

Practice: 333 - Amending Soil Properties with Gypsum Products

Scenario: #7 - Gypsum greater than 1 ton rate

Scenario Description: This is the description for gypsum application of more than one ton/acre rate (avg 1.5 tons/acre) to improve surface water quality due to phosphorus, pathogens, and soil health (Ca/Mg ratio). In combination with an implemented nutrient management plan the producer will use gypsum to improve soil surface structure and reduce concentration of dissolved reactive phosphorus (DRP) in runoff. This scenario includes the cost of material and application cost. The addressed resource concern is water quality and soil health. Associated practices are 590 – Nutrient Management, 328 – Conservation Crop Rotation, 340 – Cover Crop, 329 – Residue and Tillage Management, No-till.

Before Situation: Cropland that has been in continuous production that has relatively low organic matter and moderately high clay content with application of manure with a risk of pathogens. The soil in these fields have poor soil structure and a high risk of phosphorus and pathogen runoff. The soils are susceptible to soil crusting and as a result of long term tillage systems and have high concentration of phosphorous near the soil surface. The combination of poor soil structure and high nutrient levels at the soil surface results in runoff events with high concentrations of DRP that may contribute to degraded water quality.

After Situation: A determination based on existing soil samples used in normal nutrient management has been made. The Implementation Requirements for 333 Amending Soil Properties with Gypsum has been developed for the site. The application of gypsum to the field is based on these existing soil samples will result in reduce runoff and improve runoff quality. This condition over time in combination with the implemented nutrient management plan and supporting practices to improve soil health will improve surface water quality.

Scenario Feature Measure: Acres with a gypsum product application

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: \$2,570.42

Scenario Cost/Unit: \$64.26

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.66	2	\$91.32
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Materials

Gypsum, Ground Ag Grade, Bulk	1224	Agricultural grade quarry ground gypsum (CaCO4) for dispersive soil treatment. Materials and delivery only.	Ton	\$34.46	60	\$2,067.37
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Equipment Installation

Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.29	40	\$411.73
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Practice: 333 - Amending Soil Properties with Gypsum Products

Scenario: #8 - Gypsum less than 1 ton per acre

Scenario Description: This is the description for less than or equal to one ton/acre rate (Average 1 ton/acre) gypsum application to improve surface water quality due to phosphorus and soil health (Ca/Mg ratio). In combination with an implemented nutrient management plan the producer will use gypsum to improve soil surface structure and reduce concentration of dissolved reactive phosphorus (DRP) in runoff. This scenario includes the cost of material and application cost. The addressed resource concern is water quality and soil health. Associated practices are 590 – Nutrient Management, 328 – Conservation Crop Rotation, 340 – Cover Crop, 329 – Residue and Tillage Management, No-till.

Before Situation: Cropland that has been in continuous production that has relatively low organic matter and moderately high clay content. The soil in these fields have poor soil structure and a high risk of phosphorus and pathogen runoff. The soils are susceptible to soil crusting and as a result of long term tillage systems and have high concentration of phosphorous near the soil surface. The combination of poor soil structure and high nutrient levels at the soil surface results in runoff events with high concentrations of DRP that may contribute to degraded water quality.

After Situation: A determination based on existing soil samples used in normal nutrient management has been made. The Implementation Requirements for 333 Amending Soil Properties with Gypsum has been developed for the site. The application of gypsum to the field is based on these existing soil samples will result in reduce runoff and improve runoff quality. This condition over time in combination with the implemented nutrient management plan and supporting practices to improve soil health will improve surface water quality.

Scenario Feature Measure: Acres with a gypsum product application

Scenario Unit: Acre

Scenario Typical Size: 40

Total Scenario Cost: \$1,536.73

Scenario Cost/Unit: \$38.42

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Labor

Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$45.66	2	\$91.32
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Materials

Gypsum, Ground Ag Grade, Bulk	1224	Agricultural grade quarry ground gypsum (CaCO4) for dispersive soil treatment. Materials and delivery only.	Ton	\$34.46	30	\$1,033.69
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Equipment Installation

Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.29	40	\$411.73
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