P.O. Box 515429
Dallas, Texas 75075
Ph: (972) 669-3390
Fax: (469) 241-0896
Email: oseicorp@msn.com
Web: www.osei.us

This Presentation will show the Missouri Dominator Truck Stop Under Ground Storage release contaminating Soil and Ground Water, Under the Pavement Was Remediated With OSE II

OSE II has been used on Ground Water, as well as Underground hydrocarbon and Hydro Carbon Based spills in the US and Globally Since 1989

Third-Party Performance Testing

US EPA Testing

US EPA & National Environmental Technology Application Center (NETAC)

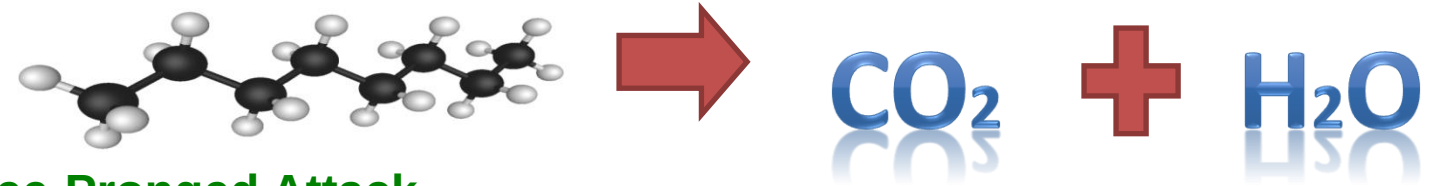
A 28-day reduction test concluded that OSE-II significantly reduces petroleum mass.

There have been 35 toxicity tests performed on OSE II in numerous countries, on fresh and ocean water species showing an average LC50 or LD 50 of 1900 ppm or above, there are also eco toxicity and endocrine disruptor tests as well. The US EPA set the virtually non toxic level at 100 ppm or above.

See Link http://osei.us/wp-content/uploads/35-toxicity-tests.pdf

How OSE II Works

- Combination of bio-surfactants, enzymes and nutrients
- Enables indigenous micro-organisms to efficiently and completely break down contaminant
- Leaves only harmless CO**2** and water



Three-Pronged Attack

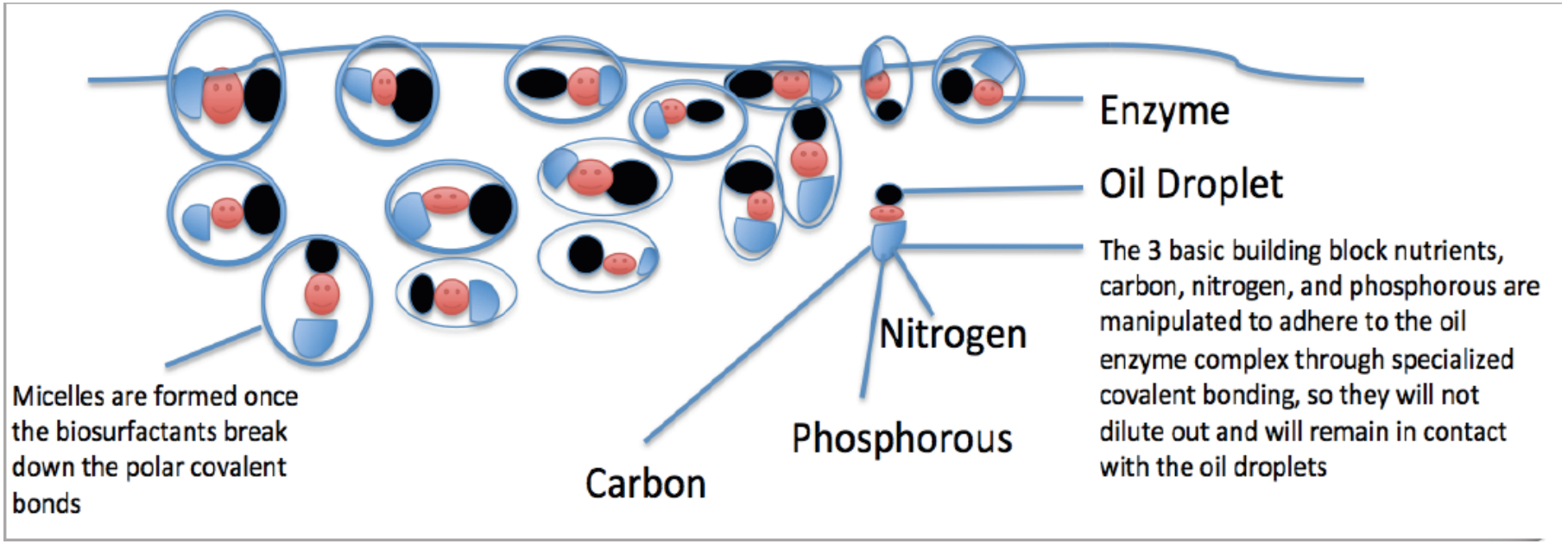
1. Immediately attacks the molecular structure of the hydrocarbons reducing toxicity to micro organisms.
2. Provides enzymes to act as catalysts increasing metabolic breakdown
3. Provides nutrients to enhance microbial action

