GENERAL APPLICATION GUIDE FOR ENVIROTAC II AND EARTHGLUE APPLICATIONS

OVERVIEW

Following good management processes is the key to any successful road program. When practitioners focus on broad, fundamental programmatic elements, the details are easier to conceive and manage. By spending the time and the money up front to design and refine site- specific best practices, beneficial results will follow over the life of roadways.

Numerous factors must be considered when managing unpaved roads, including the engineering of the road, who uses the road and why, politics, economics, environmental impacts, training, staffing, cost, and the satisfaction of the customers being served.

KEY INSIGHTS

The work of a successful road manager is not simply crunching numbers in financial statements. The successful road manager knows that Envirotac II or EarthGlue will only work well when it's applied to a properly engineered roadway, the road is appropriately maintained, and the treatment is rejuvenated at optimal time intervals.

The most successful management programs are those that consider not just the price tag of Envirotac II or EarthGlue on a single stretch of road, but that factor in all cost benefits involved in maintaining the entire network of roads over time. This includes identifying the price, both economic and environmental, of doing nothing, which can lead to higher costs "down the road" to remediate a bad situation. The public and private expectation placed on the road manager is to preserve and maintain the road system by keeping the roads dust free, properly shaped, providing a safe driving surface, limiting material loss, and quickly responding to concerns.

The Envirotac line of products , when carefully selected, applied, and maintained, can provide a cost-effective means of satisfying these expectations. Once an Envirotac II or EarthGlue application cures, the active ingredients glue the aggregate particles to each other.

UNPAVED ROAD DUST MANAGEMENT – OVERVIEW

No Envirotac II or EarthGlue application should be applied in freezing/ rainy conditions. Envirotac II and EarthGlue should not be allowed to freeze. Envirotac II and EarthGlue can cure in half a day in hot low humidity days. In cold humid days Envirotac II and EarthGlue may take up to four days to cure. Envirotac II and EarthGlue should be allowed to cure at least 2 days before a major rain event. For technical support please contact ***Jeremiah Vermillion at (760)832-3278 call/text email Jeremiah@eparhino.com***

Envirotac II has been successfully used in all 50 states. Envirotac II and EarthGlue has been used by government agencies such as the Army Corps of Engineers,United States Department of the Navy, Environmental Protection Agency, California Department of Toxic Substances, Multiple State Traffic Agencies, California State Parks, BLM, USFS, CDFW, SCAQMD and others.

How Envirotac II/ EarthGlue Works

Once the water in the Envirotac II/ water solution has evaporated, the active ingredients in Envirotac II glue the aggregate particles together thus providing dust control and increased strength improvement (stabilization) of the road.

WHY ENVIROTAC II/ EARTHGLUE?

Depending on the situation, treating an unpaved road with Envirotac II or EarthGlue generally limits the fines loss. Fines are the “glue” that holds the larger aggregates of an
unpaved road together to form the surface layer. Keeping fines in the road leads to:

- Reduced dust levels;
- Improved safety and driver experience;
- Improved air and water quality by reducing particulate matter and sediment runoff;
- Improved quality of life of nearby residents;
- Extended intervals between gravel replacement needs;
- Reduced maintenance costs through extended intervals between grader blading needs; and
- Reduced public complaints.

Dust/Erosion Control Applications Using Envirotac II EarthGlue soil binder NON TRAFFIC APPLICATIONS

Envirotac II

A 6 month Envirotac II dust control application should consist of approximately 70 gallons of Envirotac II per acre.
A one year Envirotac II dust control application should consist of approximately 125 gallons of Envirotac II per acre.
A two year Envirotac II dust control application should consist of approximately 275 gallons of Envirotac II per acre.

Instructions for dust/erosion control applications using Envirotac II

Step 1 add water
Approximately 1,800 gallons of water to 2,000 gallon or 3,725 gallons of water to a 4,000 gallon water truck for a 6 month application.
Approximately 1,725 gallons of water to 2,000 gallon or 3,450 gallons of water to a 4,000 gallon water truck for a one year application.
Approximately 1,450 gallons of water to 2,000 gallon or 2,900 gallons of water to a 4,000 gallon water truck for a two year application.

Step 2 add Envirotac II
Add ½ tote of Envirotac II to a 2,000 gallon water truck
Add 1 tote of Envirotac II to a 4,000 gallon water truck
for a 6 month application.
Add 1 tote of Envirotac II to a 2,000 gallon water truck
Add 2 totes of Envirotac II to a 4,000 gallon water truck

for a one year application.
Add 2 totes of Envirotac II to a 2,000 gallon water truck
Add 4 totes of Envirotac II to a 4,000 gallon water truck
for a two year application.

Step 3
Spray Envirotac II/ water solution to desired area a 2,000 gallon water truck should cover about 2 acres a 4,000 gallon water truck should cover about 4 acres

EarthGlue

A 6 month EarthGlue dust control application should consist of approximately 125 gallons of EarthGlue per acre.
A one year EarthGlue dust control application should consist of approximately 250 gallons of EarthGlue per acre.
A two year EarthGlue dust control application should consist of approximately 275 gallons of EarthGlue per acre.
Step 1 add water
Approximately 1,725 gallons of water to 2,000 gallon or 3,450 gallons of water to a 4,000 gallon water truck for a 6 month application.
Approximately 1,450 gallons of water to 2,000 gallon or 2900 gallons of water to a 4,000 gallon water truck for a one year application.
Approximately 1,000 gallons of water to 2,000 gallon or 2,000 gallons of water to a 4,000 gallon water truck for a two year application.

Step 2 add EarthGlue
Add 1 tote of EarthGlue to a 2,000 gallon water truck
Add 2 tote of EarthGlue to a 4,000 gallon water truck
for a 6 month application.
Add 2 totes of EarthGlue to a 2,000 gallon water truck
Add 4 totes of EarthGlue to a 4,000 gallon water truck
for a one year application.
Add 4 totes of EarthGlue to a 2,000 gallon water truck
Add 8 totes of EarthGlue to a 4,000 gallon water truck
for a two year application.
Step 3
Spray Earthglue / water solution to desired area a 2,000 gallon water truck should cover about 2 acres a 4,000 gallon water truck should cover about 4 acres

RECOMMENDED APPROACH

As with materials, the performance of unpaved road Envirotac II or EarthGlue treatment is also influenced by how well the road is prepared before application and then how appropriately it is applied. The approach recommended in this guide advocates following conventional road construction and Envirotac II/ EarthGlue application procedures. **Prepare the Road Before Application**
Spraying Envirotac II or EarthGlue onto an unprepared traffic area is a waste of time and money. The dust control effect will be short lived, ride quality will not be improved, and the road will soon require some form of maintenance, which will reduce the life of the treatment. Prior to any

Envirotac II or EarthGlue application, shape the road to ensure an adequate crown is present, and then blade to provide a quality driving surface. Open drainage ways and culverts to ensure that water can be channeled away from the road during rain events. If Envirotac II or EarthGlue is going to be applied as part of a regravelling activity, incorporate Envirotac II/EarthGlue into the compaction water and mix this in with the aggregate.

