



EMERGENCY RESPONSE RESOURCE BOOK

CLEAN HARBORS STRIKE TEAM

(800.OIL.TANK) 24-Hour Emergency Response Services | 800.645.8265

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COMPANY QUALIFICATIONS

Annually, Clean Harbors manages over 3,000 environmental emergency responses or disaster recovery operations, on both land and water, throughout North America. From a small hazardous household materials clean-up to a large-scale, multiphase containment and cleanup of a coastal oil spill, companies and government agencies trust the judgment, expertise, and professionalism of Clean Harbors responders.

Since 1980, Clean Harbors has been the industry leader in identifying the safest, most effective, and most environmentally sound options for managing environmental emergencies. With more than 100 service locations and 48 waste management facilities in North America, and a commitment to integrity and high-performance standards, Clean Harbors enjoys long standing business relationships with government agencies, public and private corporations, and insurance companies, providing single-source management and response to any environmental emergency.

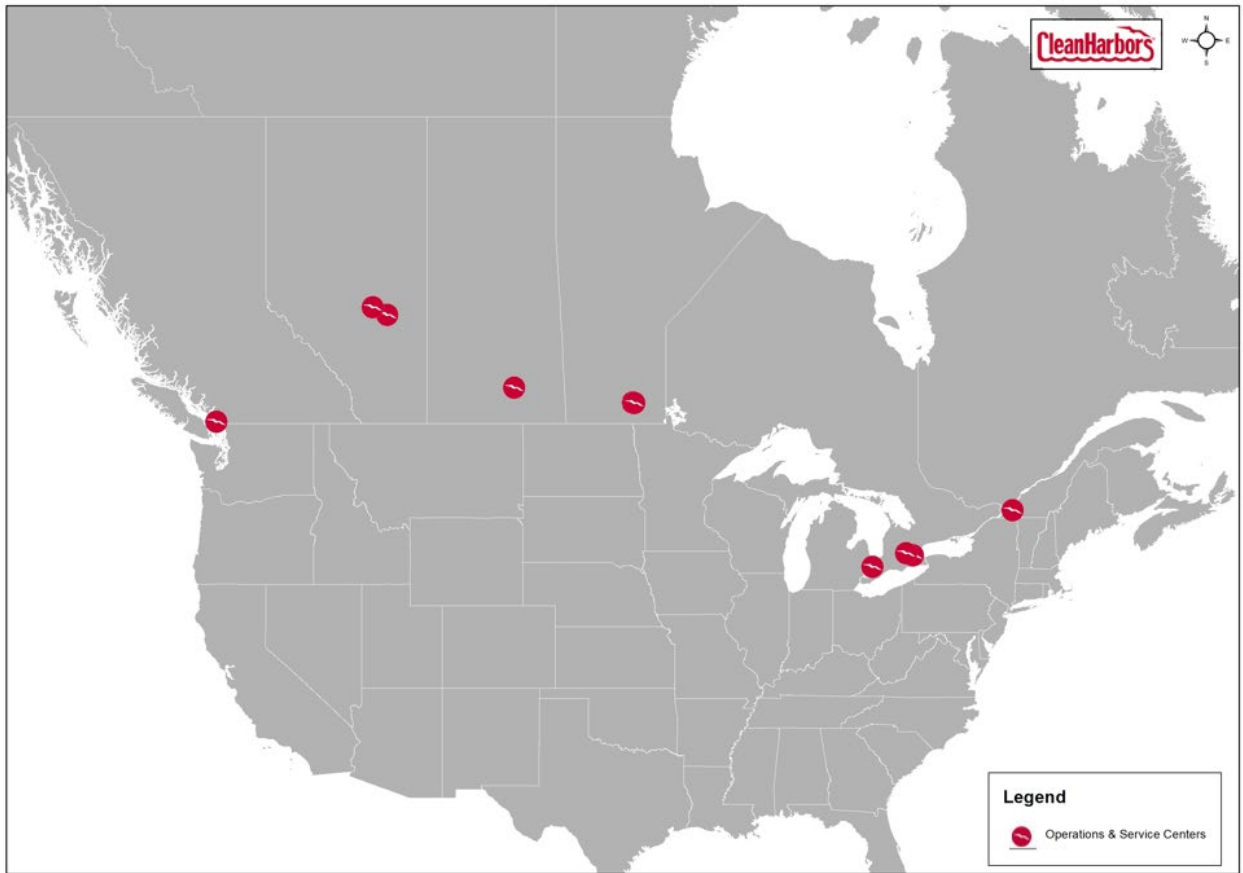
Emergencies can happen anywhere, at any time. One call to 1.800.OIL.TANK (1.800.645.8265) from anywhere across North America connects you to Clean Harbor's network of emergency response service centers. Clean Harbors will quickly mobilize centralized command centers, fully equipped with satellite communication systems that enable effective coordination even in the most remote of locations. To augment field operations or to provide additional support in command-and-control positions, Clean Harbors will deploy highly trained and experienced personnel who are able to integrate seamlessly into any response domain.

Clean Harbors is a complete solution for any organization's project or response. Clean Harbors provides customers environmental recovery programs such as surface remediation, groundwater restoration, underground storage tank management, and site decontamination, all of which are essential to successful emergency response activities.

Companies of all sizes, along with local, provincial, territorial and federal government agencies trust Clean Harbors to handle their emergency response and disaster recovery needs. They understand Clean Harbors has the real-world experience, technical knowledge, and resource inventory to get the job safely and efficiently. From immediate response and containment to long-term clean-up operations, Clean Harbors provides the manpower, equipment, logistical support, Incident Command System integration, and operational oversight to manage any size environmental emergency.

For more information about Clean Harbors and the services we provide, please visit our website at www.cleanharbors.com.

EMERGENCY RESPONSE EQUIPMENT LOCATION MAP



*CLEAN HARBORS COMPANY CONFIDENTIAL

STATEMENT OF PURPOSE

This booklet is provided to assist all those involved in emergency response services. The booklet contains names and phone numbers of key personnel throughout Clean Harbors who may be needed “on” or “off” hours to support an emergency response incident.

The listing will be updated twice a year and distributed to managers and supervisors in all divisions involved in emergency response operations.

Clean Harbors Environmental Services,
INC. 42 Longwater Drive
Norwell, MA 02061-9149
Attn: Jarrod Pomajzl

Pomajzl.jarrod@cleanharbors.com

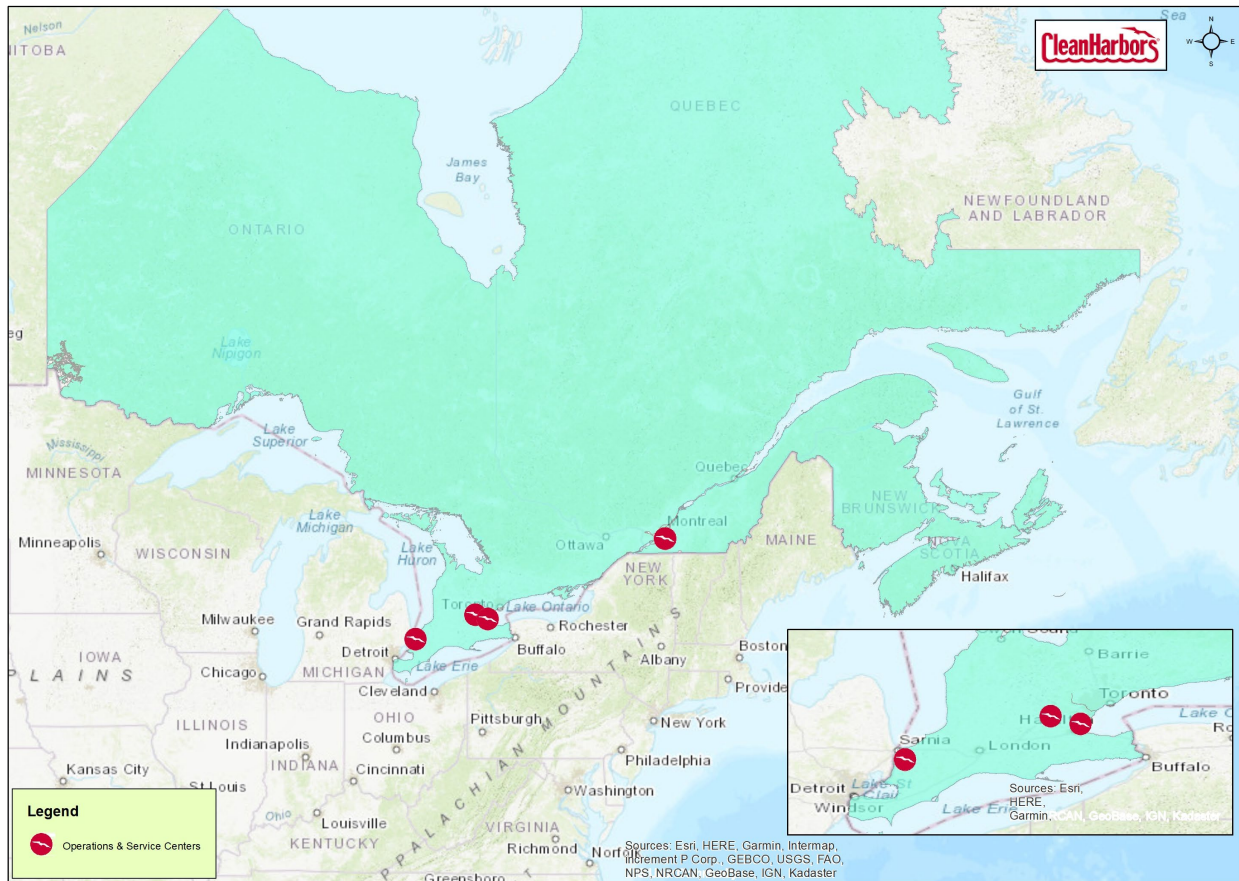


STRIKE TEAM



The Strike Team responds to large scale emergencies that may strain the resources of a local office or branch. When a large-scale event takes place and begins to overburden local Clean Harbors resources, the Strike Team can mobilize and deploy to provide support. The Team consists of highly trained and experienced operational, planning and logistics professionals who can integrate into the on-going response, freeing up other Clean Harbors resources to continue the routine business of the local office or branch.