OSE II emulates mother natures own process, except OSE II speeds the process up to reduce hydrocarbons in a matter Of days or weeks in stead of decades, or not all in some scenarios……..

See link http://osei.us/tech-library-pdfs/2011/4-OSEI%20Manual_EmulatingNature.pdf

OSE II's Bio Surfactant Are Produced by a Combination of Plant and Animals

Oil Spill Eater International (OSEI) utilizes bio surfactants as its first mode of action in the Oil Spill Eater II product. The bio surfactants initiate micelle formation when introduced into an oil/water environment. Micelles are activated when mixed with a sufficient amount of water such that each micelle is then completely surrounded by a thin layer of water molecules. **The outside of the micelle is hydrophilic, meaning it likes water, while the interior portion is hydrophobic, meaning it avoids water. This provides a way to dissolve** molecules, like fats, oils and grease that do not like water, in water.



OSE II is Listed By The US EPA and is Safe

US EPA Testing: The US Congress requires the US

EPA to keep a list of products that can be legally used on US Navigable waters, which is why there is a list of products on the National Contingency Plan (NCP) List.

OSE II is listed on the NCP List.

A 28-day mass reduction required by the NCP List concluded that OSE-II significantly reduces petroleum mass. See link to US EPA information on OSE II https://www.osei.us/wp-content/uploads/US-EPA-notebook-with-technical-information-on-OSE-II-highlighted-section-vI-1.pdf

Tested by US EPA and found to be completely non-toxic. See link for the 35 Marine Species Toxicity test https://www.osei.us/wp-content/uploads/35-toxicity-tests.pdf

Safe for human, animal, plants and marine life. See OSHA Letter link https://www.osei.us/tech-library-pdfs/2011/9-OSEI%20Manual_OSHA.pdf

Does not require any special handling or protective equipment.

Can be applied in-situ or ex-situ, depending on the location.

Missouri Dominator Truck Stop and Under Ground/Ground Water hydrocarbon Release

- Site Conceptual Model:

– Active truck and vehicle fueling facility
– 3 Diesel and 2 Gasoline USTs
– Commercial Land Use
– 3 miles east of Missouri River
– 0 – 40 feet Silts with Clay lenses
– 40 – 100 feet fine to coarse Sand
– City of Rock Port public water supply wells 200 feet downgradient
– City wells only 100-110 feet TD
– Detailed core analysis and downhole geophysical logging confirmed NO confining unit within the upper 100 feet. Surficial aquifer is 20-125 feet.
– 3 Source Areas – Diesel Pumps, Gas Pumps, Gasoline UST
– TRIAD Approach