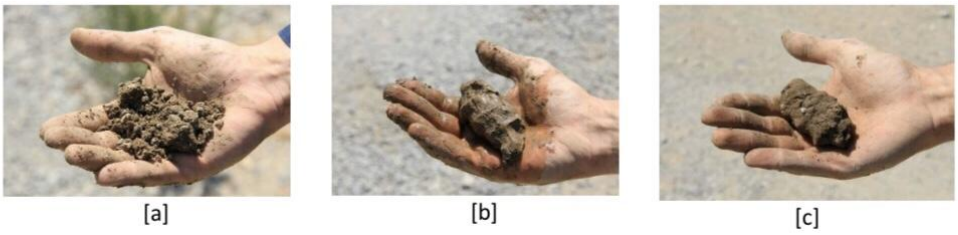
Drainage

Good drainage is imperative for optimal performance of unpaved roads, especially in terms of all-weather passability, reducing slipperiness and erosion, and preventing potholes. Drainage includes two components.

First the water must drain off the road as quickly as possible without eroding the surface. This is a function of road shape and providing an adequate crown is very important. A target crown of 5 percent (± 1%) assures that the road surface will shed rain. A crown of less than 4 percent can lead to water ponding on the road, which is dangerous for road users and will create soft spots, which will quickly turn into potholes. A crown of more than 6 percent will exacerbate erosion during runoff and may cause truck trailers to slip off the road. Crown requirements should be relaxed on steep grades and super-elevations to maintain safe driving conditions but still prevent water from running down the road. Please refer to NTSB guidelines on maximum grades for the type of vehicle traffic that will traverse your access roads. Water velocities should be kept to a minimum at all times. Target crowns must be maintained during all subsequent maintenance. Second, water should not be allowed to pond next to the road. This will lead to water ingress, material softening, and ultimately impassibility (that is, vehicles will get stuck). Culverts, ditches, and miter drains need to be included in the road geometry to channel this water away, but practitioners must understand and manage where the water goes.

Shaping a Road Before Spray-On Applications

Never shape a road when it is dry as this will loosen up sections of crust, segregate the materials, break down softer aggregates, and invariably result in a thin “biscuit” layer on the surface, which will break down quickly and travel to the side, leading to rapid loss of the new crown. Instead, spray the road surface with water to bring the top two to four inches (50-100 mm) to about near optimum moisture content. This can be determined simply by doing the “squeeze” test (that is, a handful of material, when squeezed in the hand should hold the shape of a ball without exuding water (too wet, (leaving a sheen of water on the skin], or crumble [too dry] when released).



(a)too dry (b) too wet (c) optimum moisture

Once the material is adequately moistened, use a motor grader preferably equipped with a slope meter or electronic grade control to achieve/maintain the required crown (typically five percent). Compact the road with a rubber-tire roller, smooth drum steel roller (no vibration) or even a grader-mounted roller to

consolidate the material and seal the surface. The grader blade should have good, new, straight edges to avoid rounding the surface.

Envirotac II access road applications

An Envirotac II topical only access road apply periodically as needed shall consist of 1 gallon of Envirotac II per 35sq ft of access road mixed at a rate of 1 part Envirotac II to 6 gallons of water(2 and ½ totes 687.50 gallons put into a 4,000 gallon water truck will cover 24,062.5sq ft of access road) (1 and ¼ totes to a 2,000 gallon water truck will cover 12,031.25sq ft of access road)

An Envirotac II six month access road shall consist of 1 gallon of Envirotac II per 60 sq ft of access road surface area preferably mixed into soil at a depth of 2 to 4 inches

An Envirotac II one year access road shall consist of 1 gallon of Envirotac II per 30 sq ft of access road surface area preferably mixed into soil at a depth of 2 to 4 inches

An Envirotac II two year access road shall consist of 1 gallon of Envirotac II per 15 sq ft of access road surface area preferably mixed into soil at a depth of 2 to 4 inches

Application Procedure

Equipment Needed Forklift, Roller, Blade or Skiploader or Bomag, water truck

Here are the steps to apply Envirotac II topically to access road traffic areas

Step 1

Measure off a section road 24,062.5sq ft of access road if you have a 4,000 gallon water truck

1 and ¼ totes to a 2,000 gallon water truck will cover 12,031.25sq ft of access road if you have a 2,000 gallon water truck

Step 2

Add 2 ½ totes of Envirotac II to a 4,000 gallon water truck or

Add 1 ¼ totes of Envirotac II to a 2,000 gallon water truck

Step 3

Apply 1 coat Envirotac II/water solution to area wait for area to obtain optimal moisture

Step 4

Roll road

Step 5

Apply the remainder of the Envirotac II/ water solution

Here are the steps to mix in Envirotac II to traffic areas Step 1

Spray area with water

Step 2

Six month application Add 2 totes of Envirotac II to a 2,000 gallon truck 4 totes to a 4,000 gallon water truck.

One Year Application Add 2 totes of Envirotac II to a 2,000 gallon truck 4 totes to a 4,000 gallon water truck

Two Year Application: Add 4 totes of Envirotac II to a 2,000 gallon truck 8 totes to a 4,000 gallon water truck.

Step 3

Rip area with a skip loader or blade 2 to 4 inches

Step 4 Spray Envirotac II / water solution to ripped area with water truck

Step 5

Blade area to Grade

Step 6

Spray Envirotac II water solution to bladed area with water truck

Step 7

Roll area 

Step 8

Spray final coat of Envirotac II water solution

Envirotac II maintanence coat application

Once you mix in Envirotac II into a roadway you have the option to apply a maintenance coat on an as needed basis. This coat can be applied topically.

Step 1

Broom off fugitive dust that has accumulated on the road.

Step 2

Fill in and compact any potholes.

Step 3

Add 2 totes (550 gallons) to a 4,000 gallon water truck

1 tote (275 gallons) to a 2,000 gallon water truck

Step 4

Spray the access road area

Envirotac II farm field application

This application consists of creating a road or vehicle traffic staging area out of an existing farm field without bringing in sub base aggregate. After the use of the Envirotac II spayed area the area will be able to be ripped or tilled and converted back to farmland.

An Envirotac II farm field application shall consist of 1 gallon of Envirotac II per 15 sq ft

Step 1 Scrape off topsoil

Step 2 water field

Step 3 scarify field

Step 4 Add 4 totes of Envirotac II to a 2,000 gallon truck 8 totes to a 4,000 gallon water truck.

Step 5 spray Envirotac II/ water solution

Step 6 Blade or disc to grade

Step 7 roll multiple times

Step 8 spray area with final coats and let cure 1-3 days depending on weather conditions (humidity and temperature)
Step 9 ripp or till after use to convert the area back to farmland and replace topsoil.

