

Brushy Creek Pool Finish Evaluation for Highland Horizon
Facility in Round Rock
March 16, 2026



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O: 512-255-7871 x237

CC: Alexandra (Alex) Owens
Dylan Totzke

RE: Highland Horizon Swimming Pools Finish Evaluation
WTI Project #26555

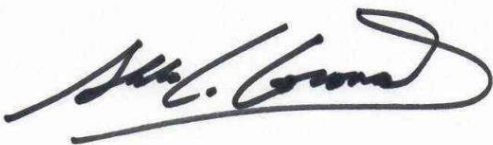
Dear Amy,

Thank you for meeting with me on March 5th, along with Alex and Dylan, to discuss this project. The following report summarizes the on-site evaluation of the pool finish and assesses the current condition of the pool shells. This information is intended to assist the Board in making an informed decision regarding refinishing of the pools.

In summary, the Highland Horizon pools are structurally sound, but widespread plaster delamination caused by incomplete removal of old plaster and improper surface preparation during the 2021 replastering has allowed moisture intrusion that led to finish failures and earlier cracking. Ground Penetrating Radar confirmed that the pool shells show no structural movement and that the issues are limited to the finish. Complete removal and replacement of the plaster is recommended along with tile replacement, coping repairs, improvements to meet ADA requirements, and pressure testing of the pool piping to ensure long term safety and performance.

Once you have read the report and have any questions, please feel free to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Aldo Coronado", written over a light blue horizontal line.

Aldo Coronado
Senior Project Manager
Water Technology, Inc.
6200 N Beach St, #100
Haltom City, TX 76137

HIGHLAND HORIZON SWIMMING POOL SHELL & FINISH EVALUATION

INTRODUCTION:

The purpose of this evaluation is to assess the current condition of the pools located at the Highland Horizon Pool facility in Round Rock, Texas. The facility includes two pools: a children's pool with a zero-depth-entry design and an adult pool with deeper water. Both pools appear to have undergone renovations in the past and are generally in good condition.

Our investigation included a visual examination of the pool shells. At the time of the inspection, the pools were not in operation and were empty, which allowed for a clear evaluation of the shell conditions for each pool. Water Technology Inc. (WTI) was engaged to evaluate the pool shells and finishes and to help determine the potential causes of observed cracking and potential finish failures. WTI's role is to provide the Owner with information that may assist in planning future maintenance or repair work for the pools.

This report summarizes our findings and provides recommendations to address noted concerns/issues. The assessment also identifies conditions and factors that should be considered for future repairs, maintenance, or upgrades to the pools.

Methodology

The pool evaluation consisted of an on-site visual inspection of the pool shells and finishes to assess potential causes of observed cracking. Additionally, this evaluation considered a Geophysical Exploration Report completed by GEHRIG Group that utilized a Ground Penetrating Radar (GPR) scan of the facility.

Evaluation of the Pools

Since the pools were last replastered, two primary conditions have developed: (1) cracking in the pool floors, which has already been repaired, and (2) delamination of the pool finish, which is present in both pools.

Delamination occurs when the bond between the plaster and the underlying concrete fails, creating an air or calcium-filled cavity. This condition can result from several factors, including:

- A bond failure between the bond coating and the plaster or concrete.
- The bond coating and/or plaster being too thin or improperly applied.
- Incomplete removal of the old plaster before applying the new plaster to the existing concrete.
- The shell is not properly cleaned, leaving dust from plaster removal beneath the bond coating.
- The pool being left exposed for an extended period before refilling.
- Poor quality or improper plaster work.

Each of these factors can contribute to the delamination of pool plaster finishes.

Delamination of the finish can allow water to penetrate into the concrete below, eventually reaching the base beneath the shell. Over time, this moisture can cause the shell to shift and result in cracks. Although the process is gradual, if water intrusion is not addressed, it can lead to structural movement.