EASTERN CANADA SERVICE CENTERS RESOURCE INVENTORIES

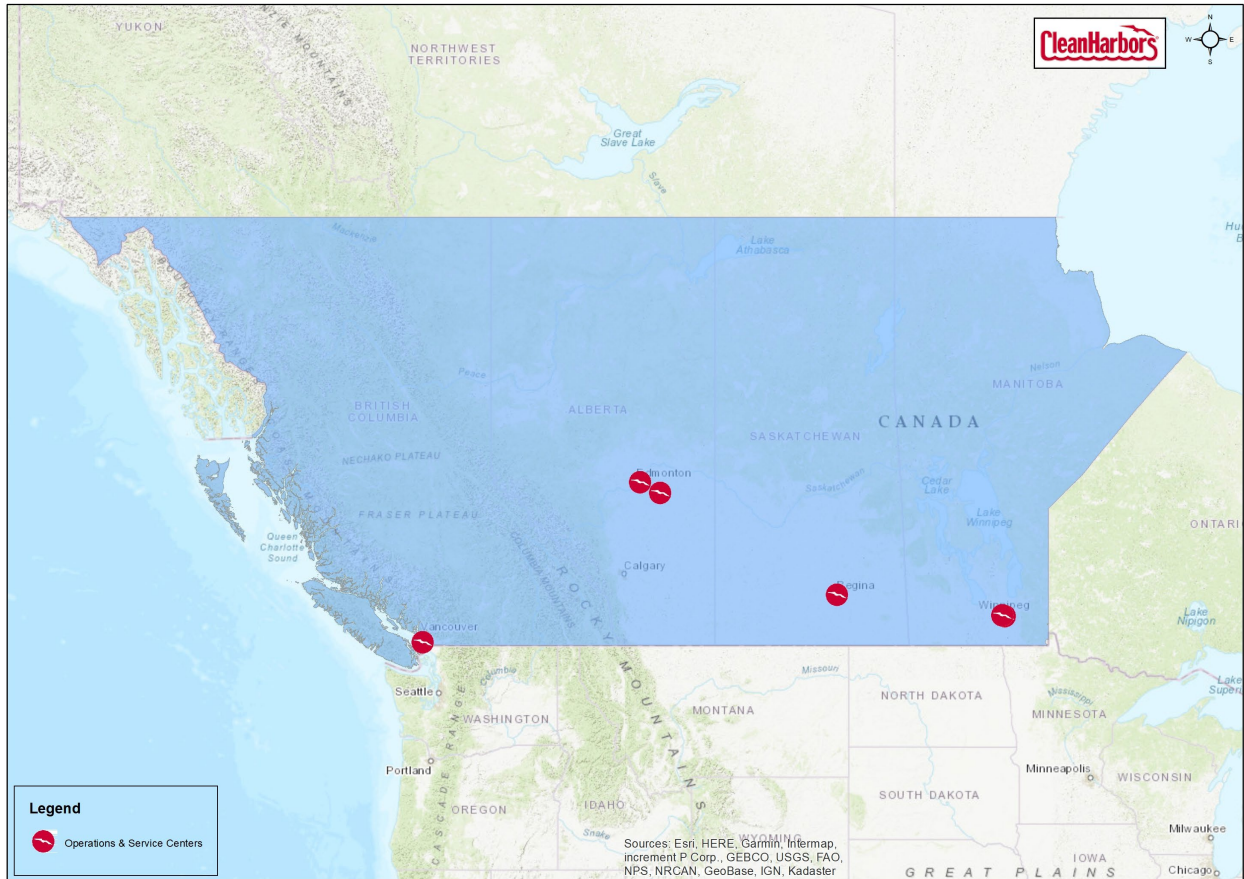


Burlington Service Center 1790 Ironstone Drive Burlington, ON L7L 5V3			24-Hr. # 905.332.1111 24-Hr. # 800.645.8264 Fax # 905.315.5633	
Daniel Rockel, General Manager				
Personnel Authorized to release equipment / materials / manpower, etc:				
Chris White (IS Coordinator)		Scott Foreman (IS Supervisor)		
Mohammed Khan (IS Branch Manager)				
Brett Herman (DOSS)				
40-Hour OSHA Trained Personnel:				
Supervisor	3	Foreman	1	
Equipment Operator	5	Field Technician	6	
Equipment Operator				
Equipment List				
Item Description / Manufacturer	Location	Capacity / Size / Key Features	Asset #	# of Units
(1) Vessels & Marine Support Equipment				
Drum Skimmer	Burlington		N/A	1
(2) Motor Vehicles & Vacuum Equipment				
Turbo Vacuum Trailer (SS, Wet)	Burlington	PressVac - 7500 gal. (2600 CFM)	N/A	1
Turbo Vacuum Loader (SS, Wet/Dry)	Burlington	Cusco - 3000 gal. (5300 CFM)	N/A	3
Cube Van	Burlington	Ford E450	N/A	1
Tractor with Sleeper	Burlington		N/A	1
Pick-Up Trucks	Burlington	Ford F350/F250 Dodge 3500	N/A	3
Pick-Up Trucks	Burlington	Ford F150	N/A	3
Hotsy on Trailer	Burlington	3500 PSI	N/A	2
High Pressure Water Blaster	Burlington	15000 PSI (1 trailer mount, 1 straight truck)	N/A	1
(3) Pumps and Pressure Equipment				
(4) Oil Spill Containment Booms				
Oil Spill Containment Boom	Burlington	19" Optimax	N/A	1000'
(5) Environmental Monitoring Equipment				
Gastec Pump	Burlington	Sample Pump	N/A	2
MSA 4-gas with PID	Burlington		N/A	5
Rattler H2S Personal Monitor	Burlington	H2S Badges	N/A	10
(6) Recovery Equipment				
(7) Beach, Earth Cleaning and Excavating Equipment				
(8) Generators, Compressors, Light Towers				
(9) Health and Safety Equipment				
Confined Space Retrievals	Burlington	DBI/SALA Tripod	N/A	2
(10) Communications				
(11) Trailers and Miscellaneous				
6" Bush Hog Hard Pipe	Burlington		N/A	450'

Ville Ste. Catherine Service Center 6785 Route 132 Ste-Catherine, QC J5C 1B6			24-Hr. # 450.632.6640 Extension 3 Fax # 450.632.1055	
Simon Dulude, General Manager				
Personnel Authorized to release equipment / materials / manpower, etc:				
Emilien Lepage Simion Dulude				
40-Hour OSHA Trained Personnel:				
Supervisor	3			
Equipment Operator	13			
Field Technician	6			
Equipment List				
Item Description / Manufacturer	Location	Capacity / Size / Key Features	Asset #	# of Units
(1) Vessels & Marine Support Equipment				
(2) Motor Vehicles & Vacuum Equipment				
Turbo Vacuum Trailer (SS, Wet)	Ste. Catherine	Cusco - 3000 gal. (5300 CFM)	N/A	1
Turbo Vacuum Loader (SS, Wet/Dry)	Ste. Catherine	Cusco - 5000 gal.	N/A	1
Cube Van	Ste. Catherine	Ford E450	N/A	1
Shell Tanker (SS) Vac 800cfm	Ste. Catherine	5000 gal.	N/A	5
Tractor with Sleeper	Ste. Catherine	Ford F350/F250 Dodge 3500	N/A	6
Pick-Up Trucks	Ste. Catherine	Ford F350/F250	N/A	3
Hotsy on Trailer	Ste. Catherine	3500 PSI	N/A	2
(3) Pumps and Pressure Equipment				
SS Diaphragm Pump	Ste. Catherine	3" Stainless Steel	N/A	1
Diaphragm Pump	Ste. Catherine	2" Cast Aluminum	N/A	1
(4) Oil Spill Containment Booms				
Oil Spill Containment Boom	Ste. Catherine	19" Optimax	N/A	200'
(5) Environmental Monitoring Equipment				
Gastec Pump	Ste. Catherine	Sample Pump	N/A	1
MSA 4-gas with PID	Ste. Catherine		N/A	9
(6) Recovery Equipment				
(7) Beach, Earth Cleaning and Excavating Equipment				
(8) Generators, Compressors, Light Towers				
(9) Health and Safety Equipment				
Confined Space Retrievals	Burlington	DBI/SALA Tripod	N/A	2
(10) Communications				
Two-Way Radios	Ste. Catherine	Telus (Nextel)	N/A	5
(11) Trailers and Miscellaneous				

Guelph Service Center 520 Southgate Drive Guelph, ON N1G 4P5			24-Hr. # 519.824.2025	
Tyrone Heiman, Branch Manager				
Personnel Authorized to release equipment / materials / manpower, etc:				
Tyrone Heiman				
40-Hour OSHA Trained Personnel:				
Foreman	1	Field Technician	2	
Equipment Operator	1			
Equipment List				
Item Description / Manufacturer	Location	Capacity / Size / Key Features	Asset #	# of Units
(1) Vessels & Marine Support Equipment				
(2) Motor Vehicles & Vacuum Equipment				
Dodge Crew Cab Pick-up Truck	Guelph	3500	SR56659	1
Vacuum Truck (Straight)	Guelph	10,000 litre	790582	1
(3) Pumps and Pressure Equipment				
Double Diaphragm Pump	Guelph	3" Air Powered	N/A	2
(4) Oil Spill Containment Booms				
(5) Environmental Monitoring Equipment				
MSA 4-gas with PID	Guelph		N/A	2
(6) Recovery Equipment				
(7) Beach, Earth Cleaning and Excavating Equipment				
(8) Generators, Compressors, Light Towers				
(9) Health and Safety Equipment				
(10) Communications				
(11) Trailers and Miscellaneous				

WESTERN CANADA SERVICE CENTERS RESOURCE INVENTORIES



Winnipeg Service Center 45 Terracon Place Winnipeg, MB R2J 4B3			24-Hr. # 204.231.9448 24-Hr. # 800.645.8265 Fax # 204.233.4177	
Alfio Corvino, Branch Manager				
Personnel Authorized to release equipment / materials / manpower, etc:				
Alfio Corvino				
40-Hour OSHA Trained Personnel:				
Supervisor	2	Field Technican / Chemist	1	
Equipment Operator	4			
Equipment List				
Item Description / Manufacturer	Location	Capacity / Size / Key Features	Asset #	# of Units
(1) Vessels & Marine Support Equipment				
(2) Motor Vehicles & Vacuum Equipment				
Vacuum Straight Truck	Winnipeg	10,000 litre	N/A	2
Pick-Up Trucks	Winnipeg	GMC	N/A	3
1 million BTU Steamer	Winnipeg	3000 PSI / Steam Adaptors	N/A	2
Wet/Dry Vac	Winnipeg	5700 CFM	N/A	1
(3) Pumps and Pressure Equipment				
Diaphragm Pump - Fuel	Winnipeg	2"	N/A	1
Diaphragm Pump - Corrosives	Winnipeg	2"	N/A	1
Trash Pump	Winnipeg	2"	N/A	2
(4) Oil Spill Containment Booms				
(5) Environmental Monitoring Equipment				
4/5 Gas Meter	Winnipeg	MSA	N/A	2
Gastech Monitors	Winnipeg	Gastech & Draeger	N/A	2
PID Meter	Winnipeg	MSA	N/A	1
H2S Meter	Winnipeg	Biosystems	N/A	2
Cyanide Meter	Winnipeg	MSA	N/A	2
(6) Recovery Equipment				
Open Top Drum	Winnipeg	205 litre	N/A	150
Closed Top Drum	Winnipeg	205 litre	N/A	20
Poly Drum	Winnipeg	205 litre	N/A	20
Poly Tank	Winnipeg	500 gallon	N/A	2
(7) Beach, Earth Cleaning and Excavating Equipment				
(8) Generators, Compressors, Light Towers				
5000 kW Generator	Winnipeg	Wacker 5K	N/A	1
(9) Health and Safety Equipment				
Confined Space Entry Gear	Winnipeg	Top and Side Retrieval Devices	N/A	2
(10) Communications				
Radios	Winnipeg		N/A	4
(11) Trailers and Miscellaneous				
Mercury Vacuum	Winnipeg	Lab size and large volume models	N/A	2
HEPA Vacuum	Winnipeg	Full Hazardous Waste HEPA model	N/A	2

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Dry Ice Blaster	Winnipeg	Cold Jet / Wickens	N/A	2
Oil Select Pads	Winnipeg	Boxes	N/A	20
Universal Sorbent Pads	Winnipeg	Boxes	N/A	20
Multisorb	Winnipeg	Bags	N/A	40

Edmonton Service Center 2130 - 121 Avenue NE Edmonton, AB T5V 1B1			24-Hr. # 800.645.8265 24-Hr. # 780.451.6969	
Cody Issler, Branch Manager				
Personnel Authorized to release equipment / materials / manpower, etc:				
Cody Issler		Tyler Esak		
Michael Fisher		Shaun Street		
Leanne Monteith		Josh Roberge		
Tim McKinney		Cameron Ritchie		
40-Hour OSHA Trained Personnel:				
Supervisor		2		
Equipment List				
Item Description / Manufacturer	Location	Capacity / Size / Key Features	Asset #	# of Units
(1) Vessels & Marine Support Equipment				
Jon Boat	Calmar	18' w/ Trailer (#79051)	V446	1
Jon Boat	Calmar	18' w/ Trailer (#BT420)	V419	1
Jon Boat	Calmar	18' w/ Trailer (#79053)	V447	1
Jon Boat	Calmar	18' w/ Trailer (#BT421)	V421	1
Jon Boat	Calmar	18' w/ Trailer (#CH1153)	V450	1
Jon Boat	Calmar	18' w/ Trailer (#CH1151)	V451	1
Landing Craft	Calmar	24' Pontoon w/ Trailer (#CH1160)	V462	1
Jon Boat	Edmonton	18' w/ Trailer (#BT418)	V420	1
Landing Craft	Edmonton	24' Pontoon w/ Trailer (#CH1157)	V459	1
(2) Motor Vehicles & Vacuum Equipment				
Skid Vac	Calmar	Vacuum Unit on a Skid Steer	SV1002	1
Semi Vac	Red Deer	20 meter capacity - Transfer pump on each	N/A	2
Straight Vac	Red Deer	10 meter capacity -	N/A	2
Pick-Up Truck	Edmonton	Chevrolet 3500	N/A	2
Pick-Up Truck	Edmonton	Ford F350	N/A	1
Pick-Up Truck	Ryley	Ford F250	N/A	2
Pick-Up Truck	Calgary	Ford F350	N/A	1
Pick-Up Truck	Red Deer	Ford F150	N/A	1
Pick-Up Truck	Red Deer	Chevrolet 3500	N/A	1
(3) Skimmers & Emergency Response Units				
Canadyne Skimmer 56000GPH	Edmonton	Drum Skimmer w/ Powerpack	S223	1
Canadyne Pedco Skimmer	Edmonton	Weir Skimmer	SKR111	1
Elastic Seaskater Weir Skimmer	Edmonton	Weir Skimmer	SKR112	1
Lamor Minimax 25 Brush Skimmer	Edmonton	Brush Skimmer w/ Powerpack	N/A	2
Crucial Conveyor Belt Skimmer	Edmonton	Conveyor Belt Skimmer w/ Powerpack	SK001	1
Crucial Conveyor Belt Skimmer	Edmonton	Conveyor Belt Skimmer w/ Powerpack	SK002	1
Elastec Double Barrel Drum Skimmer	Edmonton		SKD144	1
Elastec Double Barrel Drum Skimmer	Edmonton		SKD145	1
Elastec Double Barrel Drum Skimmer	Edmonton		SKD146	1
Elastec Double Barrel Drum Skimmer	Edmonton		SKD147	1
40' Sea Can	Edmonton	Emergency Response Gear	EQ1819	1
40' Sea Can	Edmonton	Emergency Response Gear	EQ1820	1
20' Sea Can	Edmonton	Emergency Response Gear	EQ1818	1
20' Sea Can	Edmonton	Emergency Response Gear	EQ1817	1
(4) Oil Spill Containment Booms				
Containment Boom	Calmar		N/A	23,000'
Secondary Containment	Calmar		N/A	95'