EarthGlue access road applications

An EarthGlue topical only access road apply periodically as needed shall consist of 1,000 gallons of EarthGlue per acre of access road mixed at a rate of 1 part EarthGlue to 1 part water

Application Procedure

Equipment Needed Forklift, water truck

Here are the steps to apply EarthGlue topically to access road traffic areas

Step 1

Add EarthGlue to a ½ filled water truck and create a half EarthGlue half water solution.

Step 2

Apply EarthGlue /water solution to area wait for area to obtain optimal moisture

Step 3

Apply a second coat of EarthGlue/ water solution.

Step 4

Limit traffic until the road dries.

EarthGlue maintanence coat application

Step 1

Broom off fugitive dust that has accumulated on the road.

Step 2

Fill in and compact any potholes.

Step 3

Add 2 totes (550 gallons) to a 4,000 gallon water truck

1 tote (275 gallons) to a 2,000 gallon water truck

Step 4

Spray the access road area

BMP Practices

From the California Best Management Practices Handbook

"*BMPs for application and Spill Prevention and Control Procedures . (per WM-1 Envirotac II/EarthGlue is delivered in 275 gallons IBC totes. Envirotac II/EarthGlue Totes should be stored on a flat surface and should be prevented from freezing. Staging Envirotac II/EarthGlue totes on plastic sheeting surrounded by sandbags is recommended.WM-2, Envirotac II/EarthGlue is a non hazardous material*

product label shall not be removed and the lid of the IBC tote should remain secure.WM-4 Spills of Envirotac II/EarthGlue and wastes shall be contained and cleaned up immediately with a shovel and placed in proper container.
Spills identified during a rain event shall be covered and protected from storm water run-until they can be cleaned up.
Spills shall not be buried, or washed or cleaned up with water.
Water shall not be used to clean up spills. Dry methods such as rags and absorbents shall be used. Water used for decontaminating sampling equipment shall not be allowed to enter storm drains or watercourses and shall be collected.
All collected spill cleanup waste shall be disposed of in accordance with BMP WM-6, "Hazardous Waste Management."
Water overflow or minor water spillage shall be contained and shall not be allowed to discharge into drainage facilities or watercourses.
Proper storage, clean-up and spill reporting instructions for hazardous materials stored or used on the project site shall be posted at all times in an open, conspicuous and accessible location.
Waste storage areas shall be kept clean, well organized and equipped with ample clean-up supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers and liners shall be repaired or replaced as needed to maintain proper function.
The Contractor shall oversee and enforce proper spill prevention and control measures and shall ensure appropriate personnel are assigned and trained for spill cleanup.
Section 8 Spill Prevention and Control WM-4 2 of 4
Spill Prevention and Control WM-4
Cleanup and Storage Procedures
Equipment and materials for cleanup of spills shall be available on site and spills and leaks shall be cleaned up immediately and disposed of properly.
Minor Spills
Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill. Use absorbent materials on small spills. Water shall not be used to clean up spills. Do not bury the spill or spilled materials.
Remove the absorbent materials promptly and dispose of properly. The practice commonly followed for a minor spill is:
Contain the spread of the spill.
Recover spilled materials.
Clean the contaminated area and/or properly dispose of contaminated materials. Semi-Significant Spills
Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.
Clean up spills immediately:
Notify the project foreman immediately. The foreman shall notify the Engineer.
Contain spread of the spill.
If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
If the spill occurs during rain, cover the spill with tarps or other material to prevent contaminating runoff.
WM-10 Envirotac II/EarthGlue are soil binders and will not generate liquid waste. Envirotac II/EarthGlue shall be prevented from being sprayed into a storm drain by covering storm drains in the vicinity of the Envirotac II/EarthGlue application and creating and earthen dam in the vicinity of an Envirotac II/EarthGlue application. Envirotac II/EarthGlue are acrylic co polymer soil binders and are not concrete based. An Envirotac II application will not produce residual solid waste."

Envirotac II/EarthGlue 275 gallon IBC Tote Dimensions

Measurements and Weight
2,600 lbs (1,180 kg) 40"L X 48"W X 46"H (101L x 121w x 117h cm)
- Kind of packaging

275 intermediate bulk container (IBC Poly Tote)
NMFC#: 156240 Liquid Plastic Material Freight Class 60 Harmonized Code/ Schedule B # 3905210000
• It is a Non hazardous material

YouTube Links

Dust Control for coal power plants **https://youtu.be/EHZhtxeOnPc**
Envirotac II Application
https://youtu.be/5sphhi-zCTY
Application of a metric ton of Envirotac II
https://youtu.be/vVn1IS92iyM
Envirotac II for construction lay down yard
https://youtu.be/HOjc8nlmmOY
Dust Control for Runway shoulders
https://youtu.be/NdRltKhLeR4
Dust Control for Housing Pads
https://youtu.be/lF_ZEZxCwP0
Housing Pad Erosion and Dust Control
https://youtu.be/tw6iR5T71-w
Envirotac II Solar Farm
https://youtu.be/_YysM3pPEfY

ENVIROTAC II
APPLICATION RATE

SOIL TYPE AASTO		
A-1 / A-3	0	
A-2,4 / A-2,5	20	
A-2,6 / A-2,7	40	
A-4 / A-5	80	
A-7 / A-7,5 / A-7,6	100	
CAPACITY		
LIGHT	0	
MEDIUM	25	
HEAVY	50	
LONGEVITY		
6 MONTHS	0	
12 MONTHS	10	
24 MONTHS	20	
GRADE / SLOPE		
FLAT	0	
UP-HILL	20	
DOWN-HILL	20	
CLIMATE		
DRY	0	
WET / DRY	5	
WET / HUMID	10	
TOTAL VALUE		

GALLON SQFT	VALUE
45-44	0
43-42	10
41-40	20
39-38	30
37-36	40
35-34	50
33-32	60
31-30	70
29-28	80
27-26	90
25-24	100
23-22	110
21-20	120
19-18	130
17-16	140
15-14	150
13-12	160+

DIRECTIONS: To use application matrix locate the parameters that apply to your specific prodject or application. Add up all five values on the right and compare to "gallon sqft / value" chart.

