

# OS Product Application Guidelines



# Outline

## INDUSTRY / DIVISION

## INVENTORY and USE FREQUENCY

Product	Size	QTY	Frequency
Product	Suggested Volume	Suggested Inventory	Daily - Used often as needed ER - Emergency Spill Reserve

## REPLENISHMENT

Reorder frequency

## TREATMENT

The most common use of each product per location

## APPLICATION

The best method to apply each product

## REFERENCE

Non-Specific examples of this division in the United States

## EQUIPMENT

Recommended tools and equipment to most efficiently disperse OS Products in each particular division

# GAS STATION

## Individual Stations



Product	Size	QTY	Use
OS LIQUID	20 L Kit	1	Daily
OS POWDER	14 kg Bag	1	Daily

**REPLENISHMENT:** Monthly as needed

### TREATMENT

Stain Removal	Gasoline and diesel stains on asphalt and cement
Fire Retardant	Eliminate flammability of spilled gasoline
Spill Response	Emergency Spill Kit up to a 200 L spill

### APPLICATION

- OS Liquid is either pumped or sprayed directly from the 5 gallon bucket or transferred to smaller pump containers to cover the spill surface area.
- A thin spray of OS Liquid on gasoline and diesel spills daily provides effective stain control for a clean and safe station.
- OS POWDER is used directly from the bag to contain and absorb spills.

### EQUIPMENT



3 gallon hand pump



Battery operated 20 L  
Bucket pump



15 Gallon mobile sprayer

# Glossary

## Oil & Gas Division

- Drilling Rig (Land) – Individual pumping or fracking station
- Security Shack – A security check point to enter the drilling site. As all drill site vehicles pass through this check point, inventory for routine spill maintenance is necessary.
- Drilling Station house – Throughout a drilling site there are several stocking drilling station warehouses for site equipment and emergency supplies.
- Drilling Maintenance vehicle – Company owned, employee vehicles that are used throughout the drill site. Typically pick-up style vehicles.
- Compressor Station – A natural gas compression station.
- Drilling Rig (Water) – Individual floating rig.
- ER Vessel – An emergency response vessel deployed from land to respond to spills and provide emergency support to rigs and other vessels.
- Water Treatment Facility – Facility that treats drilling and fracking waste water for disposal.

# Oil & Gas

## Individual Rig (Land)



Product	Size	QTY	Use
OS LIQUID	208 L Drum Kit	1	Daily
OS POWDER	14 kg Bag	5	Daily

**REPLENISHMENT:** Monthly as needed

### TREATMENT

Spill Maintenance	Daily spill response. Max 340 L Spill
Fire Retardant	Retard and suppress hydrocarbon fires
Degreaser	Clean oil from drilling equipment

### APPLICATION

- Spills on Hard Surfaces - OS Powder is used first to berm/contain and absorb pooling oil. OS Liquid is then used to remediate the soil and hard surfaces.
- Powder is applied by shovel or poured directly from the bag. Larger dispersant devices are not necessary.
- OS Liquid is applied directly from the drum or transferred to smaller 20L buckets with a Drum Pump. Gasoline powered pumps may be used to reach larger spill areas.
- Use Step 1 to degrease equipment – Transferred to smaller spray bottles.

**REFERENCE:** Existing drilling client base orders monthly as needed.

### EQUIPMENT



HONDA Model# WX10TA  
Medium volume gas powered pump



Drum Pump



6HP, 100PSI, Large volume gas  
powered water pump

# Oil & Gas Security Guard Shack



Product	Size	QTY	Use
OS LIQUID	20 L Kit	1	Daily
OS POWDER	14 kg Bag	1	Daily

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Spill Maintenance	Daily spills from drilling related vehicles
Stain Removal	Remove stains made by vehicles
Spill Response	Emergency Spill Kit up to a 200 L spill

## APPLICATION

- Spills on Hard Surfaces - OS Powder is used first to berm/contain and absorb pooling oil. OS Liquid is then used to remediate the soil and hard surfaces.
- Powder is applied by shovel or poured directly from the bag. Larger dispersant devices are not necessary.

**REFERENCE:** Existing drilling client base orders monthly as needed.

**EQUIPMENT:** No additional equipment necessary

# Oil & Gas Station House



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	4	ER
OS POWDER	OSPowder800	2	ER
OS POWDER	OSPowder771 (25) 14kg Bags	2	ER

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Emergency Response	Medium to large spills up to 2650 L
Fire Retardant	Flammability retarded and fires suppressed

## APPLICATION

- OS Powder creates an instant berm to contain a spill. It is then applied to the remaining pooling oil both on land and water.
- OS Powder can be thrown with a mechanical blower to cover extensive surface area.
- OS Liquid is applied to surfaces and soil that have absorbed the spill.
- Medium and large volume pumps may be necessary to cover large surface areas.