(5) Roll Off & Lugger Trucks/Trailers				
Roll Off Truck w/ Trailer	Ryley	Hauls two roll off bins, payload 30 tonne	N/A	4
Lugger Truck w/ Trailer	Ryley	Hauls 4 x 7 yd bins, payload 27 tonne	N/A	3
Super B Roll Off Trailer	Ryley	Hauls 2 roll off bins, payload 30 tonne	N/A	2
25-yd Roll Off Bin	Ryley	Payload - 10 tonne each	N/A	20
7-yd Lugger Bin	Ryley	Payload - 5 tonne each	N/A	50
(6) End Dumps & Side Dumps				
End Dump Trailer	Ryley	Payload - 27 tonne	N/A	5
Side Dump Trailer	Ryley	Payload - 38 tonne	N/A	7
(7) Stainless Steel Tankers				
Insulated Tanker	Ryley	22 meter cubed capacity	1521110	1
Tanker	Ryley	27 meter cubed capacity	3152	1
Tanker	Ryley	27 meter cubed capacity	398008	1
Tanker	Red Deer	20 meter cubed capacity	N/A	1
(8) Flat Deck Trailers & Trucks				
Super B Flat Deck Trailer	Ryley	26 pallet spaces	N/A	3
Flatbed Truck & Moffat	Ryley	Space for 12 x 2.7 meter cubed bins	N/A	1
48' Trailer w/ Moffat	Red Deer	48' capacity	N/A	1
Tractor Units	Red Deer		N/A	6
(9) Tractors and Trailers				
10 Ton	Red Deer		N/A	5
5 Ton	Red Deer		N/A	1
2 Ton	Red Deer		N/A	1
5 Ton	Grande Prairie		N/A	1
53' Van Trailer	Red Deer		N/A	7

Regina Service Center 525 East Dewdney Avenue Regina, SK S4N 4E9			24-Hr. # 800.645.8265 24-Hr. # 306.546.3322	
Derek Bullman, General Manager				
Personnel Authorized to release equipment / materials / manpower, etc:				
Derek Bullman		Greg Kohne		
George Eftodie		Brant McClelland		
40-Hour OSHA Trained Personnel:				
Supervisor	1	Foreman	1	
Equipment Operator	2	Field Technician	1	
Equipment List				
Item Description / Manufacturer	Location	Capacity / Size / Key Features	Asset #	# of Units
(1) Vessels & Marine Support Equipment				
(2) Motor Vehicles & Vacuum Equipment				
SS Vacuum Truck	Regina		N/A	1
Vacuum Truck w/ Lined Tank	Regina	Vane pump, oil field setup	N/A	1
Vacuum Truck w/ Lined Tank	Regina	Single Axel	N/A	1
Guzzler	Regina	Presvac 5300 CFM	N/A	1
Semi-Vac	Regina	TC350 Crude Tank	N/A	2
Combo Unit	Regina	Non-coded tank, 3500 PSI pump	N/A	1
Pressure Washer	Regina	Mobile 3500 PSI	N/A	1
Steamer	Regina	5000 PSI with Steam Pot	N/A	2
Tractor with Sleeper	Regina		N/A	1
Pick-Up Trucks	Regina	Ford F350/F250/F150	N/A	7
Office Trailer	Regina	23'	N/A	1
Flat Deck Trailer, Tri-Axel	Regina	5th Wheel Hitch	N/A	1
Flat Deck Trailer, Tandem Axel	Regina	Bumper Pull	N/A	3
Mobile Hotsy	Regina	2500 PSI	N/A	1
High Pressure Water Blaster	Regina	15,000 PSI	N/A	1
High Pressure Water Blaster	Regina	20,000 PSI	N/A	3
(3) Pumps & Pressure Equipment				
22 Diaphragm Pump	Regina	1.5" Stainless Steel	N/A	1
Diaphragm Pump for Fuels	Regina	2"	N/A	3
Diaphragm Pump for Corrosives	Regina	2"	N/A	1
Trash Pump	Regina	2"	N/A	2
(4) Oil Spill Containment Booms				
(5) Environmental Monitoring Equipment				
4/5 Gas Meter	Regina	MSA	N/A	4
M40 4-gas Monitor	Regina		N/A	10
(6) Recovery Equipment				
Open Top Drum	Regina	205 litre	N/A	5
Closed Top Drum	Regina	205 litre	N/A	5
Poly Drum	Regina	205 litre	N/A	10
(7) Generators				
(8) Health and Safety Equipment				

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Confined Space Retrieval	Regina	DBI/SALA Tripod	N/A	1
(9) Miscellaneous				
6" Hard Pipe	Regina	Aluminium	N/A	300'



TRANSPORTATION, WASTE, DISPOSAL AND RECYCLING FACILITIES

OIL RECOVERY SERVICES

Burlington, Ontario Facility

The Burlington, Ontario facility recovers used oil by means of separation and filtration. All reclaimed specification used oil is marketed as a supplemental fuel. This facility is authorized to accept non-hazardous wastewaters and used antifreeze. Used oil filters are also accepted and recycled for metals reclamation.

Permit

- Generator Permit #ON0039013
- Receiver Permit #A210108
- Transporter Permit #A8581



FACILITY
DESCRIPTION

1987
START-UP DATE



3.4 ACRES
FACILITY SIZE



ON
STATE/PROVINCE

Services Provided:

- Oil recovery
- Waste oil collection
- Oil/Water bulk transportation
- Oil filter collection and recycling
- Antifreeze collection
- Plastic containers collections
- Interceptor clean outs
- Emergency response

Typical Customers: Automotive industry and related services

Typical Waste Streams: Waste oil, oily water, Glycol, oil filters

Treatment, Storage and Disposal Capabilities

- Tank Farm Capacity: 772,820 liters or 204,180 U.S. gallons
- Warehouse Capacity: Equivalent to 1,000 45-gallon drums



TRANSPORTATION AND DISPOSAL SERVICES

Ryley, Alberta Facility

The Ryley facility is a hazardous waste transfer station as well as a secure landfill located in east central Alberta, a western Canadian province. This facility is permitted to accept all hazardous wastes with the exception of explosives, radioactive wastes and infectious wastes.

Although the Ryley facility is prohibited by permit to treat hazardous waste on its site and cannot import hazardous waste for landfill disposal, it can import non-hazardous waste for landfill disposal.

Permit

- Alberta Environment Approval No. 10348-01-00
- Surface and Water Drainage License 24753 issued by Alberta Environment



FACILITY
DESCRIPTION

1991
START-UP DATE



160 ACRES
FACILITY SIZE



AB
STATE/PROVINCE

Services Provided:

- Secure Hazardous Waste Landfill Disposal
- Secure Non-Hazardous Waste Landfill Disposal
- Storage prior to Treatment and Disposal

Typical Customers: R&D facilities, oil companies, chemical producers, federal and provincial government departments, institutional laboratories and other heavy manufacturers.

Typical Waste Streams: Hazardous landfill solids, non-hazardous landfill solids, contaminated process wastewaters, inorganic cleaning solutions, oils, spent flammable solvents, organic and inorganic laboratory chemicals, paint residues, debris from toxic or reactive chemical cleanups.

Treatment, Storage and Disposal Capabilities

- Drum Storage Capacity: 2500 drums of hazardous waste.

PCB storage is included in the 2500 drums permitted.



WASTE DISPOSAL SERVICES

Lambton, Ontario Landfill Facility

The Lambton Landfill is located in southwestern Ontario approximately 15km southeast of the city of Sarnia. This facility is positioned to service customers in the Great Lakes Basin located in Canada and the United States.

The facility is permitted to manage a wide variety of hazardous waste, including RCRA Waste, Naturally Occurring Radioactive Waste and Debris for Encapsulation. Waste is accepted at this facility directly from customers or from the Clean Harbors extensive network of service centers.

In October 2015, the facility received permit approval to allow a vertical landfill expansion that would provide more than 25 years of landfill capacity.

Since March 2020, Lambton has been licensed to receive and dispose of Naturally Occurring Radioactive Material (NORM) and Technically Enhanced Radioactive Material (TENORM) wastes. Lambton can accept NORM and TENORM wastes containing radionuclides (in the decay series of U-238, U-235 and Th-232) up to 70 Bq/g.

Permit

- Ontario of Ministry of the Environment Certificate of Approval #A031806

Waste Acceptance Criteria

- PCBs < 50 ppm
- NORM waste
- No pathological/biological waste
- No compressed gases
- No reactive (except Spent Pot Liner) or ignitable waste
- Total mercury < 260 mg/kg
- Total volatile organics < 2%
- Waste must exceed 15 psi compressive strength



FACILITY
DESCRIPTION

1969

START-UP DATE



300 AC.

FACILITY SIZE (ACRES)



ON

STATE/PROVINCE



Services Provided:

- Secure Chemical Landfill Disposal
- Flexible Container Handling
- On-site Laboratory
- State-of-the-Art Treatment Process for Inorganic Waste and Organic Wastes
- Stabilization
- Direct Landfill
- Solidification
- Micro Encapsulation
- Macro Encapsulation

Typical Customers: Manufacturers, remediation sites, chemical, petro-chemical and brokers

Typical Waste Streams: PCB Contaminated Solids (less than 50ppm), Hazardous and Non Haz Soils and Solids, Asbestos Waste, Hazardous Metal Bearing Filter Cakes, Plating Waste, Spent Carbon, Spent Pot Liners, NORM/TENORM Waste, Hydrovac Waste, Hazardous Industrial Solids and debris

Treatment, Storage and Disposal Capabilities

- Total Capacity 3.6 million cubic meters



TRANSPORTATION & DISPOSAL SERVICES

Lambton, Ontario Incineration

Clean Harbors Lambton incineration facility services Canada and the United States. The facility utilizes a liquid waste injection incineration consisting of a fixed unit incinerator, a semi-dry spray dryer absorber and a 4-compartment baghouse. This high-temperature incineration system provides a cost-effective and environmentally sound option for the management of liquid and pumpable materials.

The facility, which is operational 24 hours a day, 7 days a week, also has a certified laboratory and a household hazardous waste depot.

Permit

- Certificate of Approval # A031813
- Certificate of Approval (Air) # 8-1030-94-006

Waste Acceptance Criteria

- PCB waste < 50 ppm
- Organic halogens < 2
- Viscosity < 1000 cps
- Total mercury < 10 ppm
- Chlorinated pesticides (case by case)
- No pathological/biological waste
- No radioactive waste
- Reactive waste (case by case)



FACILITY
DESCRIPTION

1969
START-UP DATE



298 AC.
FACILITY SIZE (ACRES)



ON
STATE/PROVINCE



Services Provided:

- On-Site Ash Disposal

Typical Customers: Business sectors including electronics, automotive, lubricants, chemicals, plastics, agriculture, and steel.

Typical Waste Streams: Water and organic liquid wastes containing metals, landfill leachates, phenolic waste waters.

Treatment, Storage and Disposal Capabilities

- The incinerator has a permitted capacity of about 129,000,000 litres per year (341,000,000 U.S. gallons). Material processed must be pumpable and can include all waste except PCBs, pathogens, radioactives, and cylinders.
- The tank farm consists of 25 storage tanks with approximately 8,000,000 litres (2,000,000 U.S. gallons) of storage capacity.
- The Certificate of Approval limits the amount of organic halogen to less than 2% at the gate.



TRANSPORTATION & DISPOSAL SERVICES

Lambton, Ontario Thermal Desorption Unit

Clean Harbors' Lambton, Ontario Thermal Desorption Unit (TDU) services generators of organic waste in Canada and the United States. The facility utilizes an indirect thermal desorption unit that consists of the thermal processor, vapor condenser, and an air pollution control system.

The unit's heated airflow is condensed to recover water and organics from the solid waste. The remaining process air that is not condensable is piped to the primary combustion chamber of the onsite incinerator. Residual solids are tested and then disposed of in the onsite hazardous waste landfill.

This low temperature, high capacity thermal evaporation unit complements the company's other thermal technologies to process organic-containing soils, solids, and sludges. The facility, which is operated 24 hours a day and 7 days per week, also has a laboratory and a hazardous waste incinerator and landfill.

Permit

- Certificate of Approval Waste Disposal - A031806
- Certificate of Approval Air – 3286-87QRUQ

Waste Acceptance Criteria

- PCB wastes < 10 ppm
- Must be non-reactive waste
- No incineration or retort Land Disposal Restriction (LDR) codes
- No pathological/biological wastes
- No radioactive wastes
- No compressed gases or cylinders



Facility Description & General Information

Start-up Date: 2010

Facility Size: 300 acres

Services Provided:

- Thermal desorption of solids and sludge
- On-site process solids disposal
- Recycling of recovered organics

Typical Customers: Business sectors including petroleum refining, wood preserving, chemical, terminals, and remediation.

Typical Waste Streams: Organic solid and semi-solid waste containing listed and characteristic hazardous waste.



TRANSPORTATION AND DISPOSAL SERVICES

Ville Ste. Catherine, Ontario Facility

Clean Harbors operates a hazardous waste storage and transfer facility located in Ville Ste-Catherine, Quebec. This facility has been permitted by the Quebec Ministère de l'Environnement et de la Faune to receive, store, and transfer a variety of waste streams.

The facility is permitted to manage a wide variety of hazardous wastes excluding explosives, PCBs, radioactive and pathological wastes. Waste is accepted at this facility directly from customers or from Clean Harbors' extensive network of service centers.

Permit

- Quebec Ministère de l'Environnement et de la Faune facility I.D. #1145021615

Waste Acceptance Criteria

- PCBs < 50 ppm
- No pathological/biological wastes
- No radioactive wastes
- No compressed gases
- No reactive or ignitable wastes
- Pesticides (case by case)
- Dioxins & Furans (case by case)
- Total mercury < 500 ppm
- Total volatile organics < 2%
- Waste must exceed 15 p.s.i.



FACILITY DESCRIPTION

1973
START-UP DATE



4.52 AC.
FACILITY SIZE



QC
STATE/PROVINCE

Services Provided:

- Storage/Transfer
- Consolidation

Typical Customers: Manufacturers, remediation, Fortune 500 companies, medium and small generators.

