PROJECT SPOTLIGHT:
OIL & GAS HAUL ROAD

Base and Subbase Stabilization

>500 psi	~18,500	50%
Unconfined Compressive Strength achieved in design testing	**Gallons of water reduced per mile**	**Less cement used compared to traditional past methods**

CHALLENGES

- Stabilize the base sufficiently to support extremely heavy and demanding Oil & Gas traffic, ensuring long-term durability under severe loading conditions.
- Improve stability in the base to minimize cracking on the overlying asphalt surface.
- Reduce the volume of cement and water required in their current stabilization practice.
- Complete the base stabilization with minimal disturbance to traffic and Oil & Gas operations.

SOLUTION

- Added a 3" layer of ODOT #304 aggregate and incorporated it with the top 9" of the existing road to enhance the road material's engineering properties.
- Stabilized the top 12" of road with 3% cement (instead of the 6% baseline) and Midwest's Soil Sement Engineered Formula® polymer stabilizer.
- Installed a 3" thick layer of Hot Mix Asphalt on top of the stabilized base.

RESULTS

- **Designed to Withstand Extreme Traffic:** Laboratory testing with the selected mix design achieved over 500 psi in Unconfined Compressive Strength – exceeding the required strength and far outperforming the untreated material.
- **50% Less Cement Required:** Reduced the volume of cement by 50% compared to traditional stabilization on these types of roads.
- **Reduced Water Usage:** Saving roughly 18,500 gallons of water per mile, this method uses 50% less cement than their current stabilization practice, which lowers the amount of water needed for cement hydration.

PROJECT BACKGROUND

Product: Soil Sement Engineered Formula®
Location: Ohio
Industry: Energy
Customer: Oil & Gas Company

A leading energy operator needed reliable haul routes for pad development in the Appalachian Basin. The haul roads must withstand the unrelenting and extreme traffic loads that occur during the drilling and fracking phases.

Until now, haul road stabilization projects specified a rigid 12-inch cement-stabilized base, but this required high material volumes and lacked flexibility for local soils – leading to premature cracking in the Hot Mix Asphalt surface. The project aimed to reduce cement and water use, maintain strength, and improve constructability.

LOOKING FORWARD

This project demonstrated that heavy-use road stabilization using Soil Sement Engineered Formula® is a cost-effective alternative to traditional methods. The next phase will involve tracking its performance versus standard cement sections through traffic and weather cycles. The hybrid approach offers cost, sustainability, and operational benefits for energy operators and local communities.