The integrity of the pool finish is questionable due to the observed cracking and finish issues. In our initial email discussions with Shean Dalton, Dylan Totzke, and Amy Giannini from Brushy Creek, there was concern about whether the previous plastering contractor properly removed the old finish before applying the new plaster in 2021. Based on the initial review of the photos shared with WTI via email, it appeared that the finish removal had reached the concrete substrate.

During the on-site inspection of the finish, we observed areas where the plaster was bubbling and delaminating. In several locations, the finish was removed to examine the layers beneath. Our findings indicate that a bond coat was applied before the most recent plaster finish; however, there was evidence that the previous plaster finish had not been fully removed and that the bond coat had not been directly applied to the concrete. Based on these field observations, the photos initially shared via email do not show the concrete substrate but rather the bond coat applied over the shell surface. As seen in Photo Nos. 1 and 2, the area just below the waterline tile shows evidence of rough removal of the plaster which involves chipping. This removal method can leave intact patches of the original plaster behind. In the areas where we removed and inspected delaminated sections, remnants of the old plaster were clearly visible (Photo No. 3), confirming that the previous finish was not fully removed. When the old plaster remains or the surface is not properly prepared, the new finish is prone to delamination.

Old plaster can retain residues from products such as sunscreen or suntan lotion. Because this is an outdoor pool, these residues are more common. If the contractor does not completely remove the old plaster or properly acid-wash the surface, a layer of oily residues can remain. This prevents the bond coat from adhering correctly and can lead to delamination of both the bond coat and the new plaster.

Additionally, some of the examined samples show very thin layers of bond coat which can prevent proper adhesion to the concrete substrate. Photo Nos. 4 and 5 show the variation in bond coat thickness across different sections of the pools.

At first glance, some of the walls appeared to have been affected by rain during application. However, upon closer inspection, certain areas show spider cracking or pitting in the plaster. In Photo 6, the visible spots appear to be water trapped in these tiny cracks or pits, which were in the process of drying.

Photo No. 7 shows a failure of both the bond coat and the plaster itself. The removed plaster pieces reveal thin bond coat on the back, indicating poor adhesion. Multiple areas on the pool floor showed similar delamination.

Delamination of the plaster finish is likely the primary cause of the observed cracks. Water can penetrate through delaminated finishes and soak the concrete shell. Moisture in the concrete shell and/or bedding can lead to shifting and cracking, which then transfers to the plaster above. That said, no signs of structural shifting or cracking were observed.



Photo No. 1 (2021)- Prior to plaster with bond coat applied. Rough chipped area under tile.



Photo No. 2 (2021) - New plaster applied over the bond coat.