EXAMPLE: PRODJECT SPECIFICATIONS

- ★SOIL TYPE: A-2,6
- ★CAPACITY: MEDIUM
- ★LONGEVITY: 24 MONTHS
- ★GRADE / SLOPE: FLAT
- ★CLIMATE: WET / DRY

	SOIL TYPE AASTO		
	A-1 / A-3	0	
	A-2,4 / A-2,5	20	
★	A-2,6 / A-2,7	40	40
	A-4 / A-5	80	
	A-7 / A-7,5 / A-7,6	100	
	CAPACITY		
	LIGHT	0	
★	MEDIUM	25	25
	HEAVY	50	
	LONGEVITY		
	6 MONTHS	0	
	12 MONTHS	10	
★	24 MONTHS	20	20
	GRADE / SLOPE		
★	FLAT	0	0
	UP-HILL	20	
	DOWN-HILL	20	
	CLIMATE		
	DRY	0	
★	WET / DRY	5	5
	WET / HUMID	10	
	TOTAL VALUE		90

	GALLON SQFT	VALUE	
	45-44	0	
	43-42	10	
	41-40	20	
	39-38	30	
	37-36	40	
	35-34	50	
	33-32	60	
	31-30	70	
	29-28	80	
★	27-26	90	90
	25-24	100	
	23-22	110	
	21-20	120	
	19-18	130	
	17-16	140	
	15-14	150	
	13-12	160+	

TOTAL PRODJECT VALUE OF 90=
26sqft - 27sqft PER GALLON

ENVIROTAC II

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ENVIROTAC SC SUPER CONCENTRATE

ENVIROTAC II

Letter of Introduction

Environmental Products & Applications is the innovative leader for dust and erosion control in the soil stabilization field. Our Envirotac line of acrylic copolymers are extremely effective in stabilizing all soil particles, creating durable, long lasting roads. It will lower job costs and replace traditional methods such as rock for sub-bases and geo grids, hydroseed, matting, etc. for erosion control.

The Envirotac line of polymers, when applied will penetrate into the soil. Upon curing it will bond the soil particles with a nano polymerized grid. This will laminate the soil particles in place, yet have tensile strength to avoid fracturing. The treated area becomes very resilient to wear and our unique elasticity ensures the road will survive the onslaught of vehicular traffic, rain, snow and various conditions that can wear down a road. The product is non hazardous, dries odorless, and transparent.

The Envirotac line of polymers are very affordable. With the volumes we move annually we are able to operate on margins much lower than our competitors, yet our products out perform competing products at a fraction of the cost.

History: Environmental Products and Applications has been in the soil stabilization business for over 25 years. Our Envirotac line of polymers are the most used dust control/soil stabilization chemical by the Untied States Armed Forces. The US Military trusts our products to stabilize runways, helicopter pads, roads, etc. It was at Camp Rhino, Afghanistan where it received the colorful moniker Rhino Snot, when it was used to prevent helicopter "brown outs" a problem caused by loose soil becoming airborne, reducing visibility. Competitors have tried to copy our name, but they haven't been able to replicate our outstanding results. It is not uncommon to see an Osprey helicopter setting down on an Envirotac engineered helicopter pad or a C-130 landing on an Envirotac engineered runway.

I would like this opportunity for your organization to use our product so that it may experience the benefits of the Envirotac line of polymers as a solution for all of your soil stabilization needs.

Respectfully,

John Vermillion

John Vermillion
President

Made in USA

Envirotac II has been used by the following agencies/ companys:

United States Army	*United States Marines*	*United States Navy*
United States Air Force	*Army Corps of Engineers*	*Rio Tinto*
Granite Construction	*Asarco*	*Freeport-McMoRan*
Skanska	*Ames Construction*	*Tutor Saliba*

United Nations, Haiti relief effort.....and so many more

Environmental Products & Applications, Inc.

ENVIROTAC II

RhinoSnot™ Soil Stabilizer

ENVIROTAC II / RHINO SNOT

Envirotac II is the ultimate soil/ stabilizer / dust abatement on the market today. It's a high performance, low cost acrylic polymer. When applied to various soils or sands, it will penetrate and extend down into the soil to create a tough layer of protection. Upon drying, Envirotac binds the soil's particles together by forming a clear, plastic, and resin bond.

FEATURES:

- Eliminates Fugitive Dust
- Prevents sediment loss
- Easy to Apply
- Does Not Leach
- Works with in-situ soils
- Non Hazardous

CALL NOW: +760-777-8035

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Environmental Products & Applications, Inc.

ENVIROTAC SC
SUPER CONCENTRATE

ENVIROTAC SC

Envirotac SC consists of environmentally safe chemicals which work on principles of nano technology. The acrylic co-polymer creates nano composites within the soil fabrics and modifies the soils micro-structures. This increases the intorconnection between soil particles producing a homogeneous and isotropic material. Increasing load bearing strengths of all soils.

FEATURES:

- 56 to 60% active solids
- Increased tensile strength
- Easy to Apply
- Increases load bearing strength
- Works with in-situ soils
- Non Hazardous

CALL NOW: +760-777-8035

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Environmental Products & Applications

CASE STUDY
ROAD STABILIZATION

2016

US Military Base in the Middle East

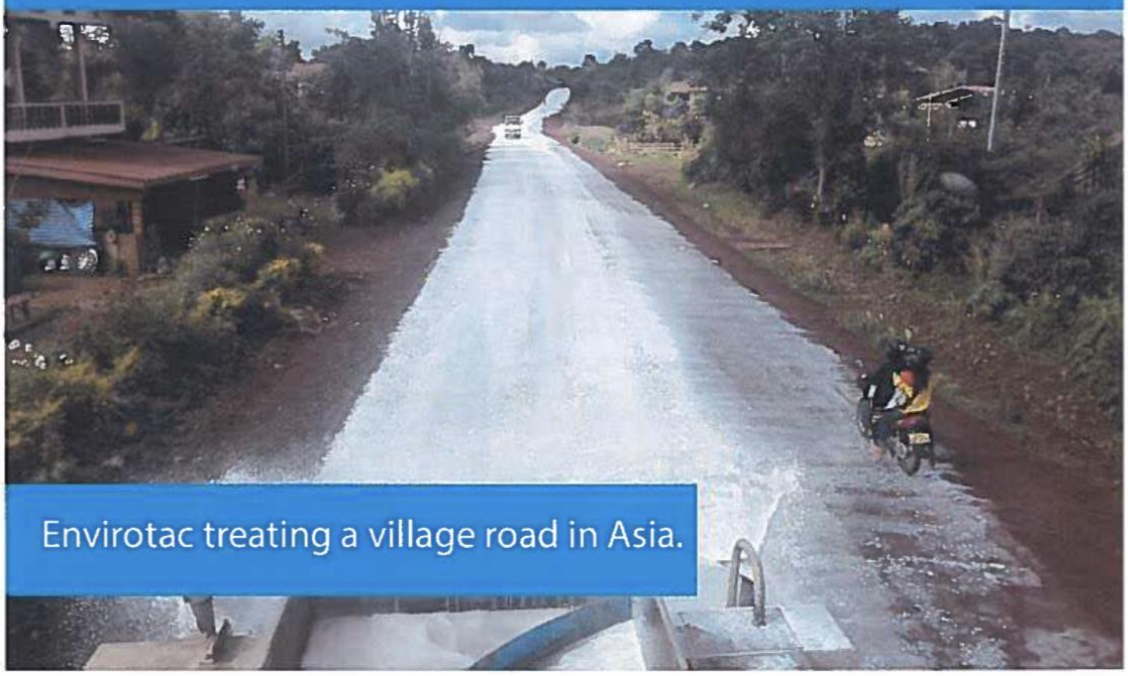
Envirotac has been the United States Military's preferred soil stabilization chemical, whether it be in the United States or throughout the globe

Environmental Products & Applications, Inc.

www.eparhino.com

Envirotac has been used for roads throughout the World.

