

**8. Stockpile Evaluation prepared by Alt & Witzig Engineering –
April 17, 2018**



Alt & Witzig Engineering, Inc.

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Greater Cincinnati Redevelopment Authority
3 East 4th Street, Suite 300
Cincinnati, OH 45202
Attn: Mr. Tom Leibham

RE: Stockpile Evaluation
2250 Seymour Avenue
Cincinnati, OH
Alt and Witzig Project: OP18010

Mr. Leibham,

Alt and Witzig Engineering, Inc. personnel evaluated the existing soil stockpiles at 2250 Seymour Avenue. The purpose of this evaluation was to visually examine the materials for suitability as well as provide moisture content information.

Three (3) main stockpiles were observed onsite. Thirteen (13) test pits were excavated in the north pile, three (3) in the center pile, and five (5) in the south pile. The soils in the stockpile generally consist of a combination of brown to dark brown clays with varying amounts of silt, sand, and gravel. Based on our visual examination, the materials are suitable for use in any structural fill areas. Samples of the soil were returned to our laboratory for moisture content testing. The results of the testing are provided below:

Stockpile Location	Location on Stockpile	Depth below exterior of pile (ft.)	Moisture Content (%)
South	East	3	24.6
Center	West	3	22.2
North	North	4	19.7
Center	Middle	4	21.8
South	Middle	2	22.2
North	Northwest	4	26.2
South	West	2	23.4
Center	East	3	20.0
North	Northwest	4	24.9
South	Middle	3	23.6
North	North	5	27.2

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South	North	3	24.8
North	Northeast	3	22.4
North	East	3	19.0
North	Center	5	19.1
North	West	3	28.4
North	Southwest	4	23.0
North	South	4	19.2
North	Northeast	5	21.2
North	Southeast	3	19.9
North	Southeast	4	22.2
North	South	3	22.0
North	Southwest	4	21.0

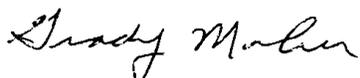
We would expect the optimum moisture content of the soils tested to be in the range of 15% to 19%. As seen above, the in-place moisture contents ranged from 19.2% to as high as 28.4%. To achieve adequate compaction results, the moisture content of the soil should range from approximately -2 to +3% of the optimum. As such, it would appear that at this time a majority of the stockpiled soils will require some drying to achieve adequate compaction results.

Drying can generally be accomplished in two ways, air drying or with the addition of a chemical agent. Air drying by disking is effective if done during warm dry weather. If weather conditions are not favorable, the addition of a chemical agent such as lime kiln dust (LKD) can be effective. We would expect that the addition of LKD at an application rate ranging from 2% to 5% by soil weight would be adequate for drying purposes.

If you have any questions concerning this report, please contact our office at your convenience.

Sincerely,

ALT & WITZIG ENGINEERING, INC.



Grady Marker, Senior Project Manager