**REFERENCE:** Replenishment is consistent and dependent on drilling activity and spill frequency.

## EQUIPMENT



Dual pump/dual tank  
Skid mounted spray system



Customized Straw Blower  
To throw OS Powder



6HP, 100PSI, Gas powered  
Water pump

# Oil & Gas Maintenance Vehicle



Product	Size	QTY	Use
OS LIQUID	3.78 L	1	Daily
OS POWDER	4.53 kg	1	Daily

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Spill Maintenance	Daily spills from drilling activities
Spill Response	Emergency Spill Kit up to a 56 L spill

## APPLICATION

- Spills on Hard Surfaces - OS Powder is used first to berm/contain and absorb pooling oil. OS Liquid is then used to remediate the soil and hard surfaces.
- Powder is applied by shovel or poured directly from the bag. Larger dispersant devices are not necessary.
- OS Liquid is applied directly from the bottle to the spill area.

**REFERENCE:** U.S. Rig Fleets have 200-300 personnel driving Ford F150 or similar pick-up trucks per company. Each vehicle is stocked at all time to address small spills.

**EQUIPMENT:** No additional equipment necessary



# Oil & Gas Compressor Station



Product	Size	QTY	Use
OS LIQUID	208 L Drum Kit	1	Daily
OS POWDER	14 kg Bag	5	Daily

**REPLENISHMENT:** 2-3 times annually

## TREATMENT

Spill Maintenance	Daily spill response from hydraulic, diesel and condensate oil spills. Max 340 L Spill
Fire Retardant	Retard and suppress hydrocarbon fires
Degreaser	Clean oil from equipment

## APPLICATION

- Spills on Hard Surfaces - OS Powder is used first to berm/contain and absorb pooling oil. OS Liquid is then used to remediate the soil and hard surfaces.
- Powder is applied by shovel or poured directly from the bag. Larger dispersant devices are not necessary.
- OS Liquid is applied directly from the drum or transferred to smaller 20L buckets with a Drum Pump.

**REFERENCE:** U.S. compressor stations re-order 2x annually

## EQUIPMENT:



Drum Pump



Battery operated 20 L  
Bucket pump

# Oil & Gas Water Treatment Plant



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	1	Daily
OS POWDER	OSPowder800	2	Daily

**REPLENISHMENT:** OS Powder is replenished monthly

## TREATMENT

Spill Maintenance	OS Powder is used to remove oil in drilling/fracking waste water
Yard Maintenance	OS Liquid is used to clean spills made on the ground and hard surfaces at the facility

## APPLICATION

- OS Powder is applied to the water treatment pools and removes oil from the water's surface.
- Powder is applied by large shovels. Larger dispersant devices are not necessary.
- OS Liquid is transferred to convenient containers such as 20 L buckets.

**REFERENCE:** U.S. water treatment centers re-order monthly.

## EQUIPMENT:



Battery operated 20 L  
Bucket pump



# Oil & Gas Drill Rig (Water)



Product	Size	QTY	Use
OS LIQUID	OSLiquid 20 L Kit Skid (10 Kits)	1	Daily
OS POWDER	OSPowder800	1	ER
OS POWDER	OSPowder771 (25) 14kg Bags	1	Daily

**REPLENISHMENT:** As needed

## TREATMENT

Spill Maintenance	OS Liquid & OS Powder are used daily for spill maintenance
Emergency Response	Emergency Response is for smaller spill incidences
Degreaser	OS Liquid is used to degrease drilling area and equipment

## APPLICATION

- OS Powder provides an immediate and custom spill berm and is applied to the pooling spill on land and water. It is applied by the bag or shovel.
- OS Liquid is used to clean smaller spills on machinery and solid surface platforms.

## EQUIPMENT



Battery operated 20 L  
Bucket pump

# Oil & Gas Rig - ER Vessel / Station



Product	Size	QTY	Use
OS POWDER	OSPowder800	20	ER

**REPLENISHMENT:** Container quantity is suggested for adequate response to a large oil release. Replenishment is as needed.