We pioneered the industry in regards to using polymers for soil stabilization. The United States Military has used our Envirotac line of soil stabilizing products for years. Whether it be stabilizing in-situ soils for supply roads, helicopter pads, even runways for heavy cargo planes. Envirotac has been the preferred method. Envirotac polymers have been used on Mine Haul roads in Chile, RM roads in Canada, Plantations in Malaysia, and numerous places around the globe. If Soil Stabilization is required, you can count on the Envirotac line of polymers to perform.



Envirotac treating a village road in Asia.

Environmental Products and Applications has been in the Soil Stabilization / Dust Control industry for over 27 years. Our revolutionary line of Envirotac polymers combined with our certified experts can develop and plan measures to control fugitive dust on any site. Our Envirotac line of polymers are environmentally compliant and are made with no VOC's.

Performance: The Envirotac line of polymers, when applied will penetrate into the soil. Upon curing it will bond the soil particles with a nano polymerized grid. This will laminate the soil particles in place, yet have tensile strength to avoid fracturing. The treated area becomes very resilient to wear & our unique elasticity ensures the road will survive the onslaught of vehicular traffic, rain, snow & various conditions that car wear down a road. The product is non hazardous dries odorless, & transparent. It easy to use & can be applied out of anything that sprays water


ANNIES PLACE

Advantages of using Envirotac

Envirotac presents many advantages over traditional methods on a jobsite. It will save money, increase safety, added conservation with no environmental impact, control sediment, reduce maintenance, increase the load bearing strength of soils and save time throughout the project. With 27 years of experience we can format a dust control plan for any job. We have strong references and guarantee the best price , most efficient products, and the industry leading professionalism. Feel free to contact any of our qualified technicians and we will be happy to answer any questions.

Save Money: Envirotac roads are cheaper than gravel, bitumen, and asphalt roads. It more affordable than constantly maintaining dirt roads. An Envirotac stabilized road will prevent premature wear on vehicles and tires as well.

Safety: Stabilizing roads is a must when concerning safety. A poor sub-base can cause vehicles to malfunction and even lose control. Treating a road with Envirotac will not deteriorate the traction of the road, although in many cases it will increase it.

Environmentally Friendly: Our Envirotac line of polymers are manufactured with the Environment in mind. They are safe to treat soils with and will not harm humans, wildlife, or vegetation. Also Envirotac greatly reduces the amount of water used to control a site.

Maintenance: A smooth road that maintains it's grade presents less stress on a vehicle. After an application of Envirotac you will not need to constantly regrade the road as Envirotac will keep soils in place and prevent wash-boarding, potholes, and rutting.

Reduce Man Hours: Envirotac will increase load bearing PSI on all soils. We have lab results where we have increased CBR over 650%. If any soil is in question send it to our in-house lab and we can test it..

Time: Envirotac is easy to apply and saves time when compared to traditional methods of paving roads. One crew can easily treat a mile of road for stabilization.

Mine Tailings Dust Control

Environmental Products & Applications, Inc.

Dust Control

With over 27 years in the industry, our certified experts know exactly how to eliminate dust on your site. We have treated more Mine tailings with chemical stabilizer than any other company in the world. With our main office in the Coachella Valley we deal with some of the most stringent air quality requirements in the world. Put our knowledge to the test, we will save you time and money.

"They have treated my tailings for over 15 years. They have always done an outstanding job and their applications have preformed as stated if not better." Dave Johnson - FHI Plant Services

Fugitive Dust

Eliminate fugitive dust (pm10 & pm2.5) from leaving your site.

Money

Prevent fines from Air Quality Agencies and other agencies overseeing dust related issues. Reduce job cost with a one time application that can last years.

Water

With a one time application there is no need to keep applying water to control dust. With severe droughts effecting areas throughout the globe this is a simple cost effective solution.

Respiratory Illness

Pm10 and PM2.5 can be extremely harmful if it enters the airways and settles in the lungs.

Reduce Man Hours

A simple application will eliminate the need for a dedicated crew to control dust related issues on-site, such as watering and equipment breakdowns related to dust.

Safety

Fugitive dust can cause a number of issues on a job site including but not limited to; lack of visibility, respiratory related illness, and equipment malfunction.

Environmentally Friendly

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www.eparhino.com

Slope Stabilization
Erosion Control

Environmental Products & Applications, Inc.

Erosion Control

Our Envirotac line of polymers work great to protect slopes and embankments from Erosion. Envirotac being an acrylic polymer will penetrate the earths soil and upon curing will bond the soil particles together. This will "laminate" the area reducing water and wind penetration keeping soil sediment in place. Unlike mulch applications it will not sheet off but will stay adhered to the soil. Also it will not harm vegetation and in many instances will increase germination rates.

"The use of Envirotac has been great in our SWPPP plan. It's easy to apply and holds up better than previous mulch and binders we have used in the past." - Jack Gorman, Clean Sweep Environmental

Wind

Envirotac was designed to withstand jet blast many hundreds of miles per hour to eliminate FOD (Foreign Object Damage). So you can apply with confidence that an area treated with Envirotac will withstand heavy winds and prevent wind based Erosion.

Water

Envirotac will reduce the permeability of the treated soils preventing water from over saturating the soil particles preventing water based erosion.

Germination

Envirotac promotes germination in seed. Even though Envirotac prevents over saturation of soils due to rain events it still keeps moisture in. It replicates a terrarium to a degree by keeping moisture in the soils longer. Also by keeping soil in place this prevents seed displacement. Studies have shown two to five day earlier germination rates along with 20% higher germination rate of grasses.

Sediment Control

Envirotac keeps sediment in place and helps prevent it from going into storm water drains. In a recent Turbidity test we greatly reduced the NTU's (Nephelometric Turbidity Units) from the untreated baseline.

Does Not Leach

Once Cured Envirotac will not re-emulsify and wash away or leach with water.

Environmentally Friendly

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SAFETY DATA SHEET

Envirotac II®

Revision Date 07/01/2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Envirotac II®
Product code	:	EIIT, EIID, EIIB

Manufacturer or supplier's details

Company	:	Environmental Products & Applications, Inc.
Address	:	78900 Avenue 47, Suite 106 La Quinta, CA 92253
Telephone	:	1-888-674-9174, 1-760-7778035

Medical Emergency Phone Number: 1-888-674-9174 or if immediate emergency dial 911

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

Recommended use of the chemical and restrictions on use

Recommended use	:	Dust Control, Erosion Control, Soil Stabilization
Restrictions on use	:	For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Color	white
Odor	sweet

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Potential Health Effects

Carcinogenicity:

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

Contains no hazardous ingredients according to GHS

SECTION 4. FIRST AID MEASURES

General advice	:	Show this material safety data sheet to the doctor in attendance.
If inhaled	:	Move to fresh air. If symptoms persist, call a physician.
In case of skin contact	:	Wash off with soap and water.
In case of eye contact	:	Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.
If swallowed	:	Do not induce vomiting. Seek medical attention if symptoms develop. Provide medical care provider with this SDS.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	none
Specific hazards during fire fighting	:	Cool closed containers exposed to fire with water spray.
Specific extinguishing methods	:	
Further information	:	This product is an aqueous mixture that will not burn. Dried product film will burn in a fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	No special environmental precautions required. Prevent product from entering drains.