Typical Waste Streams: contaminated process wastewaters, inorganic cleaning solutions, oils, spent flammable solvents, organic and inorganic laboratory chemicals, paint residues, debris from toxic or reactive chemical cleanups.

Treatment, Storage and Disposal Capabilities

- Liquid wastes are stored in a 1,135,000 litre tank farm
- 400 cubic meters of solid wastes can be stored in containers at the site.



TRANSPORTATION AND DISPOSAL SERVICES

Delta, British Columbia Facility

The Delta facility, located at the southwest tip of British Columbia, services BC, Alberta and the Pacific Northwest, USA. This facility is fully permitted to manage a wide variety of materials including hazardous and non-regulated waste materials. The Delta location is utilized for treatment as well as permitted storage prior to shipment to company-owned treatment and disposal facilities.

Additionally, Delta supports one permitted 10-day transfer facility (Pacific, Washington). This enables the region to benefit from economies of bulk purchasing and handling, particularly as Delta is rail served.

Permit

- Special Waste Management Facility Permit No. PS-8388
- License to Transport Special Waste No. LT0249
- Discharge of Air Contaminates Permit No. GVA0277



FACILITY DESCRIPTION

1991
START-UP DATE



3.5 ACRES
FACILITY SIZE



BC
STATE/PROVINCE

Services Provided:

- Fuels Blending
- Liquid/Solid Bulking
- Chemical Treatment
- Paint Can Bulking, Latex/Oil
- Remedial Services-Special Projects
- Oil Filter Crushing
- Storage prior to final Treatment and/or Disposal

Typical Customers: Manufacturers, pharmaceutical and chemical companies, colleges and universities, government facilities, hospitals.

Typical Waste Streams: Automotive and industrial wastes, contaminated process wastewaters, inorganic cleaning solutions, oils, spent flammable solvents, organic and inorganic laboratory chemicals, paint residues, debris from toxic or reactive chemical cleanups, off-spec commercial products.

Treatment, Storage and Disposal Capabilities

- Drum Storage Capacity: 379,250 litres (1,850 drums) hazardous
- Two tank farms for regulated and non-regulated waste
- 5.2 million litres total liquid capacity
- 80 metric tonnes of bulk storage
- Wide range of permitted waste codes



TRANSPORTATION & DISPOSAL SERVICES

Winnipeg, Manitoba Facility

The Winnipeg facility is located in the Prairie Region of Canada and is positioned to service the provinces of northwestern Ontario, Manitoba, and Saskatchewan. The facility is permitted to receive a wide range of regulated materials. Radioactives, explosives, and PCBs are prohibited.

Additionally, the facility is utilized for permitted storage prior to shipment to company owned and approved treatment and disposal facilities.

Permit

- Manitoba Conservation 70 HWRR Generator ID MBG07391, Receiver ID MBR07393 and Carrier Permit MBC07392



FACILITY
DESCRIPTION

1990
START-UP DATE



0.25 AC.
FACILITY SIZE



MB
STATE/PROVINCE



Services Provided:

- Storage prior to final Treatment or Disposal up to 180 days

Typical Customers: Colleges and universities, government and R&D facilities, pharmaceutical companies, chemical and pesticide manufacturers, provincial and municipal departments, industrial equipment manufacturers, medical facilities.

Typical Waste Streams: Contaminated process wastewaters, inorganic cleaning solutions, oils, spent flammable solvents, organic and inorganic laboratory chemicals, paint residues, debris from toxic or reactive chemical cleanups.

Treatment, Storage and Disposal Capabilities

Drum Storage Capacity: 168 drum equivalents





EMERGENCY RESPONSE PROJECT ABSTRACTS

Clean Harbors responds to emergencies from almost every service location on a daily basis. This section provides overviews of large-scale projects that have utilized Clean Harbors' Strike Team. We would like to note that we are available worldwide for any type of emergency, while still being capable to respond on a large-scale without interrupting the day-to-day business at local service centers and facilities.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: WAREHOUSE FIRE CLEANUP

CLIENT: PRIVATE COMPANY

Project Value: \$8,000,000

Personnel: 100

Project Description:

In early October 2022, a large warehouse in Michigan's Upper Peninsula caught on fire. Over 6 million gallons of water was used to extinguish the fire and approx. 85% of the 560,000 square-foot warehouse was damaged or lost to the fire. Clean Harbors was called in to immediately assist with containing the firefighting water runoff and place boom in the adjacent lagoon. Clean Harbors Field Services, Remediation, and High Haz teams were involved in the months-long cleanup.

Over 100 Clean Harbors employees worked day and night to remove damaged equipment, remove and deconstruct 12,000 damaged fire extinguishers and compressed gas cylinders for disposal, and treat and filter the contaminated 6 million gallons of water to EPA standards. The teams worked tirelessly through the freezing winter to ensure all damaged and contaminated debris was properly removed, treated, and disposed of.



[\(Huge warehouse fire caused PFAS spike in Menominee, Marinette water - mlive.com\)](#)

PROJECT: MATAGORDA DREDGING PROJECT

CLIENT: FEDERAL GOVERNMENT AGENCY

Project Value: \$3,000,000

Personnel: 20

Project Description:

In late 2019, Clean Harbors was contracted by the government to dredge the Matagorda Island Channel after Hurricane Harvey. Unfortunately due to the Covid 19 pandemic, the project was delayed several years and started in November of 2022. Clean Harbors contracted a dredging company to dredge the necessary material from the Matagorda Island Dock and Air Force Cut. We assisted with the installation and removal of the levee and pipeline system used to relocate the material to other areas of the island to assist in local remediation projects.





EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: INTERNATIONAL MILITARY BASE CLEANING

CLIENT: FEDERAL GOVERNMENT AGENCY

Project Value: \$3,000,000

Personnel: 5-10

Project Description:

The government needed a newly acquired base cleaned, so they looked to Clean Harbors for the answer. The base, located in Poland, required extensive cleaning daily to keep up with the base's cleaning standard. This project started in Q3 of 2021 through Q2 of 2023. The first phase was 10 personnel for 4 months and was reduced to 5 in 2022. The crew vigorously cleaned all the construction area, so cross contamination does not occur.

The government leans on Clean Harbors to mitigate any environmental hazards that may be present on base. The challenging part of this project was to procure all the necessary cleaning solvents and equipment in Poland. We were able to find most of the material that was needed locally, but some of the items had to be shipped from the US. The phenomenal crew went above and beyond the customers' expectations.

PROJECT: NASHVILLE CREEK CLEANUP

CLIENT: PRIVATE COMPANY

Project Value: \$3,000,000

Personnel: 100

Project Description:

In late March 2021, torrential rain fell on the town of Nashville, TN. The rain quickly filled up a major drainage creek and flooded an industrial complex. The flood waters tore through walls of buildings and warehouses near the creek. This caused pallets of toilet paper, plastic straws, cardboard boxes, plastic forks and more to spread for miles down the creek and onto the creek banks.

Clean Harbors was called in to help clean up the creek and the other surrounding impacted areas. After an area assessment, it was decided that heavy machinery would be needed to access all the affected areas on the creek banks. The trees were littered with flood debris up to 20 feet high in some areas. The area along the creek bank was very dense in vegetation, which made accessing all of the debris a challenge.

However, due to a unique endangered crayfish species that calls the creek home, using heavy machinery in the creek was not an option. The 100-person crew hand-picked all of the debris from the creek bed, trees and brush. Several homeless encampments along the creek bank added another hazard due to the presence of used hypodermic needles, so special care needed to be taken when the crews went through the brush to collect debris.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: DEEP RIVER DERELICT BARGE SPILL

CLIENT: U.S. GOVERNMENT AGENCY

Project Description:

On November 4, 2021, in Rosburg, Washington, a landowner reported that there was a black oil sheen in the vegetation on the shore of the Deep River. The U.S. Coast Guard confirmed that the derelict, abandoned barge nearby was the source of the oil. It was estimated that the 15-foot by 40-foot barge contained about 1,600 gallons of oil on board and was actively leaking.

Clean Harbors was called in immediately to assess the barge and contain the oil sheen. Initial response included pumping over 2,000 gallons of oily water out of the barge holds, placing hard boom as well as absorbent boom around the barge, wrapping the barge in visqueen to prevent water from entering the barge as there were too many unrepairable holes in the hull, and surveying the shoreline. Once the barge was removed from the river via crane, crews removed all oiled shoreline vegetation as well as oiled sediments on the shore and in the river. The total time span of the project was five months, November 2021 through April 2022.

PROJECT: HIGHLY PATHOGENIC AVIAN INFLUENZA (I)

CLIENT: U.S. GOVERNMENT AGENCY

Project Description:

In December of 2014, an agency of the U.S. government first identified the Highly Pathogenic Avian Influenza (hpAI), which originated in the Pacific Northwest and migrated eastward through the Midwest. The disease was 100% fatal to birds and attempts to mitigate its spread ultimately led to the destruction of more than 50 million egg-laying chickens and turkeys in 20 U.S. states. The hardest hit was the poultry industry in Iowa and Minnesota where 40 million birds contracted the illness and needed to be destroyed. Nationwide, 211 commercial farms and 21 back yds poultry farms were affected. Wild birds, particularly resident and migratory ducks, appeared to be carriers of the virus. Scientists concluded that droppings from these wild birds introduced the deadly virus which then spread through poultry operations via personnel, vehicles, rodents and small birds, as well as dust, feathers and the wind. The biological destruction of this virus and the necessary clean-up operation became the largest animal health event in U.S. history and cost U.S. taxpayers 950 million dollars in 2015.

In the event's early stages, the size of the outbreak outstripped the capacity to depopulate flocks and dispose of carcasses. Authorization to dispose of carcasses at landfills or incinerators was delayed due to concerns over liability, environmental impact, and public acceptance.

As the crisis escalated, government representatives made the decision to seek vendors who could provide high-capacity mobile disposal and treatment technologies. Clean Harbors Environmental Services was called upon for assistance and activated the company's National Emergency Response Strike Team. The general scope of the job entailed depopulation and disposal of hpAI impacted animals, primarily in Iowa and Minnesota, and then cleansing and disinfection of affected properties. In Minnesota, the company supplied foaming units for turkeys and provided some initial support.

Soon after beginning work in Minnesota, a State of Emergency was declared in Iowa which became Clean Harbors' primary area of operation. Working with the federal incident management team, company supervisors helped formulate an overall strategy: quarantine, eradicate, monitor, disinfect and test.

Step one was the establishment of a bio-secure perimeter. Only essential vehicles were allowed on sites through secured entrances and exits. Vehicles, loading bays, paths and roadways were thoroughly cleaned and disinfected. Wild bird and rodent control programs were enacted.

Next came a comprehensive approach to depopulation, disposal, and post-event disinfection. Along with more than 2,500 Clean Harbors responders who were involved in the effort, the company brought in over 1,400 dumpster containers and 100 roll off trucks. Working around the clock, our personnel assisted in euthanizing and disposing of some 30 million animals. Birds are typically euthanized with carbon dioxide or foam. These are the preferred depopulation methods and the most humane and effective way to reduce large poultry flocks. The logistics involved with this effort were extremely challenging as it covered over 15,000 square miles.

In conjunction with depopulation efforts for 31.5 million Iowa birds, methods for safe disposal of the euthanized animals were developed. At first, disposal of dead birds was kept as close to poultry operations as possible with carcasses composted or buried on site. Some of the farms handled disposal themselves but it was Clean Harbors that provided the primary offsite disposal options. The company took responsibility for maintenance of landfill locations and strategically placed 7 high-capacity, portable incinerators throughout the state.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: HIGHLY PATHOGENIC AVIAN INFLUENZA (2)

CLIENT: U.S. GOVERNMENT AGENCY

Project Description:

End stage precautionary actions included cleaning and disinfection of premises. It evolved that the most cost-effective method to ensure elimination of the virus was to conduct dry cleaning and subsequent heating of affected facilities. Government representatives and Clean Harbors managers found that a facility heated to 100-120 degrees F for 7 days, with at least 3 of those days being consecutive, would eliminate hpAI.

The good news that came out of this crisis was that there were no human infections even though illness has occurred elsewhere, with other avian influenza viruses, after close and prolonged contact with infected birds or their excretions/secretions. Throughout the course of the response effort, Clean Harbors' number one priority was the safety of company personnel. To that end, employees were always required to be outfitted with the proper personal protective equipment, schooled in proper methods of handling diseased animals, and thoroughly trained in cleaning and disinfection techniques. It is with a great deal of pride and confidence that company personnel could boast that Clean Harbors' safety standards exceeded those of any other company or government agency involved in the response.

In all, Minnesota lost more than 9 million birds, mostly turkeys, while Iowa reported more than 31,502,000 birds having been euthanized. Most of the commercial poultry farms were in the upper Midwest and had been ravaged during the cooler months of April and May. Iowa lost more than half its egg-producing industry in a 4-week period. In June of 2015, biosecurity measures along with summer heat brought about a dramatic decrease in the number of operations affected. The last case of this crisis was identified that month. Without an additional outbreak, Iowa farmers estimate it will take 1-2 years to get back to full production.

For future events, the U.S. government has developed the "24-hour Solution" which mandates depopulation within 24 hours after the virus is detected. If this cannot be achieved, the government will go so far as to shut down ventilation systems at infected poultry barns to suffocate the flocks within a day. State, federal and industry leaders say they're better prepared now, armed with tougher defenses, and poised for a quicker response. They reinforce the importance and establishment of a biosecurity barrier to help prevent the spread of the disease. Also, they recognize that infected barns need to go through an extensive cleaning and disinfecting process before repopulating bird flocks can begin.