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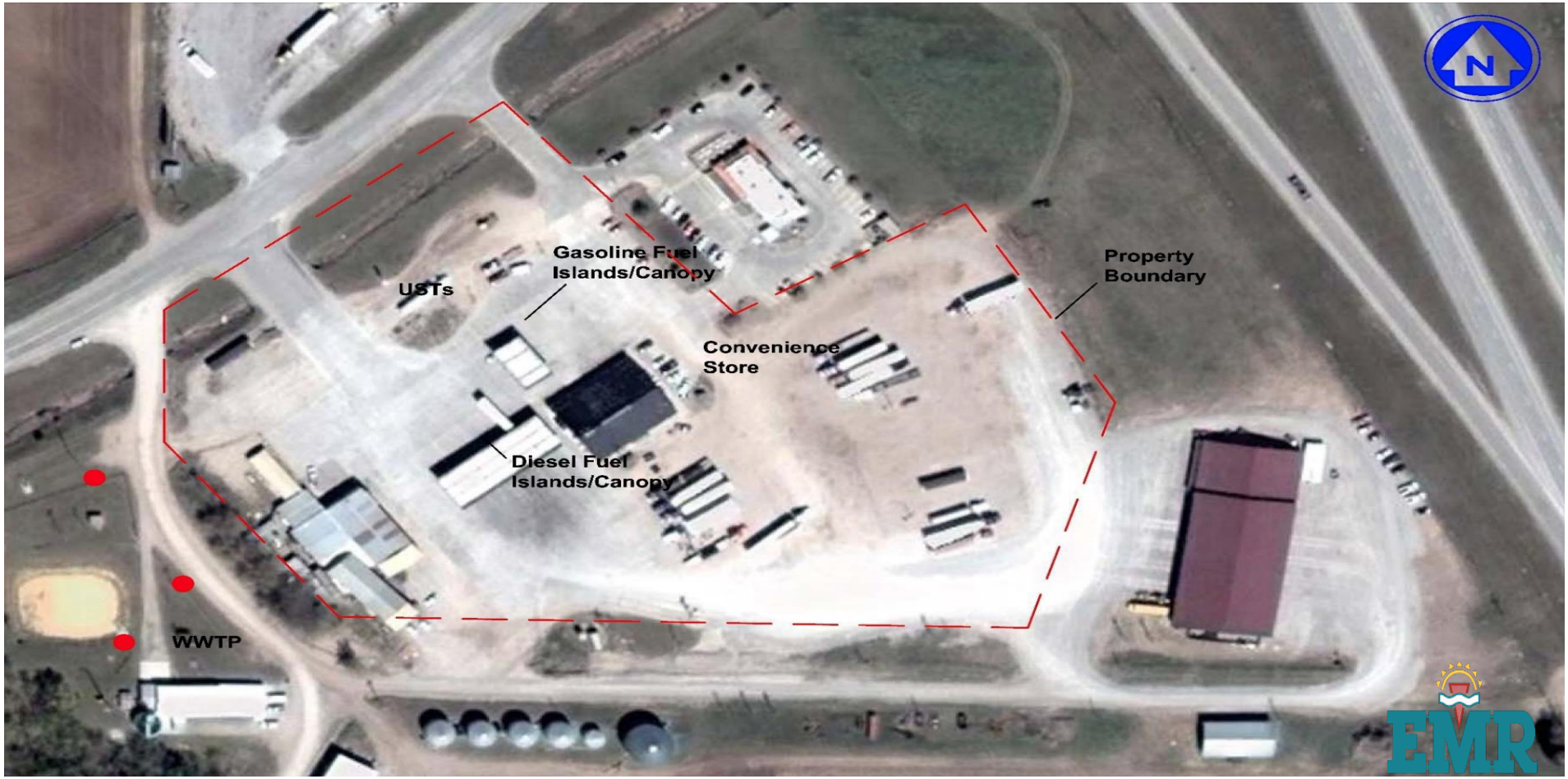
Missouri Dominator Truck Stop and Under Ground/Ground Water hydrocarbon Release

Dominator Fuels Site Map



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Missouri Domminator Truck Stop and Under Ground/Ground Water hydrocarbon Release

Missouri Dominator Truck Stop and Under Ground/Ground Water hydrocarbon Release

Predictable Removal Of Free Product

• Follow-up meeting at MDNR was conducted to further discuss the site specific TPH-DRO target levels to properly demonstrate adequate free product removal in the diesel dispenser area on site.

