RESEARCH REPORT DOCUMENTATION PAGE

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ND 2014-01	February, 2017	N/A	SS-4-053(015)030

5. Title and Subtitle

Evaluation of Permazyme 11x™ Soil Stabilization

6. Report Type
Click on link to open report

- Work Plan ☐
- Construction ☐
- **Evaluation** ☒
- Final ☐

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11. Author(s)/Principle Investigator(s)
TJ Murphy

12. Performing Organization Name and Address

- NDDOT M+R ☒
- NDDOT OTHER* ☐
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- OTHER* ☐

*see supplementary notes

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

13. Sponsoring Agency Name and Address

North Dakota DOT
Materials and Research Division
300 Airport Road
Bismarck ND 58504-6005

14. Supplementary Notes

15. Abstract

Purpose and Need

As construction and material costs increase, NDDOT is investigating innovative ways of improving construction processes to benefit pavement performance. There is a need for cost effective methods of reducing material demands in areas were the supply of aggregates are limited and expensive. Soil stabilization can increase soil strength and stability reducing the required base material to construct a structurally adequate pavement system. Pacific Enzymes Inc. has developed Permazyme 11x™ and promotes its capabilities system to provide additional soil strength and stability. The system uses an enzymatic soil stabilizer along with conventional compaction to create a permanent dense weather resistant subgrade.

Objective

The objective of this experimental project is to evaluate the long term performance benefits of Permazyme 11x™ enzymatic soil stabilizer ability to increase subgrade strength and stability as a method to reduce aggregate material demands. The long term pavement performance of the test sections will be compared with a control section that will consist of a standard grade raise practices of the same thickness.

Scope

The NDDOT has identified a grade raise project scheduled for construction in the Minot District during the 2014-2015 seasons. The following project has been selected to evaluate the enzymatic soil stabilizer. SS-4-053(015)030, PCN 20764
Requirements for the stabilized subgrade will be incorporated into the bid and construction documents by plan details and the following plan note.

Evaluation

The field evaluation for these projects will consist of observing and documenting the construction process of the enzymatic soil stabilizer and an annual inspection of the pavement distresses with FWD testing.
During the construction of the project the following data will be collected for both the experimental and control section:
AASTHO T-87,88,89 Soil Classification and Properties
AASTHO T-180, Moisture Density Curves
AASTHO T-208-10, Unconfined Compressive Strength
The research project will last five years with a construction report, an annual evaluation report, and a final report.

Reporting

A final field collection of FWD data will be performed during the summer of 2023 and a final performance report will follow.

16. Key Words

Permazyme 11x
Enzymatic
Stabilized Subgrade

17. Distribution Statement

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North Dakota Department of Transportation
Materials and Research Division:
300 Airport Road
Bismarck ND 58504-6005
Office: (701) 328-6901 Fax: (701) 328-0310

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