - CQA Plan Section 15.2
- Typical operating valve specification

ATTACHMENT 1
CQA PLAN SECTION 15.2

Fabricator

The Piping Fabricator will be responsible for perforating the pipe delivered by the Piping Manufacturer according to the plans and specifications. The Piping Fabricator will be responsible for preparing and shipping the perforated pipe to the job-site.

Delivery, Handling, and Storage of Piping

The pipe will be protected, during shipment, from excessive heat or cold, puncture, or other damaging or deleterious conditions. The pipe will be stored on-site in a manner suitable to protect it from long-term ultraviolet exposure prior to actual installation.

The RPR will be responsible throughout the pre-construction, construction, and post construction periods for observing and documenting that the Installer provide adequate handling equipment for moving pipe and that the equipment and handling methods used do not pose any risk of damage. The contractor is responsible for means and methods to implement the work. The RPR will document that the manufacturer and the type and size of each pipe is correct.

15.2 Installation

This section describes the requirements applicable to pipe installation. This section includes installation, testing, observations, and documentation of piping installation.

Pipe Seams

Unless approved otherwise by the CQA Officer, HDPE pipe seams will be made by the butt fusion procedure in accordance with manufacturer's specifications. Care will be taken to make certain adequate pressures are used for fusing pipes and that sufficient cooling periods are allowed prior to testing, bending, or backfilling a pipe section. Unless approved otherwise by the CQA Officer, PVC pipe seams will be in accordance with ASTM D-2855. A coating of CPS primer as recommended by pipe supplier shall be applied to the entire interior surface of the fitting socket, and to an equivalent area on the exterior of the pipe prior to applying solvent cement. The solvent cement shall comply with the requirements of ASTM D-2564 and shall be applied in strict accordance with manufacturer's specifications.

Placement Requirements

Pipe placement will be done in accordance with the following procedures and requirements:

- Piping placement will not be performed in the presence of excessive moisture. The RPR will document that this condition is fulfilled. Additionally, the RPR will document that the supporting backfill has not been damaged by weather

conditions. The RPR will inform the CQA Officer if any of the above conditions are not fulfilled for evaluation of the necessity of corrective action.

- The prepared surface underlying the piping has not deteriorated since previous acceptance, and it is still acceptable immediately prior to piping placement.
- Each piping system will be flushed with water. The RPR will observe and document that each flushing operation is carried out and will document that the pipes are free flowing. Any system that does not flush properly will be immediately reported to the CQA officer, and corrective action will be taken to remedy the problem.
- Method used to place the piping does not cause damage to the piping and does not disturb the supporting backfill.
- The RPR will observe and document all pipe installation. Deviations from the plans and specifications will be brought to the attention of the CQA Officer for evaluation of the necessity of corrective action.
- Observations and measurements should be made to insure that the pipes are the specified size, manufactured of the specified material, and that pipe perforations are sized and spaced as specified.
- All piping should be located as noted in the plans and specifications. Locations, grades, and size requirements are specified on the details of the plan set. Observations and surveying measurements should be made to insure the pipes are placed at the specified locations and grades, and the specified configuration. Observations should be made throughout the construction to ensure that backfilling is completed as specified in the plans and specifications and that, in the process, the pipe network is not damaged.
- Non-perforated pipe will be pressure tested: Landfill gas and gravity flow leachate pipes shall be pressure tested at 5 psi for 60 minutes; condensate pipe and forcemain pipes shall be pressure tested at 50 psi for 60 minutes; air supply lines shall be pressure tested at 150 psi for 60 minutes.

Damages

The RPR will examine each pipe after placement for damage. Damaged pipes or portions of pipes which have been rejected will be marked and removed from the installation area and documented by the RPR.

15.3 Post-Installation

Pipe inverts (or top of pipe elevations) and coordinate locations shall be surveyed at 50-foot intervals and at all tee connection locations. The maximum allowable tolerance for grade is 0.10 feet at each location. The minimum average slope shall be in accordance with the design drawings.

ATTACHMENT 3

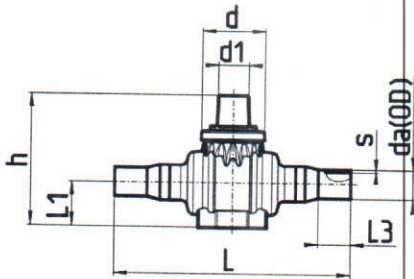
TYPICAL OPERATING VALVE SPECIFICATION

TECHNICAL DATASHEET

IPS PE 100 BALL VALVES

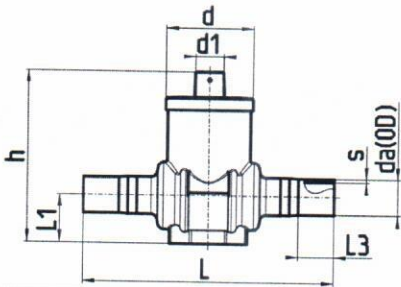


HDPE Ball Valves for Gas



- Ball Valve PVAG
- Full Port (piggable) design
- NBR-sealing
- Injection molded-spigot reducers machined (heated tool butt welded acc. to DVS 2207-1)
- Butt+E-socket-welding
- PE 100 orange with PE 100 black spigot reducers
- Diameter/Wall thickness acc. To ASTM 2513
- Gas

Detail	Code	da (OD)	s	L	L1	L3	d	d1	h
		in	in	in	in	in	in	in	in
2" - SDR11 MOP 125 psi	R-BLVALVE-GAS-R11-02.00	2.37	0.22	17.56	3.03	3.15	5.75	1.97	8.85



- Ball Valve PVAG-G+gearbox 1:6
- Full Port (piggable) design
- NBR-sealing
- Injection molded-spigot reducers machined (heated tool butt welded acc. to DVS 2207-1)
- Butt+E-socket-welding
- PE 100 orange with PE 100 black spigot reducers
- Diameter/Wall thickness acc. To ASTM 2513
- Gas

Detail	Code	da (OD)	s	L	L1	L3	d	d1	h
		in	in	in	in	in	in	in	in
3" - SDR11 MOP 125 psi	R-BLVALVE-GAS-R11-03.00	3.50	0.32	22.09	3.94	4.13	6.95	1.97	13.39
4" - SDR11 MOP 125 psi	R-BLVALVE-GAS-R11-04.00	4.50	0.41	25.00	4.80	4.53	6.95	1.97	14.88
6" - SDR11 MOP 125 psi	R-BLVALVE-GAS-R11-06.00	6.62	0.60	33.35	6.50	5.91	10.65	1.97	19.61
8" - SDR11 MOP 125 psi	R-BLVALVE-GAS-R11-08.00	8.62	0.78	40.79	8.46	6.30	10.65	1.97	24.06



AGRU AMERICA INC.

500 Garrison Rd.
Georgetown, SC 29440

Tel.: (843)546-0600
Fax: (843)221-4139