Clean Harbors personnel were proud to participate not only in the implementation of these plans, but in their formulation and fine-tuning. So once again, the company has demonstrated that whatever the requirements of an environmental emergency, wherever the location, Clean Harbors Environmental Services has the personnel and equipment queued up and ready to respond.

PROJECT: FROG LAKE CRUDE OIL SPILL

CLIENT: OIL AND GAS OPERATOR

Project Value: \$3,000,000

Project Schedule: January 2013 – July 2014

Project Description:

During a routine inspection on January 3, 2013, a pool of oil was found adjacent to the flow line connecting an exploration facility on a water loading facility. The spill was reported promptly, and contamination removal operations scheduled to start immediately. The area experienced unseasonably high rains beginning the night of January 3, which in turn flooded the area, causing the oil to migrate hundreds of acres from the source. The Clean Harbors Strike Team responded to this challenging project.

This spill originated in a uniquely remote area in the swamps of South-Central Louisiana. Responders had to travel up to several hours to reach the spill from the nearest vessel launch site. Due to this remote location along with a lack of dry land, Clean Harbors decided to stage all operational resources on barges and vessels.

An array of marine assets were used for storage, transportation, and berthing. A picture of the onsite disposal containers are found at the end of this abstract showing how the recovered material was staged and intern transported via tug boat to a bulkhead where a crane would lift the roll offs from the barge deck and replace them with empty rolls offs. Similar barge sets were used to stage recovery equipment and large containers for recovered liquid product.

Personnel were also staged adjacent to the spill site. Due to the extended mobilization time, a 50-person crew boat was mobilized and staged adjacent to the site where labor, safety, and management personnel all stayed during the response.

Clean Harbors Strike Team Personnel have used offshore staging and berthing on other projects such as Hurricane Rita and the Deep Water Horizon. We believe Clean Harbors is uniquely qualified to handle waste related events in challenging locations, whether that is on land or on water.





EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: HURRICANE SANDY (1)

CLIENT: STATE, FEDERAL AGENCIES AND PRIVATE UTILITIES

Project Description:

In late October of 2012, Hurricane Sandy, the largest Atlantic hurricane on record, devastated portions of the Caribbean, the mid-Atlantic, and Northeastern U.S. In the U.S., Sandy affected 24 states including the entire eastern seaboard from Florida to Maine, and west across the Appalachian Mountains to Michigan and Wisconsin. Hit particularly hard were the states of New Jersey and New York. On October 29, 2012 Sandy came ashore near Atlantic City as a post tropical cyclone with hurricane force winds. Ultimately this hurricane caused tens of billions of dollars in damage, destroyed thousands of homes, and left millions of people without power.

Along the New York/New Jersey coastline a surge of ocean water moved inland, even before Sandy made landfall at about 8 p.m., filling up streets and washing away piers and boardwalks. In New York City the storm's surge flooded streets, tunnels, and subway lines, and contributed to widespread power outages. The East River overflowed its banks flooding large sections of lower Manhattan.

In the New York/New Jersey metro areas, a Hurricane Sandy Unified Command was established to coordinate response activity among state and federal agencies. Clean Harbors was asked to assist the command with assessing affected areas for pollution and hazardous materials. Throughout the region, hazardous debris and containers of unknown material were tagged by a federal agency for testing and proper disposal by Clean Harbors workers. Damage to portions of the city's subway, commuter rails, and tunnels was unprecedented. The Metropolitan Transportation Authority said the destruction caused by the storm was the worst disaster in the 108-year history of the NYC subway system. Transit tunnels filled with water and needed pumping; a project conducted by a federal agency. In less than two weeks, they removed over 470 million gals of water.

Near the Brooklyn Battery Tunnel, a 25,000-gal heating oil tank ruptured with the oil flowing straight into the tunnel. When the water was removed, thousands of gals of oil coated tunnel ceilings and walls. This problem of oil coating the insides of subway tunnels was widespread and removal of oily residue was needed at numerous sites. Clean Harbors workers cleaned the Brooklyn Battery tunnel and a number of others.

Along with the transit systems, utilities were hard hit. An explosion at a power plant contributed to a power failure that plunged people into darkness in Manhattan. The CEO of the company said it was the worst storm the utility had ever experienced. One of the most immediate and critical response activities for Clean Harbors workers was to support the power companies in the replacement of damaged transformers. This usually involved cleanup of downed transformers and transformer oil from the ground often times oil which contained PCBs.

An oil company in New Jersey had two large capacity diesel storage tanks that were hit by the tidal surge and ruptured. The release of approximately 380,000 gals of low-sulfur diesel overflowed the tanks' containment area reaching the Arthur Kill Waterway between New Jersey and Staten Island. Approximately 14,000' of containment booms and absorbent boom were deployed to protect sensitive areas. A crew of 130 responders (including Clean Harbors personnel), using skimmers, vacuum trucks, and on-site storage tanks, labored to recover product and water. As of November 6, the responders had recovered well over one million gals of the diesel/water mixture.

Elsewhere, a New Jersey refinery took on 12' of salt water. When the surge receded, the operator discovered that almost 8,000 gals of crude oil had been spilled. Over a three-week period, Clean Harbors workers cleaned waterways and the ground. Clean Harbors' skimming operation employed up to 477 workers, 30 vac trucks, 30 boats, 30 skimmers, and 10,000' to 15,000' of containment boom. Also, as part of the cleanup effort for this refinery, our responders were charged with remediation of a nearby cemetery where oily water had mixed with soil and covered gravestones. Clean Harbors cleaned the stones and removed the impacted soil.

PROJECT: HURRICANE SANDY (2)

CLIENT: STATE, FEDERAL AGENCIES AND PRIVATE UTILITIES

Project Description:

One of the most dramatic examples of Clean Harbors' capabilities in times of crisis occurred after the hurricane at the location of a New Jersey chemical tank farm. The facility had been ravaged by the storm and approximately 18 chemical tanks, each with a 10,000- to 30,000-gallon storage capacity, were upset or completely upended. The piping associated with the tipped tanks was, in many cases, bent or broken and needed to be disconnected and safely purged of vapors and chemicals. In addition, the solvents, spirits, and alcohols housed in these tanks had spilled into concrete containment areas and had become mixed with storm water and seawater.

To compound the problems, the facility was without electricity and heat and had no fire suppression capabilities. The response at this particular facility then comprised evacuating and collecting liquid and vapors, removing damaged piping, and staging the tanks for scrap or reuse.

Because of complexities, members of Clean Harbors' Remediation Group, which provides long term technical expertise, were brought in to manage the project. One of their first priorities was to install a temporary boiler to provide heat in the company's office building and a portable foam machine to suppress odor and vapor. After a thorough review of the facility's damage, a two-phase plan was created and implemented for the tank farm, with a one-month de-energizing phase and a recovery period, which went for two months more.

Of immediate concern was that the containment areas be emptied of all water and chemicals. This meant pumping, sampling, and disposing of thousands of gallons of recovered liquid. In the second non-emergency phase, more than half of the large tanks were lifted out of their containment areas. The first step to accomplish this was the cleansing and removal of bent and broken pipes.

Afterward, a rigging subcontractor was engaged, and a massive crane was brought in to lift the chemical tanks out of containment. In fact, the crane was so tall that FAA approval for the site was needed and obtained.

Due to the size and nature of this project, Clean Harbors drew support personnel and equipment from its Field Service offices all over the country. The event was lengthy and complex, and further complicated by the customer's European based management, which required frequent and detailed updates. The great significance and success of this project came about because of incredible planning and execution. In the words of one of our project managers, "Everything went according to plan. Nothing went awry!"

For the millions of people who were impacted by Hurricane Sandy, the memories of devastation and loss will linger for years. The employees of our company witnessed that devastation firsthand and they welcomed the opportunity to assist with the recovery in a meaningful way. They were put in that position by a company with vast resources. Clean Harbors was able to demonstrate once again, that in times of need and when it really matters, it can marshal personnel, equipment, and expertise to a degree that simply cannot be matched in all of North America.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: OIL PIPELINE BREAK BENEATH A HIGH FLOOD STAGE RIVER

CLIENT: MAJOR OIL COMPANY

Project Description:

The Yellowstone River in northwestern United States is the longest undammed river in the country and is described by former Montana Governor Brian Schweitzer as one of the most phenomenal trout fisheries in America. In the late evening hours of Friday, July 1, 2011, a 12" oil pipeline, buried 5-8 feet below the river, burst and spilled an estimated 1,500 barrels (63,000 gallons) of medium crude into the river. The pipeline break occurred approximately 20 miles upstream from a major oil company refinery in Billings, Montana. The river, at a high flood stage and with a fast-moving current, had exposed the pipeline or left it buried in spots under minimal cover. Debris washing downriver had piled up, increasing pressure on the pipeline until it ruptured.

Governor Schweitzer insisted on a physical inspection of the river from small boats as quickly as possible, but crews were forced to work from the shore due to the raging waters. The Environmental Protection Agency conducted an aerial survey that identified oil deposited along the riverbanks and pools of oil in backwaters and eddies. At the time of survey, oil was visible along the river for 45 miles downstream. Ultimately, this rupture would foul 70 miles of riverbank, and thousands of acres (throughout 7 counties) of wetlands and farmland.

Crews from the oil company's Billings refinery initially installed booms to isolate oil that had pooled adjacent to the river, but the flooding carried globs of oil into fields hundreds of feet from the riverbank and would leave a ring of oily grime around nearby buildings. It was quickly apparent that outside help and expertise were needed. Clean Harbors was contacted, and the company's National Strike Team was mobilized and deployed to the damaged area.

As more personnel and equipment came on scene, crews used absorbent pads, vacuum trucks, and tankers to pick up and dispose of the oil. And although floodwaters began to recede by Sunday, river turbulence still precluded the use of boats. Clean Harbors provided Swift Water Rescue Training for personnel, and retro fitted many of its 60 boats with jet drives. By Monday, when water levels dropped below flood stage, company employees were able to participate safely in all phases of the cleanup including product recovery, shoreline assessment and cleaning, logistics support, and resource tracking.

By Thursday, 6 days after the initial break, more than 8,000 feet of absorbent boom and 150,000 absorbent pads had been deployed along the river. This cleanup went on for over 4 months and, at peak, involved over 1,000 personnel on the shores and in the river, 700 workers having been provided by Clean Harbors. In addition to participating in all phases of the cleanup, Clean Harbors disposed of all waste from the project with contaminated material being transported to the company's Grassy Mountain landfill in Utah.

The Yellowstone River cleanup of 2011 demonstrated not only the effectiveness of the National Strike Team concept, but also the company's depth of resources and its high level of support for Strike Team events.

PROJECT: HURRICANE IRENE

CLIENT: STATE AGENCY, LARGE PRIVATE INDUSTRIAL
MANUFACTURER

Project Description:

Hurricane Irene first struck eastern North Carolina on August 20, 2011 as a Category I hurricane and then moved northward along the mid-Atlantic coast. Early the next day, the storm reemerged into the Atlantic from southeast Virginia. Irene made its final landfall as a tropical storm in the New York City area on August 28 and dropped 12"-18" of rain in the Northeast causing widespread flooding. More than 7 million homes and businesses lost power during the storm, which caused at least 45 deaths and more than \$7.3 billion in damages. Subsequently, Tropical Storm Lee would exacerbate the situation with another 10"-12" of rain on September 7.

In New York State, Clean Harbors was contacted by a state agency regarding a widespread problem with floating heating oil tanks in flooded residential basements, particularly in Schoharie and Green counties. Our National Strike Team and Albany Field Service office mobilized over 60 personnel plus equipment from surrounding Clean Harbors locations. Working 7 days per week for nearly 2 months, Clean Harbors personnel were able to remediate basements in more than 200 locations. In addition to the New York homes, the two storms created similar problems for homeowners and businesses in surrounding states. Personnel from our Connecticut, New Jersey, Massachusetts, and New Hampshire service centers conducted remediation in their own states and in Vermont as well.

From New Hampshire to New Jersey, Clean Harbors workers played a key role in assisting electric utility companies with recovery of transformers that were down due to wind damage. At the peak of this effort, the company would have over 25 crews working on storm recovery efforts related to above ground and below ground transmission lines. Soil, which had been impacted by spilled transformer oil, was removed and shipped for proper disposal at EPA certified facilities.

In the foothills of the Catskill Mountains, a large manufacturer of military, commercial aerospace and industrial products contacted Clean Harbors when the Susquehanna River crested and flooded its 675,000 sq. ft. facility. The flooding in the building resulted in oil and chemically contaminated debris and water. In addition, non-hazardous storm debris and sludge needed to be removed. For the next month, more than 60 workers from our Syracuse Field Service Office and our nationwide subcontractor network were on site conducting remediation activity. Needed equipment such as high capacity roll offs, frac tanks, vacuum trucks, and tankers were brought in and the waste generated was shipped to disposal facilities within the Clean Harbors network.

Once again Clean Harbors demonstrated that, even in the midst of a large-scale disaster, it has the resources and expertise available to meet and resolve difficult environmental challenges in multiple locations.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: HURRICANE IRENE

CLIENT: STATE AGENCY, LARGE PRIVATE INDUSTRIAL MANUFACTURER

Project Description:

(continued)

After the storm initially hit, a federal postal service required cleaning of several offices in eastern Mississippi. Clean Harbors responded with over 100 workers to the Bay St. Louis and Kiln, Mississippi postal services. Within a week they had cleaned each office and decontaminated the machines from any unknowns and set up disposal services for future use at the locations. Also, in Mississippi, Clean Harbors was contacted by a private defense contractor to decontaminate their dry docks. Vacuum trucks and crews with pressure washing equipment were mobilized to accomplish the task.

