



TO: Steven Labovitz, Esq.
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FROM: Murray Cook
President, Brickman Sportsturf

DATE: July 7, 2009

RE: Scranton Wilkes-Barre PNC Field – Playing Field Assessment

On July 1st, 2009, I evaluated the playing field conditions at PNC Field, Moosic Pa.

Field History

Steve Horne, the Head groundskeeper, provided all of the field history related to the construction as he was present when the new field was installed approximately 3 years ago. The field was originally a synthetic turf field that was in need of replacement due to wear and tear. He also explained that the field construction was planned as a “temporary field”. Therefore a precedence of saving construction costs on the field was implemented.

Construction plans of the original field during that period have not been located to further evaluate the drainage system design. Steve noted that the field was basically stripped of the asphalt down to the gravel by the County and contracted to the Motz Group to construct. They installed an irrigation system, covered it with 6 inches of sand, laid the sod and installed the infield clays and mounds. What was not installed was a new sub base drainage system and the new field had to rely on the old synthetic turf drainage system to handle the rain water. Unfortunately, it is unknown as to what the condition of this system was prior to construction.

Current Observations

Upon my arrival, the groundskeeper reported that the game on June 30 was cancelled due to field conditions. As I walked the field, there was still standing water across the entire outfield from rain the previous day. This condition is not typical on professional baseball fields, let alone at AAA level. From this point I proceeded with the following assessment:

1. A small hole was dug to examine the depth of root zone materials, root structure and sub surface.

2. The rootzone had an odor that is typical of anaerobic soils. Anaerobic soils deplete the roots from much needed oxygen to survive. Anaerobic soils are caused by poor drainage, root saturation and the toxic gases created by these conditions. These poor soil conditions are basically rotting the turf causing root decay and increasing the drainage problem.
3. There is only 6 inches of rootzone under the grass layer. It should be noted that the industry standard for a USGA root zone is 8 to 12 inches.
4. Directly beneath the 6 inches of sand is a geo clothe that was placed over the stone layer of the existing field. This “barrier” between the sand and gravel is not typical of sub-base drainage system construction. It appears to have been installed as a bridging barrier to keep the stone from the sand-based rootzone. The Geo-clothe does not appear to be allowing the water to flow through the sand and into the subsequent gravel layers. Reportedly, removing a small piece of the geo clothe barrier allowed water to flow quickly into the gravel layers. This condition is a contributor to the poor drainage and soil conditions. Installing a geo clothe between the rootzone and the gravel is not recommended in a typical USGA modified rootzone field. The gravel and the rootzone (or sand) is typically specified to bridge without a geo clothe allowing the water to flow rapidly through the system.
5. The groundskeeper has not been able to perform typical turf management practices to alleviate the poor soil conditions such as “deep tine” aerification because the irrigation system was installed just below the first layer of filter fabric. The deep tines would perforate the irrigation system causing extensive damage. Normally the irrigation laterals are installed at a depth of 12 – 24 inches deep. Not 6 inches. This mirrors other construction practices that provide further evidence that the field was planned for temporary use.

Conclusion

As mentioned above, the type of field construction engaged by the County and its Contractors at PNC Field in 2006 appears to have been based on a temporary solution, not permanent. Based on the assessment, the head groundskeeper has done a great job of masking the sub surface problems over the past 3 years. His expertise has allowed the field to perform well, but with above average rain fall for the area and the quickly deteriorating soil conditions, which is exacerbating the choking effect of the geo clothe, the field can no longer drain as it should, and has become unplayable after only moderate rains.

This report is based on personal and professional experience from constructing and managing baseball fields around the world. All methods of construction and baseball field management are based on my personal experience and by no means should be considered the only options to remedy the concerns that have been addressed. The intention of this report is to find resolve and to implement goals that will provide a playing surface that all parties involved will be satisfied with in the near future.

Short Term Suggestions

1. Install temporary de-watering inlets or “quick drains” to remove water in low areas. The groundskeeper installed a couple of these drains this week and they did relieve some water hazards. Continuing to install these type drains throughout the field during the season will assist in removing some of the water, but will not solve the problem.
2. Begin an aggressive aerification program that will penetrate the thatch/black soil layer. The machine should have solid tines and the ability to put small 3/8in holes in the geo layer. It is

important to locate the irrigation lines so as not to damage them. After aerifying, they should top dress the field. Small holes should be punched in the geo-cover this year to help drain the field. Once the holes are placed it will be important to have an aggressive topdressing program to ensure the field stays level until the entire field can be replaced. Punching holes in the geo-cloth may cause the sub-base soil structure to deteriorate more rapidly. If this option is chosen, the County and or team should aggressively plan to replace the field this fall.

3. Another suggestion would be to install a perimeter drain around the warning track edge in the outfield with vertical clean outs to allow water to flow into the drains when it is raining. Lateral drain lines could then be ran from this drain in the warning track into areas around the outer perimeter of the outfield grass. The costs of these drains are minimal and will relieve some of the water related problems temporarily.
4. Another suggestion to consider as a "band-aid" is called Drill & Fill. A machine is used to drill a hole in the soil to a specific depth. In this case no deeper than 6 inches. These holes are drilled with spacing at 12-18 inches apart across the entire outfield. After drilling the 1" wide hole the machine drops a soil amendment into the opening. This can be sand or even a quick dry type soil conditioner. I have used this on other poor draining fields with positive results and minimal damage to the surface. They will need to flag the irrigation heads and run a string along the route of the underground irrigation lines to help insure the lines are not punctured by accident.