• All parties agreed to collect one additional geotechnical sample and a product sample so that a DRO SSTL in soil could be calculated to demonstrate FP removal.

• The soil porosity and product density analyses were completed.

• EMR utilized equations by J. Michael Hawthorne, PG to determine the maximum allowable TPH-DRO concentration in soil that would result in a NAPL saturation of 10%. The calculations are provided below:

TPH-DRO = (NAPL Saturation) (Porosity) (Product Density) (Bulk Density) (10-6)

TPH-DRO = (0.10) (0.47) (0.8468g/cm3) (1.42g/cm3) (10-6)

Site Specific Target Level for TPH-DRO = 28,429 mg/kg

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Missouri Dominator Truck Stop and Under Ground/Ground Water hydrocarbon Release

Remedial Action Plan

Remedial Strategy – InSitu Enhanced Bioremediation

- Increase DO with Commercial Blowers
- Increase microbial count and activity by the injection of Oil Spill Eater II (OSEII).
- Utilized on site
- Aerated OSE II in poly tank prior to addition of OSEII
- Pressure injection of OSE II track mounted Geo probe and grout pump.
- Pressure injection of OSEII using Geo probe and double diaphragm pump.
- Contingent HVE event (FP removal)

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Missouri DNR approving the remedial plan for the Dominator Truck Site With OSE II

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

FEB 05 2015

Mr. Ken Suter
SACO Snappy Stores
9807 Kaw Drive
Edwardsville, KS 66111

RE: Dominator Fuels #29, 1306 Highway 136 West, Rock Port, Atchison County, MO
ST0011376, R0008361

Dear Mr. Suter:

The Missouri Department of Natural Resources' Hazardous Waste Program, Tanks Section, reviewed the January 2, 2015, CAP/RD Addendum 2 with Soil Geotechnical and Product Density Testing submitted by EMR Incorporated (EMR) for the above referenced site. The Department received this document on January 6, 2015.

This report discusses the site activities conducted in response to the December 2014 meeting with the Department regarding the metrics and endpoint targets of the Corrective Action Plan (CAP). A soil sample was collected in the vicinity of groundwater monitoring well MW-6, as this area contains the highest concentrations of total petroleum hydrocarbon-diesel range organics (TPH-DRO). The sample was then analyzed for porosity and soil bulk density. A sample of free product (FP) was also collected from MW-6 to be analyzed for product density. These parameters were used to calculate the site specific target level (SSTL) for TPH-DRO. The Department agrees with this SSTL.

In-situ enhanced bioremediation (ISEB) using a combination of ORC Advanced and Oil Spill Eater II (OSEII). An aerator device will be on-site during the OSEII injections to oxygenate the water. ORC Advanced is to be injected in 58 injection points located in the vicinity of MW-5, MW-6, MW-1 and MW-11. There will be three areas of the site that will be injected, beneath the gasoline dispensers, between the gasoline dispensers and the underground storage tank (UST) pit, as well as beneath the diesel pump island. Approximately two weeks following these injections, if the dissolved oxygen has increased sufficiently, the OSEII injections will commence within two weeks. A second ISEB injection event will be conducted approximately three months following the initial event if needed.

- Performance groundwater monitoring will be completed 15, 30 and 60 days following the initial injections. If the second injection is warranted, the above scheduled groundwater monitoring will again follow. The samples will be analyzed for benzene, toluene, ethyl benzene, total xylenes, naphthalene, methyl tert-butyl ether (MTBE), total petroleum hydrocarbon-gasoline range organic (TPH-GRO) and TPH-DRO. The target levels for the dissolved phase will be the SSTLs without biodegradation.