In New Orleans itself there was much more work to be done. Since the city was evacuated and there was so much time without power, several food processing plants in New Orleans needed electricity to power their refrigeration units. Clean Harbors was asked to clean out two locations that had rancid meat in them. The cleanup of each location was managed and completed through disposal of the product by Clean Harbors. Disposal was sent to Clean Harbors' facility in White Castle, Louisiana.

Within two months of the cleanup operation, so much of the work was based in New Orleans or further south that Clean Harbors mobilized another command center into the city. During the first two months of the cleanup phase, it was impossible and unfeasible to enter the city and live there. But, once it had been drained out, moving there was an option. Clean Harbors set up another campground across the river in Gretna and began to run all New Orleans operations from there. A Mobil Incident Command Unit was set up there for all operations to report to, and an office was rented to run all finance operations.

After the flooding in New Orleans, a regional utility company contacted Clean Harbors to aid in cleaning their offices in the city. Clean Harbors cleaned several buildings directly for this utility company and for a consultant. Due to their excellent work on the building decontaminations, the utility company asked Clean Harbors to begin cleaning manholes throughout the city. Several high-powered vacuum trucks were involved, and Clean Harbors used their confined space expertise to pump out and clean hundreds of manholes throughout New Orleans and southern Mississippi. The utility company was so impressed with the work that they awarded Clean Harbors the maintenance contract for the manholes in the entire Southeast and Gulf Area regions.

Once areas of the city were re-opened to the public, waste from houses needed to be collected and removed from the destroyed area. Clean Harbors utilized nearly 100 workers to walk debris lines and roads and collect any household hazardous waste (HHW) for disposal. The disposal was managed by a federal agency. Clean Harbors then used its strong subcontractor network to manage the asbestos and asbestos-containing materials cleanup among the HHW. This project lasted through late March 2006 until the demolition of the damaged homes began.

After over 8 months of work, Clean Harbors proved once again that they are the leader in nearly all aspects of emergency response on a large scale. Nearly all product lines Clean Harbors has to offer were used over this time period; many jobs used multiple product lines on them such as response, transportation of waste, and disposal.

PROJECT: OIL RIG EXPLOSION IN THE GULF OF MEXICO

CLIENT: MAJOR OIL COMPANY

Project Description:

On Tuesday, April 20, 2010, an ultra deepwater, offshore oil drilling rig, the Deepwater Horizon, operating in the Mississippi Canyon, experienced a well blowout and a violent explosion which led to the deaths of 11 crewmen and which ignited a fireball visible from 35 miles away. The resulting fire could not be extinguished, and on April 22, the Deepwater Horizon oil rig sank leaving the well gushing on the sea floor approximately 5,000 feet deep and causing the largest offshore oil release in U.S. history. The oil flow continued until July 15, 2010 when the well was capped. The U.S. government estimated that, at its highest rate, 60,000 barrels of oil flowed into the Gulf every day. By the end of June, several million barrels had spewed into the Gulf and tar balls were washing up on the beaches of Louisiana, Alabama, Mississippi, and Florida.

Even before the disaster, the Responsible Party was a longtime Clean Harbors customer and familiar with our work and our efforts as a result of Hurricane Katrina in 2005. Clean Harbors was contacted by client representatives, a government agency, and others to supply personnel, booms, boats, skimmers, vacuum trucks, and other specialized equipment for the Deepwater Horizon cleanup.

The response was quickly organized. Clean Harbors' management had recognized that the effort would be easier to manage in its early stages before a significant amount of petroleum washed ashore. At the corporate office in Norwell, Massachusetts, a Spill Operations War Room was activated to handle all logistic, procurement, administration, and personnel needs for this release. Our workforce and the equipment on site were ramped up in the Gulf by drawing on the company's extensive resources throughout the U.S. and Canada. Over 400 full time Clean Harbors employees were sent to the Gulf on extended tours of duty. In addition, the company activated its national subcontractor network and was involved with recruiting and training Gulf area residents in oil spill remediation. In terms of personnel, we achieved a peak of over 3,600 workers for this spill.

This Emergency Response was conducted on an unprecedented scale in terms of deployment, equipment, and size of the disaster area. Clean Harbors' cleanup efforts on behalf of the oil company and the residents of Louisiana, Alabama, Mississippi, and Florida took place from April 2010 through March 2011 almost a full year. In that period, the company was involved in every aspect of the spill response including containment, removal, and the ultimate treatment and disposal/ recycling of recovered product. The company's growth over the past 30 years, plus its increasing capabilities, gave it the capacity to sustain an effort as large as the Deepwater Horizon cleanup while simultaneously meeting its day-to-day service requirements for existing customers throughout the U.S. and Canada. As it did with Hurricane Katrina, the company demonstrated it is an efficient and dedicated national response organization in times of national crisis.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: RUPTURED PIPELINE IN MARSHALL, MICHIGAN

CLIENT: MAJOR CANADIAN OIL COMPANY

Project Description:

On Sunday, July 25, 2010, a 40-foot pipeline segment located in Marshall, Michigan ruptured. The Natural Resources Commission (NRC) reported 19,500 barrels (819,000 USG) of heavy crude oil dispersed into a 30 mile stretch of the Kalamazoo River. The regional EPA director estimated that this cleanup would take many months to complete, but when more product began to sink to the bottom of the river, this caused an environmental challenge that would continue on for more than three years.

The oil company knew that it would need to activate additional resources. Clean Harbors was notified and within 24 hours began mobilization from their Detroit, Chicago, Cleveland and various other locations throughout the United States. Mobilization included two command trailers, 20,000' of containment boom, absorbent booms, vacuum trucks, air boats, response vessels, oil skimmers and plenty of Clean Harbors personnel. At the height of this response, Clean Harbors had 550 responders working on the cleanup efforts.

The Kalamazoo River experienced flooding before and after the spill and later on after river levels fell, stranded oil was left in some backwaters, wetlands, and floodplains. In addition to the already established access points, roads and boat launch sites had to be created in order to reach the remaining parts of the contaminated area. Oil skimmers, containment boom and vacuum trucks were all set up to remove floating oil from the river surface. Nearly 50 air boats and dozens of jon boats were used to scout the river for other areas not easily identified from the shore and to more easily place boom and move skimmers. The initial response to the Kalamazoo River spill lasted almost three months before demobilization began.

On September 9, 2010 in Romeoville, Illinois, an additional pipeline failed but only approximately 2,000 gallons were released. Already assisting with the efforts in Michigan, vacuum trucks and boom were immediately mobilized from the Marshall area to help support this release.

During these cleanups, Clean Harbors was also heavily involved in the largest emergency response event in the history of the United States a thousand miles away in the Gulf of Mexico. Our participation in these simultaneous major events, while continuing to respond to our existing customer base across North America, has only served to strengthen Clean Harbors' reputation as the leading provider for emergency response services throughout the United States.

PROJECT: CRUDE OIL SPILL IN PORT ARTHUR, TEXAS

CLIENT: VESSEL OWNER'S SPILL MANAGEMENT TEAM

Project Description:

On Saturday January 23, 2010, a collision between an oil tanker bound for Exxon Mobil Corp Beaumont refinery and an outbound vessel towing barges resulted in a major crude oil spill in the port of Port Arthur, Texas.

The U.S. Coast Guard said that the towing vessel and the two barges it was pushing, ripped a hole in the side of the 807- foot tanker (Eagle Otome) at about 9:30 a.m., spilling an estimated 450,000 gallons of crude oil, or about 11,000 barrels. The Sabine Neches Waterway was closed to all vessel traffic along Port Arthur river front.

The Coast Guard said early Sunday that the oil spill had been contained to a two-mile area. Coast Guard personnel said initial reports indicated none of the oil in the Texas spill had affected area marshes or hurt any local wildlife. He said officials believed the oil spill was basically contained in a stretch of the Sabine Neches Waterway, where the spill took place and that runs along the city of Port Arthur. Coast Guard personnel said the cleanup effort was expected to last at least through Sunday.

On January 24, 2010 Clean Harbors was hired by Gallagher Marine Systems to remediate oil from beaches, marinas, and other heavy contaminated areas. Clean Harbors' National Response Team mobilized and managed over 150 personnel for the spill and utilized nationwide company resources. A total of 8,200 feet of containment boom and twelve large response vessels were deployed by Clean Harbors. Total time frame for this spill was 3.5 weeks.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: TANK FARM EXPLOSION, BAYAMON, PUERTO RICO

CLIENT: SPILL/ER MANAGEMENT COMPANY

Project Description:

On October 23, 2009 at 12:30 am an explosion at a fuel storage facility in Bayamon, Puerto Rico shook the city with a force equivalent to a 2.8 magnitude earthquake, according to the Puerto Rico Seismic Network. The Fires burned for three days and destroyed 11 of the facilities storage tanks containing such products as jet fuel, gasoline, and number 2 fuel oil.

The United States Coast Guard contacted the local office, Clean Harbors Caribe Inc., and requested an emergency response. Within an hour a Clean Harbors' crew was on site assisting with the cleanup efforts at the facility. Within hours of the reports of the fire at the facility Clean Harbors activated their National Strike Team sending Kevin Sheppard and Lee Barfield to Puerto Rico to assist in our response. Initially our resources used for the response were minimal due to the continued danger as the fires took days to completely extinguish. Further slowing the cleanup effort was the fact that the F.B.I had taken over the site and was treating it as a crime scene and we were limited in our response efforts during their investigation. Eventually we would be contracted through a spill/ER management company to provide response and recovery resources for the site. Clean Harbors would continue to work around the clock until December 8th, 2009 providing as many as 35 people and various skimming equipment and three vacuum trucks. The local office was able to continue to support their everyday clients because they received assistance for this project from Clean Harbors National Strike Team as Virgil Blanchard was brought in to manage our response and Stephen Sheppard was tasked with the finances of the project for us. These employees spent over a month on the island including their Thanksgiving holiday.

PROJECT: FLOODING IN ATLANTA, GEORGIA

CLIENT: PUBLIC SERVICES

Project Description:

Torrential rains lead to flooding in and around metro Atlanta, Georgia in September 2009. Waters began rising on September 20, 2009 and flooding peaked on September 21, 2009. Multiple fatalities were recorded in the Atlanta metro area and throughout parts of Georgia and Alabama. Rising water from the Chattahoochee River flooded out Atlanta's sewer treatment plant (RM Clayton) causing a massive incursion of raw sewage into the rain-stricken river.

Flooding became problematic in Atlanta once again as the effects of Hurricane Ida hit the area extremely hard. Heavy rains forced some streams over their banks in several Atlanta area neighborhoods.

On September 23, 2009 Clean Harbors was hired by the City of Atlanta to remediate the situation and follow with proper clean up. Clean Harbors' National Response Team mobilized and managed over 50 personnel for the event and utilized nationwide company resources. Multiple vacuum trucks were used as well as the company providing a large blower unit to keep the plant up and running. The entire project took over 2 months.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: HURRICANE GUSTAV/HURRICANE IKE
CLIENT: VARIOUS FEDERAL AGENCIES, VARIOUS COMPANIES

Project Description:

Hurricane Gustav made landfall in Southwest Louisiana on September 1, 2008 as a category two hurricane with the eye passing over Cocodrie, Louisiana. When Gustav made landfall, it had sustained winds of 105 mph causing severe flooding and damage. An estimated 153 deaths and over 4 billion dollars in damage was caused to surrounding communities. About two weeks after Hurricane Gustav, Hurricane Ike made landfall as a category two on September 13, 2008. Ike had consistent winds of 110 mph and caused over 20 billion dollars in damage to the Galveston area of Texas across to Southwest Louisiana.

Due to Clean Harbors' positive record with post hurricane work in the past, the company was asked to immediately support a federal agency after Gustav with logistics. Clean Harbors played a major role in providing generators, fuel, trailers, and disposal equipment to keep essential federal facilities up in running condition due to damages caused by Hurricane Gustav.

Nearly two weeks later, when Hurricane Ike made landfall in Texas, Clean Harbors' logistics efforts were doubled for the federal agency they were working for. Clean Harbors was asked to provide several large fueling stations for this agency due to the lack of availability of fuel in the area. Clean Harbors also received requests from several other federal agencies and private companies at this time. The scope of work for these companies included remediating debris and waste from facilities, responding to small transformer spills in communities surrounding Galveston, and removing carcasses of cattle and horses that were a result of the severe flooding caused by Ike.

After Clean Harbors' involvement in the immediate response after Gustav/Ike, the company was asked by a federal agency to remove hazardous debris and waste from Cameron and Calcasieu Parishes in Southwest Louisiana. The scope of this work was very similar to work done in this same area by Clean Harbors after Hurricane Rita. Clean Harbors utilized equipment such as airboats, marsh excavators, and barge boats to remove debris from the marshland in these locations. The span of this work was approximately two months.

PROJECT: BARGE COLLISION OIL SPILL ON MISSISSIPPI RIVER
CLIENT: VESSEL OWNER'S SPILL MANAGEMENT TEAM

Project Description:

On July 23, 2008 in New Orleans, Louisiana, a 600ft tanker ship collided with a tug and barge on the Mississippi River. The barge was carrying 10,000 barrels of # 6 fuel oil. Approximately 9,000 barrels or 420,000 gallons of oil were released when the barge was split into two sections by the tanker. The United States Coast Guard closed 100 miles of the river due to the incident.