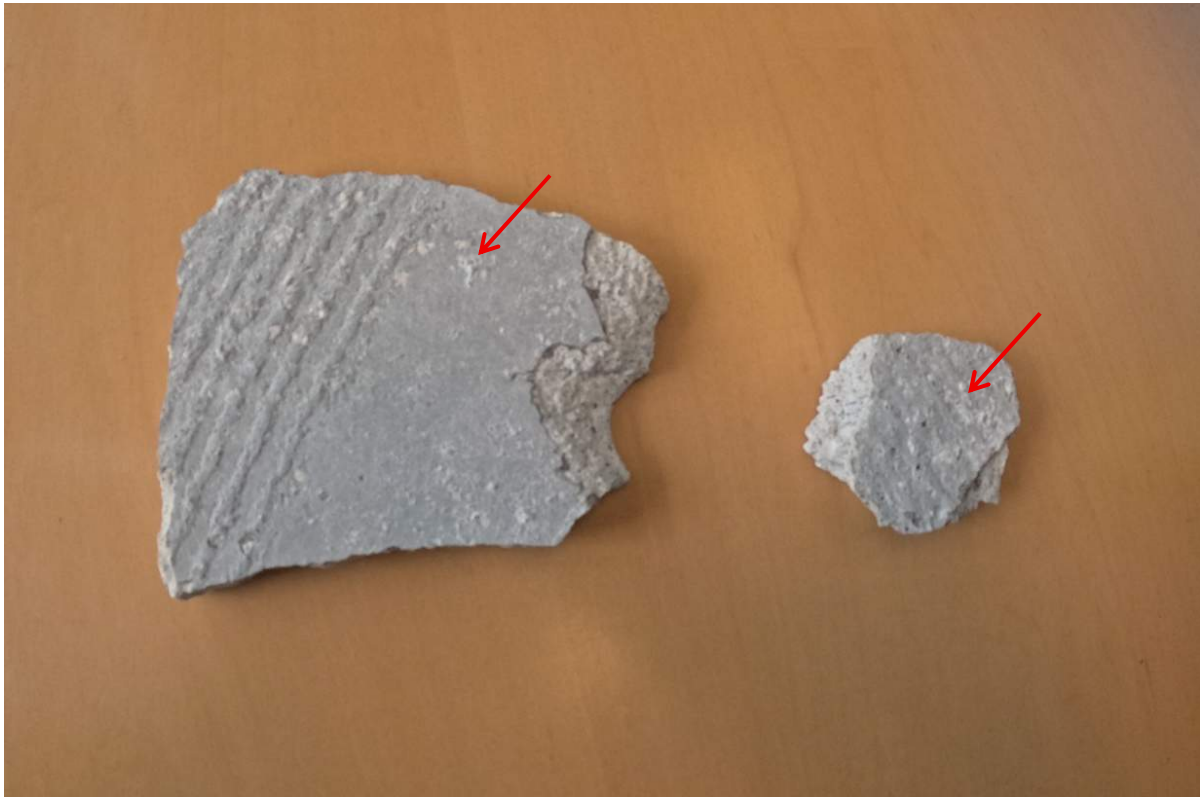


Photo No. 3 (2026) - Two pieces of plaster with bits of old plaster on the back in the bond coat.



Photo No. 4 (2026) - Both pieces side view almost same thickness but the one on the left has thinner bond coat.



Photo No. 5 (2026) - Vanes of old plaster still in place under thin bond coat.



Photo No. 6 (2026) - This area had a thin bond coat and almost looks like epoxy on the wall. The spotting looks like it is pitting or spider cracks.



Photo No. 7 – This area looks to be both failure of plaster and bond coat together. (2026)

Geophysical Exploration Report

The pools were also evaluated using non-destructive methods to identify any additional potential issues with the shells. Ground Penetrating Radar (GPR) scans were conducted by GEHRIG Inc., and a Geophysical Exploration Report for the facility was issued on February 16, 2026. We reviewed this report and compared the findings to on-site observations.

The GPR scan provides insight beyond surface conditions, revealing the actual state of the pool shells beneath the finish. According to the scan, the shells are approximately 10 inches thick, with reinforcing spaced at 9 to 10 inches on center—typical for pool rebar and consistent with standard pool design practices.

The scans also showed the bedding beneath the pools, which range from 10 inches to less than 1 inch thick. The thinner bedding is on the east side of the pools due to native bedrock in that area. This variation in bedding thickness can result in uneven support, and areas with thicker bedding may be more susceptible to shifting if water penetrates beneath the pool through delaminated finishes. In this scenario, the bedding can become saturated and cause movement in the structure; however, no signs of this were observed.

Some previously repaired cracks were observed in the scans. The repaired cracks showed no signs of further propagation, indicating that previous repairs have remained effective. The report identifies no vertical displacement of the pool shells, which aligns with our on-site observations.

The scan provided additional insight into the pool shells, confirming that delamination of the finish is occurring in both pools. Using the scan data, we were able to identify major areas of delamination in each

pool. This was also confirmed in the field by tapping or dragging a walking stick across the surface to identify hollow areas. Many areas also showed visual signs of bubbling which is indicative of delamination.

The scans identified voids under the deck areas, though not beneath the pools themselves. Several voids were located further west on the site. One void near the pools on the east side appears to correspond to utility lines or pool piping. A major void was detected where a known cave and chamber exist on the west side of the pool and bathhouse. None of these voids appear to impact the pool structures.