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Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	No special precautions are needed in handling this material.
Conditions for safe storage	:	Keep container closed when not in use. Keep in a dry, cool place.
Materials to avoid	:	Do not freeze. No special restrictions on storage with other products.
Storage temperature	:	>= 40 °F / 4 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection	:	No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection		
Material	:	Nitrile rubber
Remarks	:	For prolonged or repeated contact use protective gloves.
Eye protection	:	Safety glasses
Protective measures	:	No special protective equipment required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	white
Odor	:	sweet
Odor Threshold	:	No data available
pH	:	4.0 - 5.5
Melting point/freezing point	:	32 °F
Boiling point/boiling range	:	212 °F
Flash point	:	Not applicable

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Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not classified as a flammability hazard
Upper explosion limit	:	upper flammability limit not determined
Lower explosion limit	:	lower flammability limit not determined
Vapor pressure	:	not determined
Relative vapor density	:	not determined
Density	:	8.600 - 9.100 lb/gal
Solubility(ies)		
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	not determined
Viscosity		
Viscosity, dynamic	:	not determined
Solid Content, % by weight:	:	33 - 40
VOC, % by weight	:	not determined

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Hazardous decomposition products	:	Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

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No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Aspiration toxicity

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.
The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

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No data available

Respiratory or skin sensitization

No data available

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No data available

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SECTION 14. TRANSPORT INFORMATION

Special precautions for user

Remarks : Not dangerous goods

Domestic regulation

International Regulation

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) report

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

US State Regulations

California Prop 65 This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

TSCA	On TSCA Inventory
DSL	Not in compliance with the inventory
REACH	Not in compliance with the inventory
AICS	Not in compliance with the inventory
NZIoC	Not in compliance with the inventory
ENCS	Not in compliance with the inventory
KECI	Not in compliance with the inventory
PICCS	Not in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
TWINV	Not in compliance with the inventory

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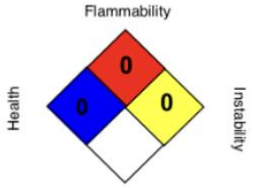
Inventories LegendTSCA (USA), DSL (Canada), REACH(Europe), AICS (Australia), NZIoC (New Zealand), ENCS (Japan), KECI (Korea), PICCS (Philippines), IECSC (China), TWINV (Taiwan)

SECTION 16. OTHER INFORMATION

Prepared by: Global Regulatory Department - phone: 1-760-779-1814 - email: epajav@yahoo.com

Further information

NFPA:



HMIS III:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to the Environmental Products & Applications, Inc. from its suppliers, and because Environmental Products & Applications, Inc. has no control over the conditions of handling and use, Environmental Products & Applications, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Environmental Products & Applications, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of Environmental Products & Applications, Inc. products to comply with all applicable federal, state and local laws and regulations.

ENVIRONMENTAL PRODUCTS & APPLICATIONS

GUIDE TO DESIGN AND CONSTRUCTION OF ENVIROTAC PAVEMENT LOW TO MODERATE TRAFFIC ROADS

INTRODUCTION

ENVIROTAC line of products are an acrylic copolymer for the construction of roads with less than suitable in-situ soils. ENVIROTAC with its crosslinked polymer construction is able to change and enhance the mechanical properties of soil, thus making it possible to construct roads in before inadequate conditions.

In the past few decades there has been a global push to have a "greener" planet, finding ways and alternatives to build our ever-growing infrastructure with less negative impact on our planet. Our line of ENVIROTAC product achieves just that, by not only offering an environmentally friendly alternative but an economical one as well when compared to petroleum-based pavements.

COPOLYMER APPLICATION PROCESS

After Site reconnaissance, testing, in-situ compaction is achieved (95% compaction). It is time to start the ENVIROTAC flexible paving process. The following will give detail on the final process of ENVIROTAC road construction.

- **ENVIROTAC SC Dilution Ratios:** The water truck will need to first be filled with water than the polymer will be added, this will stop the aeration (foaming) of the polymer. The ENVIROTAC SC will be diluted 6-8 parts water to 1-part polymer. When filling the water truck enough room will need to be left for the polymer to be added (I.G. 4000-gallon water truck fill with 3350 gallons of water and 650 gallons of ENVIROTAC SC). To incorporate the polymer into the water, truck a

portable trash pump is the preferred choice unless the water truck is equipped with a reverse feed suction system, it can also be gravity fed into the top of the water truck using a forklift

.

- **POLYMER APPLICATION, COMPACTION AND BLENDING**

Using a reclaimer, the ENVIROTAC polymer will need to be blended into the soil.

Note: At all time a water truck will need to be applying ENVIROTAC SC dilation until OMC is achieved throughout pavement depth. OMC thresholds are (+-2%)

After in-situ soil is are initially blended the reclaimer and sheepsfoot roller will need to be used to continue blending and rough compact soil. The sheepsfoot roller will follow

behind the reclaimer compacting the blended material, while ENVIROTAC SC dilution is being applied. This will continue until all in-situ soil are properly blended and OMC is achieved. OMC will need to be checked in multiple locations throughout the distance of the project.

- **GRADE AND FINISH ROLL**

After all blending, rough compaction and OMC is achieved through out treated pavement section, a motor grader and smooth drum roller will be used to set grade and finish roll pavement. When grade and compaction are complete, final grade will need to be performed to achieve a uniform surface. All materials removed should be bladed to the edge of treated area and placed outside of road area.

\

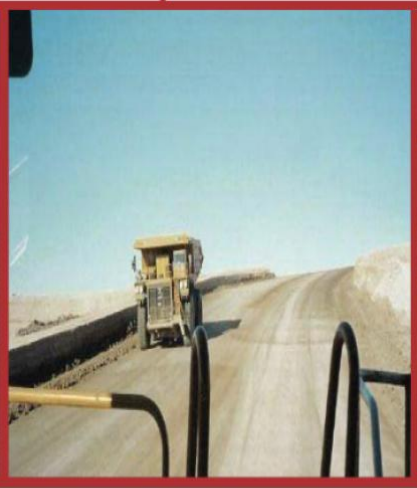
- **SEAL COAT**

When final graded pavement is dry (usually 24-48 hours) seal coats will need to be applied. We recommend no less than 3 seal coats; seal coats will be applied at the same 6:1 - 8:1 dilution rate. First seal coat application will need a minimum of 24 hours to cure before second coat is applied, next coat can be applied within 6-8 hours after.

EarthGlue

HAUL ROAD DUST CONTROL AGENT
SOIL STABILIZER

ENVIRONMENTALLY SAFE / LOW COST / EFFECTIVE


PRESENTED BY:

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Environmental Products & Applications, Inc.

