



Invicta Water - Case Study - March 2024

Project Overview

Invicta Water was tasked with the opportunity to clean a large commercial real estate parcel in northern Wake County, North Carolina. This private property is a former industrial site, containing multiple contaminated retention ponds. To achieve development approvals, these ponds require draining and remediation of approximately 10 million gallons of water. Figure 1 is an aerial view of the property.

The property owner previously identified PFAS contamination within the retention ponds.

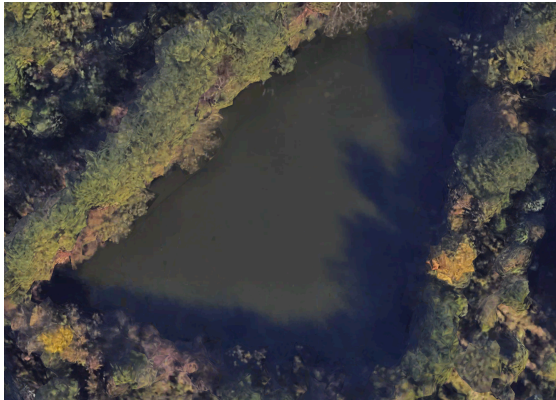


Figure 1: Aerial View of one of the retention ponds on the property

Our Process

Invicta Water collected water samples from the site to evaluate our ability to help the property owner remediate the PFAS.

We then treated the water using our proprietary Photo-Catalytic Destruction System, which first captures the PFAS compounds from water, and in-situ, ultimately destroys the compounds cleanly for permanent remediation.

After treating the water, we sent both untreated and treated samples to a verified 3rd party testing laboratory for evaluation via ASTM D8421.



Results

The following results and table are provided by the independent testing lab. These results verify the efficiency with which our system captures and destroys PFAS compounds, leaving behind clean water and no further contamination nor waste stream:

- 10 unique PFAS compounds were identified in the untreated water sample, including 4 of the EPA top 6 for proposed drinking water regulation (highlighted in yellow in the table)
- The PFAS compounds found in the untreated water contained a wide range of 32 to 13,345 parts per trillion (ppt), totaling 24,174 ppt, with each of the compounds found to be well above recommended, and proposed safe levels
- After applying Invicta Water's system, 8 of the 10 PFAS compounds were eliminated to undetectable levels
- Of the 4 EPA target PFAS found, our system was able to eliminate 3 entirely and 99.91% of the 4th without optimizing for specific compound destruction

Analyte	Min Detect Limit (ppt)	Treated (ppt)	Untreated (ppt)
PFDA	5	----	31.9
PFNA	5	----	2834.7
PFOA	5	11.7	13345
PFHpA	5	----	2634.3
PFHxA	5	432.6	1523.8
PFOS	5	----	2262.6
PFHpS	5	----	106
PFHxS	5	----	759.2
PFPeS	5	39.4	411.1
PFOSA	10	----	266.3
HFPO-DA	5	----	----

In sum, Invicta Water was presented with water containing a total of 24,000 ppt of PFAS compounds. Untreated, this water is unsafe for human use and consumption.

The Invicta Water System captured the PFAS from the water and then destroyed it cleanly to unmeasurable levels, leaving nothing but clean water behind.

To complete the remediation at this property location, our mobile system would easily be implemented at an optimum level to destroy all of the identified compounds to undetectable levels, and leaving no further materials or toxic waste requiring handling.

FOR MORE INFORMATION CONTACT INVICTA WATER

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