Project: Confidential x Cornelsen Group

PFAS Removal from a Fixed Foam Extinguishing System

Treatment of AFFF-carrying piping between foam concentrate tanks and pro-portioner, foam concentrate tank fill line, sprinkler lines and/or premix lines up to the launcher & fire protection equipment. As PFAS containing AFFF products are replaced by fluorine-free foams, rinsing and flushing out the systems, tanks, and proportioning piping is essential. However, residual PFAS compounds in the system leads to on-going and long-term recontamination of foams. Cornelsen Umwelttechnologie GmbH undertook treatment of an extinguishing system employing the same principals as used for the treatment of mobile fire engines/airport crash tenders.

99.99 %

PFAS Removal Efficiency

0.08 µg/l

Final PFAS Concentration

Case Study

Background

Prior to mobilization, a detailed review of the site specific conditions was undertaken, following which a **PerfluorAd®** treatment plant was mobilized to site.

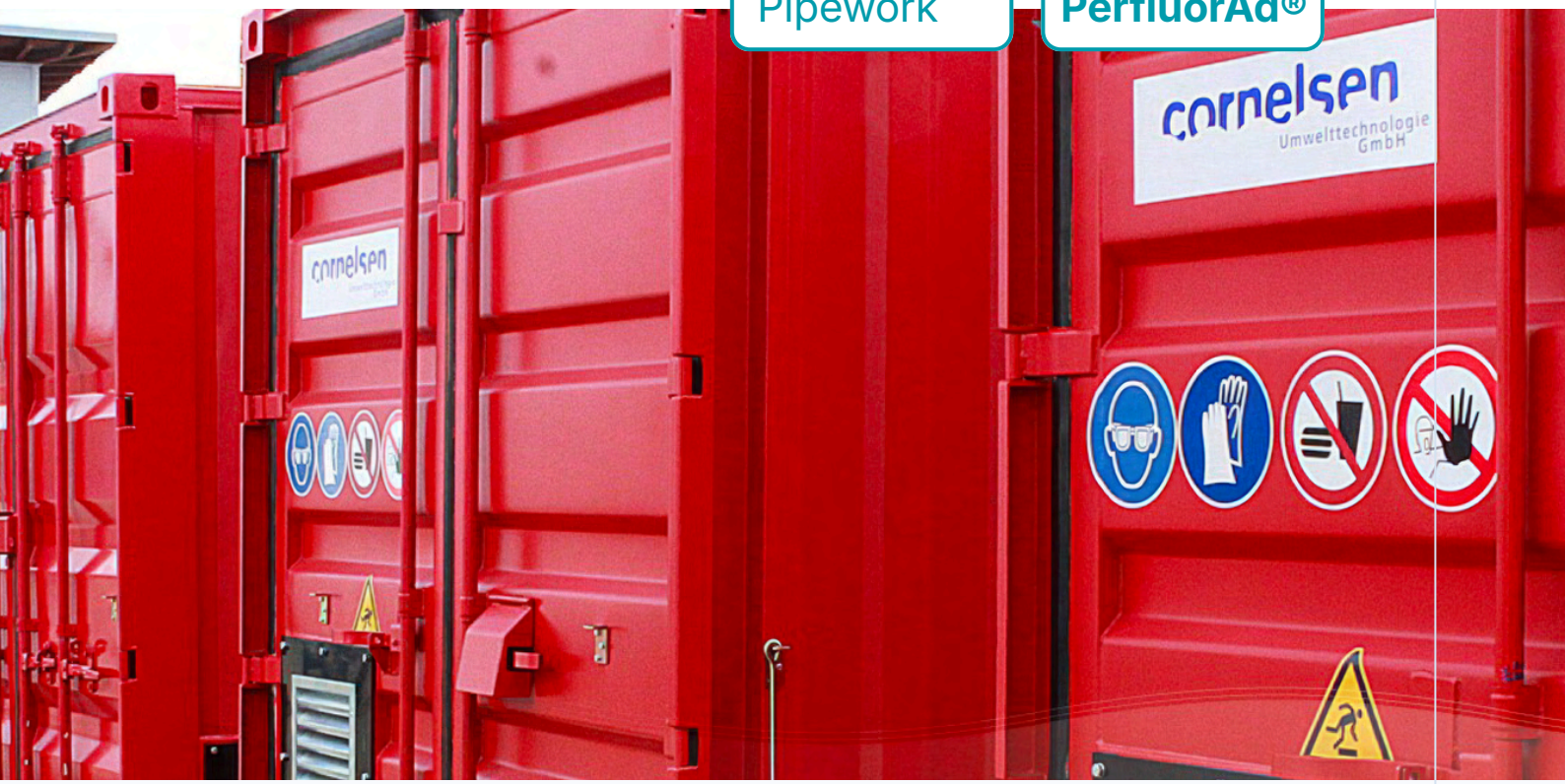
Essential project/site specific considerations are summarised on page 3.