Recycled Paper

- Three soil confirmation samples will be collected within the vicinity of groundwater monitoring well MW-6 post-remediation. Samples will be collected at 15 – 16 feet below ground surface (bgs) and at 19 – 20 feet bgs at the soil/groundwater interface, and analyzed for TPH-DRO. The SSTL for TPH-DRO at this site will be 28,429 parts per million (ppm). If the samples exceed this target level, additional remediation may be required.

- The FP remediation activities at this site will be considered complete if the confirmation sampling are below the SSTLs agreed upon, and if the measured thickness of the FP layer is less than 0.05 feet. As mentioned previously, the Department will agree to establishing this target thickness of FP in the wells as an endpoint metric, in this instance, since this criteria is also tied to verification sampling being below the established target levels. This, however, is a site-specific decision and will not be considered at other sites, under other scenarios, or if the confirmation soil sampling component is dropped.

Following completion of remediation activities, quarterly groundwater monitoring will be conducted in order to establish plume stability.

Within 90 days from the date of this letter, please submit to the Department a report of completed activities. In addition, please update the Department of site activities in order to allow personnel to schedule site visits.

The file for this site is maintained by the Department's Hazardous Waste Program, located at 1730 East Elm Street, Jefferson City, Missouri 65101. To view this file or obtain copies, please contact the Custodian of Records at (573) 522-4293, e-mail custodianofrecord@dnr.mo.gov, or visit our Web site for additional information at http://www.dnr.mo.gov/sunshincrequests.htm.

Please direct questions regarding the Petroleum Storage Tank Insurance Fund to the Fund Administrator at (573) 761-4060 or (800) 765-2765.

Thank you for your efforts to comply with Missouri's UST Law and Regulations. If you have questions regarding this letter, you may contact me at the Hazardous Waste Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or at (573) 526-3987.

Sincerely,

HAZARDOUS WASTE PROGRAM

Vickie Olive

Vickie Olive, Environmental Specialist
Risk Based Corrective Action Unit

VO:sw

c: Jeffrey A. Humenik, P.G., EMR Incorporated
Petroleum Storage Tank Insurance Fund

Missouri Dominator Truck Stop Ground Water Injections Of OSE II

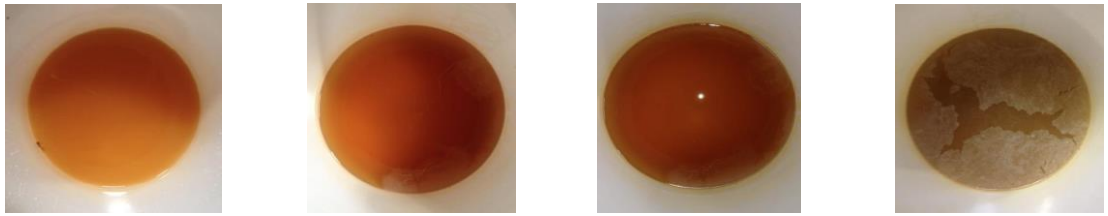
OSE II Added To Aerated Water Prior To Groundwater Injection

OSE II Injection Process Using The Geoprobe System

This Presentation will show The Missouri Dominator Truck Stop Gasoline and diesel fuel Release From Under Ground Storage Tanks Contaminating Soil and Ground Water

Microbial Plate counts increased dramatically from 42 cfu/ml August 14, 2015 to 142,000,000 cfu/ml on September 15, 2015

Aerobic Heterotrophic Plate Count Results as of Sept 2015



The fact the color of the extracted effluent in the Petri dishes became more turbid with each extraction shows the enormous amount of indigenous bacteria growing, which means the bacteria are digesting the released hydrocarbons to CO2 and water

Dominator Lab Results

Once OSE II is applied, some levels may increase slightly since OSE II will be partitioning [removing] the fuel from the soil, however once this occurs, contaminant rebound in the ground water will not occur in the future, since the associated contaminated soil will be addressed.