Clean Harbors immediately responded to the event through their local offices by activating their Nation Response Team. At the height of the spill, Clean Harbors had over 500 people and 28 large vessels working on the Mississippi River. Initial operations included deploying 22,000 feet of containment boom at collection points around the shoreline of the river as well as around vessels docked in the vicinity of the spill. Clean Harbors was also heavily involved in the shoreline cleanup that came along with the spill. Remediating oily debris and deploying absorbent materials were included in this operation. The total time span of the project was six weeks, through the end of July into the first week of September.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: BUNKER OIL SPILL IN SAN FRANCISCO BAY

CLIENT: VESSEL OWNER'S SPILL MANAGEMENT TEAM

Project Description:

At approximately 8:30am on November 7, 2007, a 900-foot container ship had an allusion with the San Francisco Bay Bridge tearing a 200-foot hole on the port side of the vessel. This damage opened up two fuel tanks within the ship's hull and leaked roughly 58,000 gallons of fuel oil into the San Francisco Bay.

The oil spill affected 27 beaches within 5 counties in the San Francisco area. These counties included Marin County, San Francisco County, San Mateo County, Alameda County, and Contra Costa County. Not only were beaches inside the bay affected, but the Pacific Coastline from Stinson Beach down to Ocean Beach was affected, as well as several hundred birds and marine wildlife.

On November 8, 2007 Clean Harbors was hired by an Oil Spill Response Organization (OSRO) to remediate oil from beaches, marinas, and other heavy contaminated areas. Clean Harbors' National Response Team mobilized and managed over 100 personnel for the spill and utilized company resources from nearby locations such as San Jose, Sacramento, Los Angeles and San Diego.

Because of their superior work on the initial spill cleanup, Clean Harbors was asked to remain working for the OSRO by providing maintenance operations and hot shot crews. Any remaining oil that was deposited on beaches, rocky areas, and house pilings after the initial spill was removed by Clean Harbors.

PROJECT: LOW PATHOGEN AVIAN INFLUENZA CONTAMINATED BUILDING

CLIENT: FEDERAL AGENCY

Project Description:

At the request of a United States federal agency, Clean Harbors (CHES) responded on the 29th of June 2007 to one of four bird farms in Ferndale, New York concerning a low pathogen outbreak of Avian Influenza.

A population of quail within a group of 30,000 commercially raised birds was identified to be infected with the virus requiring the depopulation of the entire community of quail raised in a three-story building. The structure was segregated in two equal sections to raise quail on one side of the building and ducks, which were not infected with low pathogen avian influenza and not considered within the scope of this project, on the other side of the building. Health, safety and bio-security considerations were paramount. All parties agreed that each on-site organization would be responsible for providing and wearing the appropriate Personal Protective Equipment (PPE) as deemed necessary in each agency or company established Health and Safety program.

Considerations identified during the site walk and tailgate meeting were based on current industry poultry practices and logistics at the site. On-site composting of quail related substances was not an option and no material identified as gross contamination from inside the building was permitted to touch the ground outside the structure. Non-organic items (feeders, heating apparatus, etc.) inside the building were cleaned and disinfected. Organic items (bedding, litter material, solid/liquid fecal matter) not associated with structural integrity of the building were decommissioned and disposed as debris or waste.

The first step taken was removing the animals and carcasses. Then organic and non-organic matter was properly disposed of. The debris and waste were put into different types of storage containers for transportation and disposal. Staged 55-gallon DOT approved drums were used for containerizing quail and egg related substances, and gross contaminated was put into double lined 25 and 30 cubic yard roll off containers.

The final days on this project included complete sanitation of the building and a final walk through to ensure all objectives were completed. The entire decontamination of the building took a time span of 32 days.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: HURRICANE RITA RECOVERY, CAMERON, LA
CLIENT: FEDERAL AGENCY

Project Description:

Hurricane Rita came ashore in southwestern Louisiana on September 24, 2005, with the storm's eye passing near the community of Johnson's Bayou directly south of Sabine National Wildlife Refuge (SNWR) in Cameron Parish, Louisiana. A Category III hurricane at landfall, Rita caused widespread damage to the surrounding areas with winds in excess of 100 mph and a storm surge topping 15 to 20 feet. The coastal communities of Holly Beach, Johnson's Bayou, and Cameron received catastrophic damage. Oil drilling rigs and platforms located just offshore in the Gulf of Mexico also received heavy damage. Hazardous materials from these communities and commercial activities were carried by the wind and floodwaters into wildlife refuges, along with household materials, lumber, and displaced vegetation.

Because of their current working relationship with a federal agency on the Hurricane Katrina disaster relief, Clean Harbors Environmental Services was called to aid in the recovery of hazardous materials from the wetland areas. After an initial flyover of Cameron Parish, Clean Harbors was asked to mobilize a crew of ten people. Working as a joint effort with two federal agencies, a second flyover was performed a month later revealing thousands of more items in the marsh than the initial flyover.

Clean Harbors was able to use its extensive gulf coast networking to set up a fleet of over 20 single, double, and triple engine airboats, 8 marsh excavators and draglines, and 8 barge boats to assist in the effort. All of this equipment would follow teams of workers who walked the debris lines and picked up the debris. Crews spanned from the Louisiana – Texas state line eastward over 40 miles, and as far north as Hackberry, Louisiana (~15 miles). Clean Harbors was also able to procure a gated and secure office for two federal agencies to use as their command station in Lake Charles.

Clean Harbors aided in recovering over 60,000 total hazardous items on the project. The joint task force set a goal of finishing the project by June 1, 2006, and Clean Harbors finished by April 1, 2006. Because of their superior work on the Rita recovery project, they were asked by a federal agency to perform the same duties plus the duties of other contractors at the Cameron Prairie and Sabine National Wildlife Refuges during the second half of 2006.

PROJECT: HURRICANE KATRINA RESPONSE, NEW ORLEANS, LA
CLIENT: VARIOUS

Project Description:

On August 31, 2005, Hurricane Katrina hit the areas of southeastern Louisiana and southern Mississippi. Arguably the worst natural disaster in United States history, the hurricane destroyed thousands of homes and lives. Levee walls in New Orleans, Louisiana ruptured and flooded the entire city, forcing a complete evacuation of over 450,000 people in the city. Looting and violence ensued as much of the city searched for food and shelter, turning the city essentially into a war zone. The environmental damages and effects of the hurricane were numerous. According to the Natural Resources Defense Council, Hurricane Katrina triggered over 575 chemical and oil spills throughout the region, not to mention all of the water and mold damage that ensued from the flooding.

Clean Harbors Environmental Services response employees went to Baton Rouge to ensure the safety of employees in that area and to assess damages. The Clean Harbors office in Baton Rouge had minimal damage and was equipped with hundreds of acres of land. Event Strike Team personnel contacted a federal agency and informed them of our available resources in the area. The federal agency then requested to use the Baton Rouge facility as a command center for their response due to the security and available land. Within days Clean Harbors had procured over 30 camping trailers and set up a base to house over 300 people. The site was run as a normal service center at a much higher scale. Clean Harbors serviced over 30 customers and over 80 individual projects in the span of 8 months.

The Clean Harbors facility in Baton Rouge turned into a miniature city, with several customers living on the property. Campers were set up with fully functioning sewerage, water, electricity, and any other essentials. Utility services were installed to handle the increased phone and internet capacity of two federal agencies. Over 200 people were working under Clean Harbors' command including upper level managers, project managers, and technicians. More than 100 non-employees were using the facility as a base. Emergency response services were utilized near their full capacity for the entire company. Nearly every product line Clean Harbors offers worked during this response, including National Transportation, Technical and Remediation Services, Clean Pack, and Disposal. The field at the entrance of the facility was used as a helicopter launching pad for the two federal agencies and several other customers. At times there were over 15 helicopters on the property.

Within a day of the initial call, Clean Harbors procured a barge containing over 300,000 gallons of fuel to use for one of the federal agencies' fueling operations. On top of the barge fuel that was used, Clean Harbors had fuel station capabilities at the Baton Rouge facility that were fully utilized. A fueling team was set up to carry totes of fuel to several locations throughout the ravaged area, a job that lasted over 8 months. More than half a million gallons of fuel were delivered throughout the project.

It took another federal agency nearly a month to pump all of the water out of the city of New Orleans. The flooding caused all chemicals and oils to spill into the water, creating a massive potential for infection. Clean Harbors utilized their hazardous materials handling training as well as their marine operations expertise to deploy boom at each individual pumping location on Lake Pontchartrain. Clean Harbors also assisted this federal agency in decontaminating their mobile morgues. Much of this work was considered highly hazardous due to all of the unknown pathological variables involved.

At the Murphy's Oil facility in New Orleans, a 250,000-barrel above ground storage tank (tank # 250-2) was dislodged, lifted and damaged in flooding associated with Hurricane Katrina. At the time, the tank contained 65,000 barrels of mixed crude oil, and released approximately 25,110 barrels (1,050,000 gallons). The released oil impacted approximately 1,700 homes in an adjacent residential neighborhood, an area of approximately one square mile. A federal agency along with the spill management company hired by Murphy's, hired Clean Harbors to assist in the initial cleanup. Clean Harbors mobilized over 30 workers, several small workboats, and several skimmer setups. Clean Harbors was a presence on the spill until the maintenance phase began in late October 2005.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: OIL TANKER SPILL – DELAWARE RIVER, NJ/PA
CLIENT: VESSEL OWNER'S SPILL MANAGEMENT TEAM & FEDERAL AGENCY

Project Description:

Into the Delaware River en route to its terminal at a major asphalt refinery in Paulsboro, New Jersey. As two tugboats were helping the vessel maneuver to its terminal, a routine procedure, one of the tugboat operators noticed oil in the water. The oil tanker listed eight degrees and lost power. Two punctures in the tanker's hull, 1' x 2' and 1' x 6' in size, were later confirmed by divers from a federal agency. Over 265,000 gallons of Venezuelan crude oil spilled into the river. At the time of the spill, it was the second largest in United States history to the Exxon Valdez spill in Alaska in 1989.

The spill affected approximately 214 miles of shoreline along the tidal portion of the Delaware River, from the Tacony-Palmyra Bridge, which links northeast Philadelphia to Palmyra, New Jersey, south to the Smyrna River in Delaware. The oil affected numerous birds, marsh vegetation, benthic habitat, and recreation. It also caused the temporary shutdown of the Salem Nuclear Power Plant and commercial shipping traffic. Under contract with the vessel's deep water Oil Spill Response Organization (OSRO), Clean Harbors Environmental Services mobilized up to 360 people during this cleanup, managed by our internal Event Strike Team. Clean Harbors' responsibilities included vessel dispatch, vessel decontamination, beach cleanup and shoreline decontamination, marina cleaning, and managing the overall event decontamination area. Responders utilized Clean Harbors' facilities in Deptford and Bridgeport, New Jersey for staging and logistical support. Clean Harbors managed the vessel dispatch control from one of our Mobile Incident Command trailers in Gloucester City, New Jersey.

Clean Harbors continued working for the federal agency after the response was federalized in March 2005 and completed demobilization in May 2005.

PROJECT: HURRICANE ISABELLA RESPONSE - HOUSEHOLD HAZARDOUS WASTE

CLIENT: MULTIPLE GOVERNMENT AGENCIES AND COMPANIES

Project Description:

Clean Harbors Environmental Services was contracted by a U.S. government environmental agency in October 2003 to perform household hazardous waste collections in several counties in eastern North Carolina that were severely damaged by Hurricane Isabella. The contract included the labor, segregation, packaging, transportation and ultimate disposal of waste generated by residents of the affected communities.

Utilizing its fully permitted treatment storage and disposal facility in Reidsville, North Carolina as a base of operations Clean Harbors provided labor and transportation related to the collection, packaging, manifesting and transporting of the household hazardous waste. The Reidsville facility repackaged and consolidated lab pack material for ultimate disposal or recycling. The Clean Harbors technical services general manager acted as project manager and designated two operations managers. Approximately 80% of the labor used for these programs was based out of Reidsville with the other 20% giving support from Tucker, Georgia, Greenbrier, Tennessee, and Norfolk, Virginia.

The first collections were performed in Engelhard and Swanquarter, North Carolina. Clean Harbors mobilized two crews of three people to each site for these collections. These people included project managers, chemists, and field technicians. Each site was provided a Site-Specific Health and Safety Plan prepared by the project manager and reviewed for completeness by U.S. government environmental personnel. This site-specific plan was reviewed by all Clean Harbors employees and signed by all personnel on site. Clean Harbors personnel remained on site and collected household waste from residents who brought the material to the collection sites. The material was identified by the chemist on site and packaged for ultimate disposal based upon chemical compatibility and treatment technologies. At the end of the weekend, waste was manifested and remained on site for future pick up.

Following this first collection, eleven collection events were subsequently performed. These collections included Engelhard and Swanquarter again, along with Elizabeth City, Hertford, Bertie, Edenton, Greenville, Carteret and Craven counties. Carteret and Craven each had two different locations within the county. Clean Harbors mobilized thirty-one people, two tractor-trailers, six box trucks, and three pickup trucks to the eastern portion of the state in order to perform all of the collections. Additional collections occurred in the communities of Buxton, Kitty Hawk, Rodanthe, and Manteo. Clean Harbors mobilized ten people to these areas and performed the collections in the same fashion as outlined above.