PFAS

AFFF

Pipework

PerfluorAd®

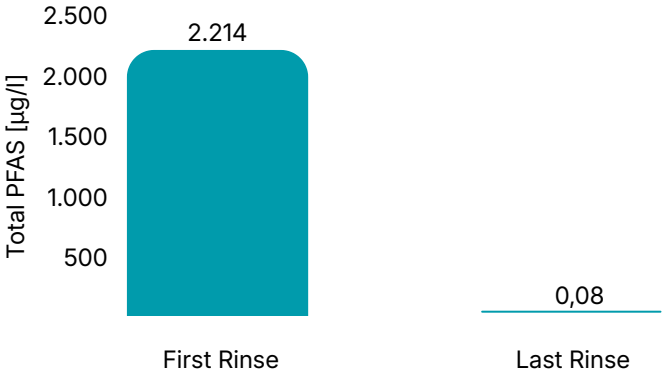


Client	Confidential
Location	Belgium
PFAS Removal Efficiency	**99.99 %**
Initial PFAS Concentration	**2214 µg/l**
Final PFAS Concentration	0.08 µg/l
Number of Rinses	4

Treatment Performance

A total of 4 rinses of the extinguishing system were undertaken using our PerfluorAd agent with a removal efficiency of 99.99% therein removing the risk of recontamination from residual PFAS compounds.

Waste water from the rinsing process was treated with our **PerfluorAd®** treatment process leaving only a few grammes of waste for incineration.



Project Considerations

- **Foam concentrate tank** Location, quantity, internals, dimensions, drawings, accessibility (access manways, nozzles, suction lines, overhead limitations)
- **Power** Connections, fuse protection, distance
- **Fresh water** Pressure, flow rate, distance
- **Treatment plant area** Footprint, ground level, ground conditions
- **AFFF pipework** Diameter, length, material
- **Proportioner** Number, type
- **Foam concentrate** manufacturer, type, proportioning rate, saf-ty data sheet, PFAS analysis of concentrate
- **Sprinkler lines &/or premix lines to launcher** Cleaning required? Low points, drains or flush connections
- **Extinguishing System Supplier** Assisting or not?
- **Time planning**
- **Back-up plans during cleaning procedures**

PFAS Analytes

- Perfluorobutanoic acid PFBA
- Perfluoropentanoic acid PFPeA
- Perfluorohexanoic acid PFHxA
- Perfluoroheptanoic acid PFHpA
- Perfluorooctanoic acid PFOA
- Perfluorononanoic acid PFNoA
- Perfluorodecanoic acid PFDeA
- Perfluoroundecanoic acid PFUnA
- Perfluorododecanoic acid PFDoA
- Perfluorooctanesulfonic acid amide PFOSA
- Perfluorobutanesulfonic acid PFBS
- Perfluoropentanesulfonic acid PFPeS
- Perfluorohexanesulfonic acid PFHxS
- Perfluoroheptanesulfonic acid PFHpS
- Perfluorooctanesulfonic acid PFOS
- Perfluorodecanesulfonic acid PFDeS
- Fluorotelomersulfonate 4:2 FTS
- Fluorotelomersulfonate 6:2 FTS
- Fluorotelomersulfonate 8:2 FTS

- DPOSA
- CDPOS
- Sum of PFAS
- Capstone A+B
- Total PFAS Inc. Capstone

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