Overall, the scans revealed conditions that would not have been visible without more invasive methods, and we have no objections to the findings. The GPR method provides valuable insight into the site, helping us understand both the visible and hidden conditions affecting the pools. It is an extremely useful tool for identifying the underlying causes of the issues observed in the pool shells and finishes.

CONCLUSIONS AND RECOMMENDATIONS:

Based on our review of the pool shells and the GPR report, we did not observe any new structural cracking and there was no evidence of the continuation of any previously repaired cracks. The pool shells appear to be in good condition and suitable for continued use.

The areas with significant delamination appear to have originated shortly after the pools were last replastered. We recommend that the plaster finish be completely removed and replaced. The removal process should utilize a proven, reliable method—such as hydro-blasting—to ensure the old finish is fully removed. It is critical that the plaster contractor has experience with both removal and surface preparation and ensures that no old plaster is left on the shells before applying the new finish.

As part of the refinishing project, the pool shell should be dried and visually inspected following removal of the finish. Any observed cracking should be sealed or repaired prior to applying the bond coat and new plaster.

As discussed on site, we recommend addressing the following items in addition to the pool finish work:

- **Tile Replacement:** Some tiles appear to be from the original pool installation, while others have been replaced over time and do not match. The existing grout appears to be standard sand grout and not appropriate for the application. We recommend removing all of the tile and grout and replacing it with new tile and an epoxy grout. Using a new more commonly available tile will make future repairs easier and ensure replacement pieces can be sourced when needed.
- **ADA Accessibility Review:** Both pools should be reviewed to ensure compliance with ADA requirements. The children's pool has a sloped entry but lacks the necessary handrails; we recommend installing an ADA lift to meet the standard. The adult pool features a ramp, but it does not include the required handrails or landing at the 90-degree turn. In order to provide the required landing, one existing pool light will need to be relocated. With the installation of new rails, landing, and relocated pool light, refinishing of the ramp area should be considered. It should be noted that the ramp finish is different than the remaining pool.
- **Coping Stone Replacement:** Some coping areas show cracking; however, these cracks are not consistent along any single side of the pools. Certain coping stones are damaged or cracked, likely due to age and long-term exposure to pool water. These coping stones have simply reached the end of their service life and should be replaced. The pools feature a combination of natural and precast coping pieces. Full replacement of all coping or partial replacement of damaged coping sections could be considered. If partial replacement is included in the bidding documents, the pool contractor may need to review all coping areas and identify which pieces require replacement prior to submitting their bid. Unit prices could be provided in \$/each or \$/linear foot.

- **Pressure Test of Piping:** We recommend performing a pressure test on the existing pool piping before refinishing the shells to confirm the piping is in good condition or identify leaks that can be repaired in coordination with the remaining work outlined above.

These recommendations, along with the plaster replacement, will help ensure the pools are safe, durable, and compliant with current standards.

Cost Opinion for Work:

The following represents a cost opinion for the replacement of the pool finish and the additional work discussed on site. These figures are preliminary estimates and are not final. Final costs should be determined by the Owner through their formal bidding process.

	Recommendation:	Process:	ROM:
1.	Demolition	Removal of tile, plaster, light	\$40,000 - \$60,000
2.	Concrete Repair Allowance	Patch and/or repair and areas discovered following finish removal	\$5,000 - \$10,000
3.	New Plaster	Replaster both pools	\$130,000 - \$160,000
4.	New Tile	New waterline tile and epoxy grout	\$12,000 - \$15,000
5.	New Inlets	Replace inlets with new finishes	\$1,500 - \$2,500
6.	ADA Access for Kid's Pool	Provide battery powered lift and deck anchor	\$10,000 - \$15,000
7.	ADA Access for Adult Pool	Provide railing, landing, and relocation of pool light	\$18,000 - \$20,000
8.	Replace Pool Coping	Replace coping partial to entirely	\$20,000 - \$50,000
9.	Piping Pressure Test	Pressure test the existing piping systems	\$6,000