OVER 27 YEARS EXPERIENCE

Environmental Products & Applications, Inc.
78900 Avenue 47, Ste. 106
La Quinta, CA 92253

Earth Glue

PERFORMANCE

Earth Glue is an environmentally friendly acrylic polymer. It is added to water and when applied it will penetrate the soils and bond them together creating a tough layer of protection. Earth Glue is a recycled product from the polymer industry that has been reworked to serve the dust control and soil stabilization sectors. It will out perform salt based and lignin products traditionally used for dust control on roads.

COST

This is the lowest cost polymer product used for dust control/ soil stabilization on the market. It was developed to compete with salt based products and not only does it outperform them it is roughly the same cost or many instances cheaper. It is also more environmentally friendly, then not only salt based products but other traditionally used products.

FEATURES

- **Greatly reduces dust/Pm10**
- **Stabilizes soils**
- **Environmentally Safe**
- **Non Corrosive**
- **Does Not Leach**
- **Does not get slimy/slippery when wet**
- **Cost effective**
- **Reduces maintenance on roads**
- **Use less every year as it does not wash away**
- **Longer life span then traditional methods**
- **Does not dissapate in rain**
- **Great for sub-base**

CALL OR EMAIL FOR A QUOTE

Environmental Products & Applications, Inc.

EarthGlue

APPLICATIONS

COUNTY ROADS

RESIDENTIAL ROADS

PARKS TRAILS

HAUL ROADS

MINE TAILINGS

CONSTRUCTION PADS

HISTORICAL SITES

PARKING LOTS

EROSION CONTROL

EarthGlue

APPLICATION RATES

Application Description		1 Gallon Coverage*** (Undiluted)	Dilution Ratio Water: Envirotac II
	Mixed/Scarified Into Soil (3"-4" depth)	14-35ft ^{2}	multiple*
	Heavy Haul Roads	18-28 ft ^{2}	3:1 multiple**
	Unpaved Road (Surface)	18-60 ft ^{2}	4:1
	Slopes (non traffic)	100-175 ft ^{2}	6:1
	Dust Control (non traffic)	190-290 ft ^{2}	8:1
	Mine Tailings	175-280 ft ^{2}	8:1

* Request application instructions
** Multiple applications at a lesser rate may be recommended
***Coverage rates differ on traffic volume, traffic weight, soil type and compaction.

SECTION 313216-14 – STABILIZING SOIL WITH EARTH GLUE

PART 1 - GENERAL

1.1 SUMMARY

A. Section describes using Earth Glue for soil stabilization and road construction using in situ soil.

1.2 DEFINITIONS

A. Earth Glue: A proprietary, non-hazardous, water-based polymer that is used for soil stabilization and dust control when diluted with fresh water and applied to soils and allowed to cure.

B. Treated Area: Area to be treated with Earth Glue to improve compaction and compressive strength in order to handle designated traffic.

1.3 COORDINATION:

A. Coordinate application of Earth Glue on public roads to allow continuous access or establish a detour until application and curing is complete. Construction or Mine traffic can pass while wet at slow speeds.

1.4 INFORMATIONAL SUBMITTALS

A. Product Data: Manufacturer's product data and installation instructions.

B. Material Safety Data Sheet for Earth Glue and dyes if used.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified supervisor certified or recommended by the manufacturer (Environmental Products & Applications) should oversee preparation and application. In-house operations may be taught as well.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Earth Glue: Deliver Earth Glue totes or drums near to the application site prior to application. Earth Glue can be stored outside but covered storage is preferred. Storage area should have room to allow access by the applicator vehicle. Do not let freeze.

1.7 SITE CONDITIONS

A. Grade: Earth Glue can be applied to any slope but may require different application techniques due to run-off.

B. Site Conditions: Site should be dry and free of standing water. Enough fill and aggregate should be present to meet the necessary grade and allow for crowning if a wear course is required for the final layer.

C. Weather Conditions: Earth Glue should be applied during dry conditions where it will have 8 hours of uninterrupted curing time between rainfall. Temperature should be 55 degrees Fahrenheit or higher.

PART 2 - PRODUCTS

2.1 EARTH GLUE

A. EARTH GLUE containers should be free from dents, holes, perforations or any deformations that may have caused the contents to be exposed to the atmosphere prior to use.

2.2 WATER

A. Fresh water should be used to mix with Earth Glue. Salinity should be less then 1% with Total Suspended Solids (TSS) less than 300 mg/L.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be treated for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within the treated area, remove the soil and contamination as directed by Architect.

3.2 PREPARATION

A. Scarify the area to be treated up to 4inches. Different procedures including wind-rowing the area can be used based on the soil conditions and application in order to expose soil for application.

3.3 APPLICATION

A. Mix Earth Glue and water to achieve recommended mix ratio. Recommend to add Earth Glue to water to avoid bubble formation. Personnel handling the mixture should wear proper PPE. Earth Glue will stain clothing.

B. Uniformly apply the Earth Glue mix upon the exposed area and work into the soil by spreading or compacting the soil.

C. Rescarify/wind-row and re-apply until soil is uniformly coated up to 4inches deep and at least 1 gallon per 35 square feet or more of undiluted Earth Glue is applied.

3.4 SOIL STABILIZATION FINISHING

A. For an application in which a final wear course such as asphalt or chip seal will be applied, compact the treated area to achieve a smooth finish and allow to cure for 24 hours before applying the final coat.

3.5 ROAD FINISHING

A. Crown or grade the final road shape and compact to the required finish. Apply a final top coat and allow to cure for 24 hours before using.

3.6 CLEANUP AND PROTECTION

A. Promptly clean equipment and vehicles used for application such as pumps, tanks, hoses and nozzles with water.

B. Tightly seal any totes or barrels with unused Earth Glue to prevent evaporation.

C. Erect temporary fencing or barricades and warning signs as required to protect treated areas from traffic. Maintain fencing and barricades throughout curing period and remove after the area is stable. Any barricades constructed must still be accessible by emergency and fire equipment during and after construction.

END OF SECTION 313216-14

SECTION 313216-15 – STABILIZING SOIL WITH EARTH GLUE

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1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within the treated area, remove the soil and contamination as directed by Architect.

3.2 PREPARATION

A. Check the surface and make sure the compaction is at 95% or greater. If lose gravel or course aggregate is present; it is best to sweep the area with a power broom.

3.3 APPLICATION

A. Mix Earth Glue and water to achieve recommended mix ratio. Recommend to add Earth Glue to water to avoid bubble formation. Personnel handling the mixture should wear proper PPE. Earth Glue will stain clothing.

B. Uniformly apply the Earth Glue mix upon the area until soil is uniformly coated with at least 1 gallon per 60 square feet or more of undiluted Earth Glue is applied.

C. If the area is designated as a heavy haul road; multiple applications at a lesser concentration is recommended.

3.4 SOIL STABILIZATION FINISHING

A. For an application in which a final wear course such as asphalt or chip seal will be applied, compact the treated area to achieve a smooth finish and allow to cure for 24 hours before applying the final coat.