GW Results as of Sept 2015 – **20 days post OSE II Injection**:

- Area 1 (MW-11)
  - Benzene initially increased to 12 mg/L then decreased to 1.09 mg/L
  - MTBE initially increased to 8.2 mg/L then decreased to 1.7 mg/L
  - Naphthalene increased from 0.4 to 1.7 mg/L then decreased to 0.1 mg/L
  - TPH GRO decreased from 16 mg/L to 4 mg/L
- Area 2 (MW-1)
  - Benzene increased slightly from 0.3 mg/L to 0.6 mg/L
  - MTBE decreased from 10 mg/L to 5.7 mg/L
  - Naphthalene increased from 0.53 to 0.57 mg/L
  - TPH GRO decreased from 12 mg/L to ND (<2 mg/L)
- Area 3 (MW-5 & MW-6)
  - No measurable free product (MW-5 & MW-6)
  - Naphthalene decreased from 0.16 to 0.08 mg/L (MW-6)
  - TPH-GRO – 1.7 mg/L to <0.11 mg/L (MW-5) & 2.7 mg/L to <0.11 mg/L (MW-6)
  - TPH-DRO decreased from 154 mg/L to 48 mg/L then up to 85 mg/L (MW-6)
  - TPH-DRO – 42 mg/L to 10 mg/L (MW-5)

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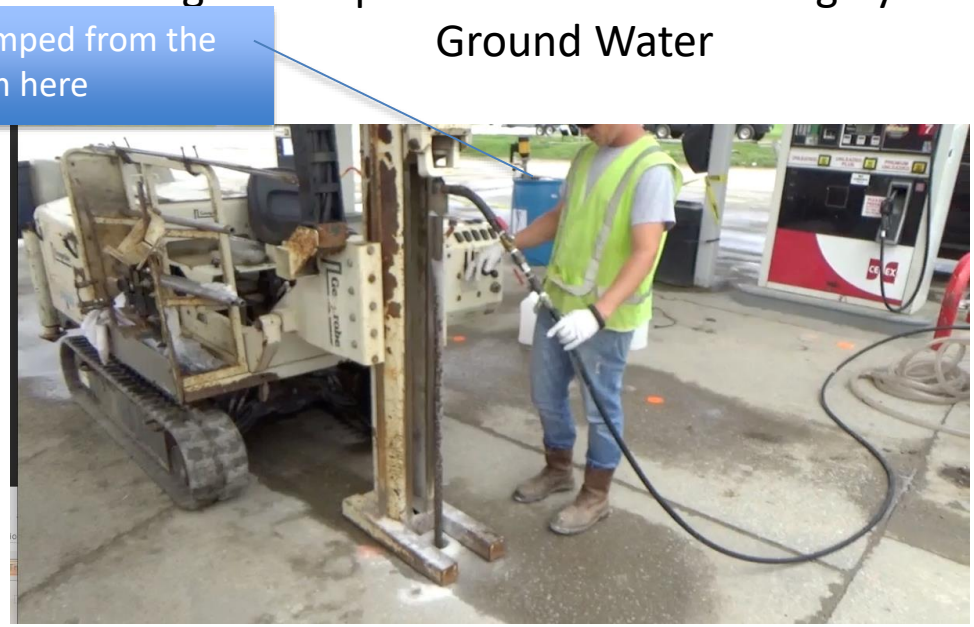
Missouri Dominator Truck Stop and Under Ground/Ground Water hydrocarbon Release

Site Conclusion

The test results were satisfactory to the DNR, where the site was closed a short time later.

OSE II once again showing how capable it is at remediating hydrocarbons even in sensitive Ground Water



OIL SPILL EATER II protecting the most sensitive environments