## TREATMENT

Emergency Response	Suggested volume is for a 91,000 L release
--------------------	--

## EQUIPMENT



Gas Powered  
Powder  
thrower

# Oil & Gas Bulk Terminals & Oil Pipelines



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	1	ER
OS LIQUID	20 L Kit Skid (10 Kits)	1	Daily
OS POWDER	OSPowder800	4	ER
OS POWDER	OSPowder771 (25) 14kg Bags	1	Daily

**REPLENISHMENT:** As needed

## TREATMENT

Spill Maintenance	OS Liquid & OS Powder are used daily for spill maintenance on bulk terminal yards
Emergency Response	Emergency Response is sufficient for a 20,000 L spill. Enough to respond to ½ a transport tanker release

## APPLICATION

- OS Powder creates a spill berm and is applied to the pooling spill on land and water.
- OS Liquid is used to clean smaller spills on machinery and solid surface platforms.

**REFERENCE:** Large terminal operators re-order 20L kit skids 6-8 times annually for yard maintenance in addition to emergency response inventory.

## EQUIPMENT



Battery operated 20 L  
Bucket pump



6HP, 100PSI, Gas powered  
Water pump

# Oil & Gas Bulk Transport Tanker



Product	Size	QTY	Use
OS LIQUID	20 L Kit	1	Daily
OS POWDER	14 kg Bag	1-2	Daily

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Spill Maintenance	Daily diesel and product spills during oil transfer
Emergency Response	Emergency Spill Kit up to a 200 L spill

## APPLICATION

- Spills on Hard Surfaces - OS Powder is used first to berm/contain and absorb pooling oil. OS Liquid is then used to remediate the soil and hard surfaces.
- Powder is applied by shovel or poured directly from the bag. Larger dispersant devices are not necessary.
- OS Liquid is applied directly from the bottle to the spill area.

**REFERENCE:** This is a standard spill kit for bulk transport vehicles. Product volume and storage size depend on the storage capability of each vehicle.

**EQUIPMENT:** No additional equipment necessary

# Oil & Gas Bulk Rail Transport Rail Station House



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	2	ER
OS POWDER	OSPowder800	12	ER

**REPLENISHMENT:** As needed

## TREATMENT

Emergency Response	Inventory listed is the emergency response volume for ½ a crude oil rail car or a 56,000 L spill
Degreaser	OS Liquid can be used to degrease rail cars, tracks and equipment
Spill Response	OS Liquid remediates spills in soil and on hard surfaces

## APPLICATION

- OS Powder creates a spill berm and is applied to the pooling spill on land and water.
- OS Powder can be thrown with a mechanical blower to cover extensive surface area.
- OS Liquid is used to remediate releases on soil, rock and other hard surfaces. Gasoline powered pumps easily cover extensive surface area.

## EQUIPMENT



Customized Straw Blower  
To throw OS Powder



6HP, 100PSI, Gas powered  
Water pump

# Glossary

## Airport Division

- **Fire Emergency Vehicle** – Fire Truck - Provided is an example of a custom 3000 L dual compartment, dual pump, dual hose fire truck.
- The volume of OS Liquid needed is dependent on the gallons per minute possible by each response vehicle and the frequency emergency vehicles are used at a particular location.
- **Spill Response Trailer** – A customized trailer for the application of OS Liquid. It is a mobile trailer with large fan spray nozzles to spray OS Liquid over a jet fuel spill. This trailer is designed to retard jet fuel spills and eliminate a hazardous situation.
- **Refueling Vehicle** – The suggested use is for small jet fuel releases by the refueling crew. This is a portable and effective spill kit for the refueling vehicle.



# Airport Fire Emergency Vehicle



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	10	ER
OS POWDER	OSPowder800	5	ER

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Fire Suppressant	OS Liquid will retard and suppress Jet fuel and other hydrocarbon fires.
Emergency Response	OS Powder is used to berm and contain large pooling spills on land and water

## APPLICATION

- OS Powder creates a spill berm and is applied to the pooling spill on land and water.
- OS Powder can be thrown with a mechanical blower to cover extensive surface area.
- Volume of liquid needed depends on the GPM specifications of the emergency vehicles and pumps systems.

## EQUIPMENT



Customized Straw Blower  
To throw OS Powder



Dual Compartment / Dual Pump  
3000 liter  
Fire Response Trailer or Fire Truck

# Airport Spill Response Trailers



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	2	ER
OS POWDER	OSPowder800	2	ER

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Fire Retardant	OS Liquid response trailer is used to retard jet fuel and other hydrocarbon spills during transport and refueling.
Emergency Response	OS Powder is used to berm and contain large pooling spills on land and water

## APPLICATION

- OS Powder creates a spill berm and is applied to the pooling spill on land and water.
- OS Powder can be thrown with a mechanical blower to cover extensive surface area.
- OS Liquid retards flammability on contact. A response trailer is an efficient method to apply OS Liquid onto a spill.