3.5 ROAD FINISHING

A. Crown or grade the final road shape and compact to the required finish. Apply a final top coat and allow to cure for 24 hours before using.

3.6 CLEANUP AND PROTECTION

A. Promptly clean equipment and vehicles used for application such as pumps, tanks, hoses and nozzles with water.

B. Tightly seal any totes or barrels with unused Earth Glue to prevent evaporation.

C. Erect temporary fencing or barricades and warning signs as required to protect treated areas from traffic. Maintain fencing and barricades throughout curing period and remove after the area is stable. Any barricades constructed must still be accessible by emergency and fire equipment during and after construction.

END OF SECTION 313216-15

MATERIAL SAFETY DATA SHEET

DATE OF PREPARATION
May 6, 2009

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

This Product Is Nonionic, it is not Cationic

PRODUCT NUMBER
EG106

PRODUCT NAME
Earth Glue

MANUFACTURER'S NAME
Environmental Products & Applications, Inc.
78-900 Avenue 47, Suite 106
La Quinta, CA 92253

Telephone Numbers and Websites

Regulatory Information	(888) 674-9174
Medical Emergency	(888) 674-9174
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

ACTIVE SOLIDS

30 to 40 % active solids

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
0.2	108-05-4	**Vinyl Acetate**		
		ACGIH TLV	10 PPM	100 mm
		ACGIH TLV	15 PPM STEL	
		OSHA PEL	10 PPM	
		OSHA PEL	20 PPM STEL	
0.5	14808-60-7	**Quartz**		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	
0.1	14464-46-1	**Cristobalite**		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.05 mg/m3 as Resp. Dust	
2	471-34-1	**Calcium Carbonate**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
2	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

EFFECTS OF OVEREXPOSURE

EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

In a confined area vapors in high concentration may cause headache, nausea or dizziness.

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
None generally recognized.

CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

HMIS Codes

Health	1*
Flammability	0
Reactivity	0

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
Not Applicable	N.A.	N.A.	Not Applicable

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Alcohol Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
Not Applicable
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
Wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
Wear safety spectacles with unperforated sideshields.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	8.72 lb/gal	1044 g/l
SPECIFIC GRAVITY	1.05	
BOILING POINT	212 - 213 °F	100 - 100 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	91%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	
pH	7.0	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

1.14lb/gal	137g/l	Less Water and Federally Exempt Solvents
0.11lb/gal	13g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
108-05-4	**Vinyl Acetate**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
14808-60-7	**Quartz**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
14464-46-1	**Cristobalite**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
471-34-1	**Calcium Carbonate**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	**Titanium Dioxide**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

US Ground (DOT)
Not Regulated for Transportation.
Canada (TDG)
Not Regulated for Transportation.
IMO
Not Regulated for Transportation.

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-05-4	Vinyl Acetate	0.1	

CALIFORNIA PROPOSITION 65
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
TSCA CERTIFICATION
All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

AQUATIC BIOASSAY & CONSULTING LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

July 30, 2007

Mr. Justin Vermillion
EP&A Envirotac, Inc.
78900 Avenue 47, Suite 106
La Quinta, CA 92253

Dear Mr. Vermillion

We are pleased to present the enclosed acute bioassay report. The tes was conducted under the guidlines prescribed in "Static Acute Bioassay Procedures for Hazardous Waste Samples" California Department of Fish and Game, 1988. The results were as follows:

Client:	EP&A Envirotac, Inc.
Sample I.D.:	Earth Glue
Date Received:	07/12/07
ABC LAB. NO.:	SWC707.077

DOHS (TITLE 22) HAZARDOUS WASTE BIOASSAY USING FATHEAD MINNOWS

96 HOUR LC50 =	>750	mg/l
STATUS =	Pass	

Respectfully yours,

Thomas (Tim) Mikel
Laboratory Director

AQUATIC BIOASSAY AND CONSULTING LABORATORIES, INC.
29 North Olive Street
Ventura, CA 93001
(805) 643-5621

DOHS Bioassay for Hazardous Waste (Title 22)

SAMPLE INFORMATION

CLIENT:	EP&A Envirotac, Inc.	07/12/07
SAMPLE I.D.:	Earth Glue	SWC0707.077

WATER QUALITY

DILUTION WATI Reconst. Fresh		AERATION Single Bubble Air	
CONTROL HARDNESS		CONTROL ALKALINITY	
Beg: 40 mg/l	End: 41 mg/l	Beg: 31 mg/l	End: 32 mg/l
SAMPLE HARDNESS		SAMPLE ALKALINITY	
Beg: 57 mg/l	End: 56 mg/l	Beg: 43 mg/l	End: 44 mg/l

ORGANISM INFORMATION

SPECIES:	Pimephales promelas	DATE RECD:	06/21/07
COMMON NAME:	Fathead Minnow	AVERAGE LNTH:	39 mm
SOURCE:	Thomas Fish Co.	AVERAGE WT:	0.75 gm
CARRIER:	California Overnight	NO. FISH / TANK:	10

TEST DATA

	INITIAL			24 HOURS				48 HOURS				72 HOURS				96 HOURS			
DATE:	07/17/07			07/18/07				07/19/07				07/20/07				07/21/07			
TIME:	1043			1124				1130				1145				1300			
CONC.	Dis. Oxy.	Temp. dg.C	pH	Dis. Oxy.	Temp. dg.C	pH	#Fish Dead	Dis. Oxy.	Temp. dg.C	pH	#Fish Dead	Dis. Oxy.	Temp dg.C	pH	#Fish Dead	Dis. Oxy.	Temp. dg.C	pH	#Fish Dead
0 (Con.)	9.0	20.2	8.0	8.5	19.7	7.8	0	8.1	19.5	7.8	0	7.8	19.7	7.9	0	7.7	19.5	7.9	0
400 mg/l	9.0	20.3	7.9	7.9	19.6	7.5	0	6.3	19.5	7.3	0	7.0	19.6	7.6	0	6.5	19.7	7.5	0
400 mg/l	8.9	20.3	7.8	8.0	19.7	7.5	0	6.2	19.6	7.3	0	7.0	19.6	7.5	0	6.5	19.7	7.5	0
750 mg/l	8.9	20.3	7.8	8.0	19.7	7.5	1	6.5	19.5	7.6	0	6.2	19.7	7.4	1	6.3	19.7	7.5	0
750 mg/l	8.8	20.3	7.8	8.0	19.8	7.5	0	6.4	19.5	7.5	0	6.6	19.8	7.4	0	6.2	19.7	7.5	0

FINAL DATA

TOTAL MORTALITIES	
0 (Con.)	0
400 mg/l	0
400 mg/l	0
750 mg/l	2
750 mg/l	0

FINAL RESULTS

96 HOUR LC50 =	>750 mg/l
STATUS =	Pass
CALCULATION METHOD =	Binomial Test

For Elizabeth Mathwin
Michael Machuzak, Chief Biologist

Date 7-31-07