The above suggestions are not intended to repair the field's drainage problems. They are possible solutions that will help get the team through the season, If it continues to be an abnormally rainy summer, the effectiveness of these turf management options will vary. Several of these renovation suggestions can be completed by the Head groundskeeper.

Long Term Recommendation

This field is at the end of its service life. It is recommended the field be removed and completely renovated in the fall of 2009. I recommend removing the top 12 to 20 inches of material and installing a Modified USGA Field Playing System. This type of field will allow continuous play after heavy rains and decrease maintenance costs. A typical field construction ranges in costs depending on various components. An estimate of between \$650,000 -750,000 is possible in today's market to build a new field. Removal of the existing field may require additional funding pending soil studies.

Due to the winter weather conditions in Moosic there is a small window this fall to complete the field renovation. There will be no time in the spring of 2010 to build a field without affecting the team's schedule. In order to have the field installed before winter, it is important to begin immediately with the development of bid documents so the construction can begin early September. To install the field it will take 45 to 60 days giving a completion date by the end of October.

CC: Craig Schmitt
Steve Resnick

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With over **32 years** of professional sports field maintenance and construction experience, Murray provides a wealth of information for the development of baseball and sports field design, construction and maintenance. His industry knowledge as to the most current methods of field construction has been implemented at many professional and collegiate facilities around the world. He is President of SPORTSTurf Services, a Division of The Brickman Group. The division provides athletic field design, construction and project management to professional, collegiate and high school stadiums as well as multi-sport complexes across the country.

The Brickman Group's corporate offices are located in Gaithersburg, Maryland. Since 1939 Brickman has provided commercial landscape design and maintenance services around the country.

*An Overview of Projects
Specializing in Baseball Field Design
Construction Administration and Maintenance*

- **Major League Baseball**
As MLB's field consultant he has provided baseball field renovations for exhibition games around the World including the Orioles/Cuba Series in Havana, Cuba and the development of the baseball facilities in 2008 Olympics in Beijing, China, the 2004 Olympic. He provided similar services for the 2000 Olympics in Sydney. Over the past 20 years he has worked with MLB and IBAF on numerous projects related to design, construction management and baseball tournament management worldwide. Including: The **2009 and 2006 World Baseball Classic**, Puerto Rico, Mexico and Japan, The IBAF Baseball World Cup in Taiwan, 2001 and Holland 2005 and 2009; MLB Baseball Academy in Los Angeles, Australia and Italy ; USA Baseball's Olympic Training Center.
- **Beijing 2008 - Athens 2004 – Sydney 2000 Olympics**
Deputy Competition Manager. Provided design and construction management services for the baseball and softball stadiums and fields.
- **2005-07 New York Mets and Washington Nationals Field Consultant**
- **Disney's Wide World of Sports, 1995-98**
Provided overall design and maintenance for all athletic, baseball and sport surfaces for the sports complex including clay

tennis court construction, softball and youth facility design and management. After completing the facility design, Murray was hired to manage the complex.

- **USA Baseball Olympic Training Complex 2006**
Currently providing field and facility consultation for development of the 4 field complex.
- **Cal Ripken Stadium and Sports Academy**
Provided field design consultation and construction management for first field of Cal Ripken's new Youth Academy. Work is beginning on the construction of the remainder of the youth complex.
- **2003-4 Montreal Expos San Juan Games Operations and Field Development**
Responsible for \$3 million in renovations and Overall field operations at Hiram Bithorn Stadium .
- **Houston Astros Field, Opened March 2000**
Provided field design consultation, construction management, and research/purchase of field components and equipment needed to build and maintain the baseball field.
- **St. Louis Cardinals & Montreal Expos Spring Training Facility, 1998-2000**
Provided complete baseball field and stadium management for the thirteen-field complex. Including budget management and training.
- **West Palm Beach Municipal Stadium Atlanta Braves and**

Montreal Expos Spring Training Facility

Provided design, construction and maintenance operations 1989-1995

- **2000 Olympics, Sydney, Australia**
Field renovations and maintenance for The Gold Medal Winning 2000 USA Olympic Baseball Team
- **Sacramento River Cats AAA Stadium, Opened 2000**
Provided field design consultation and construction management for new stadium.
- **Tri-City Valley Cats**
Short-Season Class A Stadium, field renovation 2002 (Field of the Year 2003) Renovation completed at Joseph L. Bruno Stadium for franchise opening season.
- **Greeneville Astros –**
Field of the year Recipient 2004
- **Other Professional Sport Facilities and Spring Training Facilities**
Provided consultation to over **100** other professional and collegiate sports facilities around the country during the past 30 years.
- **Other Relevant Experience**
Past President of the National Sports Turf Managers Association and Board Member for 10 years. 1998 *Man of the Year* of the Sports Turf Industry. Five Professional field of the year awards.