## EQUIPMENT



Customized Straw Blower  
To throw OS Powder



Dual pump/dual tank - Skid mounted  
spray system mounted on a pick-up  
truck or trailer.

# Airport Maintenance Refueling Vehicle



Product	Size	QTY	Use
OS LIQUID	20 L Kit	1	Daily
OS POWDER	14 kg Bag	1-2	Daily

**REPLENISHMENT:** Monthly as needed

## TREATMENT

Fire Retardant	Retard small fuel releases during refueling
Spill Response	Emergency Spill Kit up to a 200 L spill

## APPLICATION

- OS Liquid concentrate is applied to all flammable liquids
- Powder is applied by shovel or poured directly from the bag. Larger dispersant devices are not necessary.
- OS Liquid is applied directly from the 20 L bucket or a bucket pump.

## EQUIPMENT:



Battery operated 20 L  
Bucket pump

# Glossary

## DPW Division

- The U.S. DPW is the Department of Public Works and has jurisdiction over the construction and maintenance services for state owned highways, parks and recreation areas. In addition, they oversee state sewer and waste treatment facilities.
- The DPW has station houses throughout the state highway system.
- Station houses retain both routine and emergency inventory for all materials necessary for the DPW to ensure the safety of their region and have the mechanical equipment and vehicles to respond to unforeseen emergencies including:
  - Highway accidents and hazardous spills
  - Rail accidents and hazardous spills
  - Hazardous incidents on major water ways

# DPW (Department of Public Works)

## Station House



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	2	ER
OS LIQUID	20 L Kit Skid (10 Kits)	1	Daily
OS POWDER	OSPowder800	4	ER
OS POWDER	OSPowder771 (25) 14kg Bags	1	Daily

**REPLENISHMENT:** As needed

### TREATMENT

Spill Maintenance	OS Liquid & OS Powder is used daily for spill maintenance on highways
Emergency Response	Emergency Response is sufficient for a 20,000 L spill. Enough to respond to ½ a transport tanker release.

### APPLICATION

- OS Powder creates a spill berm and is applied to the pooling spill on land and water.
- OS Liquid is used to clean smaller spills on machinery and solid surface platforms.

### EQUIPMENT



Customized Straw Blower  
To throw OS Powder



Dual pump/dual tank - Skid mounted  
spray system mounted on a pick-up  
truck or trailer.

# Large Spills New & Pre-Existing



Product	Size	QTY	Use
OS LIQUID	OSLiquid-275-1/2	TBD	Remediation
OS POWDER	OSPowder800	TBD	Remediation

## TREATMENT

**For treatment of new and pre-existing oil fields and oil pools.**

OS POWDER	Remediate new and pre-existing spills on water	OSPowder800 - treats 4500 L
OS LIQUID	New spills on soil	OSLiquid-275-1/2 - treats 1040 L
OS LIQUID	Older, deeper spills on soil	OSLiquid-275-1/2 - treats 350 L gallons

## APPLICATION

- OS Powder treats new and pre-existing spills on water the same.
- OS Liquid encapsulates all hydrocarbons at a 1:1 ratio. On pre-existing spills, OS Liquid must penetrate deep into the soil. OS Liquid is applied generously to ensure contact with the entire spill and treatment and remediation averages a 3:1 ratio.

## EQUIPMENT



Customized Straw Blower  
To throw OS Powder



6HP, 100PSI, Gas powered  
Water pump



Truck pulled soil plow, turns over soil  
for OS Liquid ground penetration



# Large Area Spill Harbor Facility



Product	Size	QTY	Use
OS LIQUID	20 L Kit Skid (10 Kits)	1	Daily
OS POWDER	OSPowder800	10	ER
OS POWDER	OSPowder771 (25) 14kg Bags	1	Daily

**REPLENISHMENT:** As needed

## TREATMENT

Spill Maintenance	OS Liquid & OS Powder are used daily for spill maintenance
Emergency Response	Emergency Response is sufficient for a significant 45,000 L open water fuel release.

## APPLICATION

- OS Powder creates a spill berm and is applied to the pooling spill on land and water.
- OS Liquid is used to clean smaller spills on machinery and solid surface platforms.

## EQUIPMENT



Battery operated 20 L  
Bucket pump



Gas Powered  
Powder  
thrower



Dual pump/dual tank  
Skid mounted spray system