The U.S. government environmental agency informed Clean Harbors that there was a roll-off container located in Edenton, North Carolina that had been storing household hazardous waste. Clean Harbors and the U.S. government environmental agency determined that the material in the roll-off could not be repackaged due to the need for additional health and safety equipment. Clean Harbors provided the equipment and dispatched a crew to remove the material from the roll off container and repackage it for disposal. Due to the hazardous condition inside of the roll off container, a separate health and safety plan was developed and approved by the U.S. government environmental agency prior to beginning the job. The removal of the material from the roll-off container was done using Level B personal protection equipment and was then identified and segregated for disposal by a chemist on site. The supervisor of this site was responsible for the constant monitoring of the environment inside the roll-off container to ensure the safety of the crew inside. The material was packaged and manifested and left on site until a tractor-trailer could transport the material to Clean Harbors' Reidsville facility.

All waste collected from these events was manifested with the U.S. government environmental agency as the generator and Clean Harbors Reidsville as the receiving facility. All waste was weighed at the Reidsville facility and processed for ultimate disposal. As per the contract, all waste destined for disposal was managed at a CERCLA approved facility and all waste appropriate for recycling was managed at a Clean Harbors approved recycling facility.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: BIO-HAZARDOUS/INFECTIOUS MATERIAL

CLIENT: PASSENGER TRAIN COMPANY

Contract Description:

Clean Harbors Environmental Services has provided contracted emergency response, site remediation, and transportation and disposal services for over six continuous years to a passenger train company. The 24/7 emergency response services require a two-hour response time and may involve oil spills, train derailments, or biological hazards such as blood borne pathogens from animal or human body parts. Transportation and disposal services are turnkey to include waste packing, profiling, labeling, manifesting, loading and transporting. Provision of these services often includes coordination with transportation subcontractors. Clean Harbors handles all hazardous and non-hazardous waste, from fluorescent tubes and paint to oil filters and contaminated soil.

The following is an excerpt from a typical blood borne pathogen response that occurred during the performance of services under this contract. Responses such as this occur approximately every month over a multi-state coverage area.

Project Description:

On Wednesday, March 26, 2003, Clean Harbors was called to respond to a fatality involving one of the client's high-speed passenger trains. A crew consisting of a foreman and two technicians was mobilized to the client rail yard facility located in Queens, New York. Once on site, Clean Harbors inspected the undercarriage of the engine and five cars for bio-hazardous material. It was determined that the engine and three cars were affected by infectious material. The crew then set up the work area, including laying out poly sheeting and absorbent blanket roll, covering the entire floor of the work area. The crew, in level C PPE, applied a 10-to-1 bleach solution to all affected areas of the engine. Personnel then began removing and bagging any "heavy" bio-hazardous materials encountered by utilizing assorted hand tools such as metal tongs and scrapers. After all "heavy" material was removed, the crew then re-sprayed all affected areas with the bleach solution and utilizing scrub brushes, scrubbed all affected areas clean.

The above process was repeated for Engine # 2030 and cars 3417, 3555, and 3302. The Clean Harbors foreman had the train inspected by the client yard supervisor and the cleanup was determined complete. Upon completion of decontamination, all rags, absorbent products, poly sheeting, and bagged bio-hazardous material were placed into cardboard bio-boxes, and labeled, and stored in the drum storage area for future pick-up. A total of four bio-boxes were generated.

PROJECT: OIL BARGE SPILL – BUZZARDS BAY (CAPE COD), MA

CLIENT: VESSEL'S PRIMARY OIL SPILL RESPONSE ORGANIZATION (OSRO)

Project Description:

Upon approach to the west entrance of the Cape Cod Canal, an oil barge reported sheening #6 fuel oil. The barge was carrying approximately 97,000 barrels of oil. The original report estimated that the loss of oil was minimal. However, a federal agency's over-flights showed a visible sheen 15 miles long by 2 miles wide, and a new estimate of 14,700 gallons (350 barrels) of oil lost was determined. As the spill progressed, it was later determined that the actual amount of the spill was closer to 100,000 gallons.

Clean Harbors Environmental Services was notified approximately an hour later and hired by the vessel's primary Oil Spill Removal Organization (OSRO) to provide containment boom around the barge. The release was contained with the first tide cycle. However, the oil did impact several beaches and islands along the east and west sides of the bay. The Clean Harbors Strike Team was in place on the day of the spill with 65 trained oil spill removal specialists. At the height of the activities, Clean Harbors had a total of 813 people working with a federal agency, a state environmental agency, local governments and some private citizens. Racing the clock in preparation for the large beach crowds on Memorial Day weekend, the crews worked days and nights removing remaining floating oil and restoring many recreational beaches for use.

Buzzards Bay is a very sensitive area that contains numerous fishing and breeding grounds, pristine beaches, recreational activities and several endangered species. One of the challenges faced was protecting an endangered bird species, the Piping Plover. This bird is the size of a tennis ball and there are only 500 pairs left, all residing in southeastern New England. In cooperation with the federal and state wildlife agencies, preventative measures were taken to protect the birds from the oil while their young were being hatched.

Clean Harbors worked in cooperation with the responsible party's primary OSRO and the federal agency's Vessel of Opportunity Skimming System (VOSS) to complete open water skimming operations. Clean Harbors also provided equipment, personal protective equipment, and personal safety support through a comprehensive logistics system. This system ensured people in the field had the right tools for the work being performed and for the prevention of serious injuries, such as dehydration and heat exhaustion.

Supporting this effort, Clean Harbors brought experienced crews in from many of our field offices and facilities including Albany, Boston, Bow, Baltimore, Brooklyn, Chicago, Cincinnati, Deptford, Houston, Prince George and Wichita.

Additionally, Clean Harbors hired a number of subcontractors from around the country to provide OSHA compliant labor support. The cleanup phase lasted three months and the maintenance phase lasted a couple months more. All the beaches were restored to their previous state or better.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: EMERGENCY ANTHRAX CLEANUP AT MAIL PROCESSING FACILITY

CLIENT: UNITED STATES GOVERNMENT

Project Description:

Clean Harbors Environmental Services was directed to proceed with emergency Anthrax cleanup at a United States government site in New York City, New York. The initial emergency response work was to be conducted on the third floor in an area of approximately 120,000 square feet containing 26 machines. The subject area was bordered to the North by 29th Street, to the South by 28th Street, to the West by 10th Avenue and to the East by an area known as ASM 100. This governmental site is located in the Manhattan section of New York City. This facility is the city's main processing center and employs 5,500 people. Five machines tested positive for Anthrax.

Procedures:

Pursuant to plans, specifications and safety protocols prepared by an independent consultant, Clean Harbors was responsible for isolation of work areas identified by the client. Work zone isolation techniques included standard protocol incorporating polyethylene sheeting barriers, warning tape and high-volume air movers equipped with HEPA filters. The high-volume air movers or negative air machines were used to maintain negative pressure with the exhaust either running to the building exterior or running to a second machine before discharging into the building interior. In general, all elevated horizontal surfaces and all machine surfaces within the affected areas were initially cleaned with HEPA-filter equipped vacuums. A 0.5% sodium hypochlorite solution was subsequently applied to all surfaces of the machines. Contact time for this solution was at least 15 minutes. The surface was then neutralized using a sodium thiosulfate and water solution. All machine surfaces were then water washed and ultimately wrapped in polyethylene sheeting. Exterior surfaces of non-porous equipment and floor surfaces in the affected areas were cleaned in the same manner. Air diffuser ducts and the exterior of the HVAC return ducts in the affected area were vacuumed and washed as previously described. All return ducts were then covered using polyethylene sheeting.

Summary:

In addition to more than 200 other personnel engaged in various support functions associated with recovery efforts, Clean Harbors mobilized approximately 225 people to staff this time-critical project. Technical support teams managed cleanup crews who worked around the clock, 7 days per week for over 5 weeks to restore the city's main processing center to full capacity. Areas of the facility were able to remain functional while Clean Harbors crews effectively decontaminated more than 60 machines, 400,000 square feet of floor space and associated ventilation systems. Clean Harbors also managed transportation and disposal of decontamination derived wastes and coordinated the overall effort with the client's consultant.

PROJECT: ANTHRAX DECONTAMINATION AT TV NETWORK

CLIENT: NATIONAL TELEVISION NETWORK

Project Description:

Clean Harbors Environmental Services was contracted for emergency response services related to the cleanup of Anthrax contamination at the offices of a major television network.

Containment and decontamination areas were constructed outside of the contaminated area. Negative air machines equipped with HEPA filters were set up in the work area, and ventilation hoses extended to the exterior of the building. All existing HVAC ducts, louvers, grills and diffusers in the work area were secured and sealed. Objects such as furniture (chairs, sofa, etc.) were sprayed with a bleach solution and cut up into manageable pieces for ultimate disposal. These pieces were then bagged and sealed. The exterior of the bags were then sprayed with bleach prior to transferring to personnel in the decontamination zone. Once in the decontamination zone, all bags were placed into a second poly bag, staged on poly sheeting in a temporary staging area pending disposal. Objects, which were to remain in the building, were cleaned using a bleach solution. Ceilings and walls were vacuumed using HEPA filters.

Finally, a bleach solution was applied onto the carpets. All carpeting was then cut into pieces and removed in the same manner as the furniture. Once the carpets were removed, the concrete floor was scraped and mopped with a bleach and water mixture. A crew of approximately eight personnel working around the clock performed all decontamination activities.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: 9/11 WORLD TRADE CENTER TERRORIST ATTACKS

CLIENT: MAJOR UTILITY COMPANY, U.S. GOVERNMENT, AND NATIONAL TELEVISION BROADCASTING

Project Description:

On the morning of September 11, 2001, the United States Homeland suffered the most devastating attack in American history. Four commercial airline flights were hijacked that day. Two of the four planes crashed into each of the World Trade Center's (WTC) landmark Twin Towers. Clean Harbors Environmental Services was immediately called upon to deploy personnel and equipment to assist local businesses, utility companies, and government agencies in protecting public health, safety and the environment.

Clean Harbors activated one of its Mobile Incident Command Units to lower Manhattan and began dispatching crews to assist in debris removal from various utility manholes located in proximity to the WTC Twin Towers. Crews were awaiting clearance to proceed from the New York Fire Department when the first tower collapsed.

Clean Harbors crews from around the country were dispatched to our Command Center located near Ground Zero. Their working relationships with several local utility companies as well as emergency response agreements with several federal agencies, allowed Clean Harbors to play a primary role in the disaster response. Clean Harbors was recognized by New York City's Office of Emergency Management, Federal Emergency Management Agency, and Joint Incident Command System (ICS) as a leader in the area of environmental emergency response.

Due to wide ranging task assignments, Clean Harbors personnel reported to several different authorities within the ICS. Local businesses utilized Clean Harbors to remove and dispose of oily debris from flooded basements and to abate dust from various offices, warehouses, and retail stores. Local utility companies employed Clean Harbors to clean manholes potentially contaminated with debris, cable oil, transformer oil and lead. Our crews saw-cut trenches to allow for new cable to be installed. Consulting Engineers utilized our resources to remove petroleum products from various underground storage tanks and pump oil-contaminated water through portable treatment systems. Air movers with HEPA filters were deployed to remove debris from neighboring areas as far as a mile away from Ground Zero.

Clean Harbors carried out New York City's Department of Health requirement to wash and contain runoff from every vehicle leaving Ground Zero in order to capture any loose debris, dust, and potential contaminants that might otherwise escape from the exclusion zone. Portable decontamination pads were installed to contain runoff from the vehicle wash stations set up in the support zone. Additionally, under the direction of the federal government, Clean Harbors supported Urban Search and Rescue Teams by obtaining and strategically staging portable wash stations and comfort areas.

All response and rescue personnel were able to use hot showers and wash-sinks located throughout the Ground Zero Support Zone. This allowed them to remove any potential inhalant particulates and/or blood borne pathogens as well as sanitize their respirators for reuse on their next shift.

PROJECT: 9/11 WORLD TRADE CENTER TERRORIST ATTACKS

CLIENT: MAJOR UTILITY COMPANY, U.S. GOVERNMENT, AND NATIONAL TELEVISION BROADCASTING

Project Description:

(Continued)

At the peak of this demanding and extremely emotional project, Clean Harbors deployed in excess of 140 technicians, equipment operators, foremen and project supervisors to the site. Clean Harbors employees, drawn from various Response Centers around the country, maintained many wash stations throughout Ground Zero as well as supported the day-to-day efforts of debris removal and utility repair.

This coordinated, around-the-clock deployment of highly skilled and trained emergency environmental response personnel representing a diverse array of specialties, by itself, was an outstanding accomplishment. To add to this accomplishment, while Clean Harbors' Emergency Response Strike Force was fully deployed at Ground Zero, anthrax began to threaten America's health and the environment, and Clean Harbors deployed an additional 225 employees strictly for anthrax response. Clean Harbors' simultaneous response to the government's call for help at Ground Zero and help in decontaminating anthrax locations in New York City, transformed their already outstanding accomplishment into a truly extraordinary feat.

Clean Harbors was called upon to decontaminate two national television studios with locations in Manhattan, as well as the largest U.S. postal facility in Manhattan, which with its 5,500 postal employees, moves more mail per day than any other facility in the country. Clean Harbors crews decontaminated each facility efficiently and effectively, completing the postal facility project ahead of schedule and under budget without closing it for even one day. While undertaking these projects, Clean Harbors never lost its focus on, or commitment to, the important work we continued to do at Ground Zero.

In summary, within hours after the two airliners struck the World Trade Towers on September 11, Clean Harbors was on the scene providing comprehensive environmental emergency response services. These services continued to be provided 24 hours a day until demobilization orders were received in early April as the clean-up process neared completion. These services also demonstrated Clean Harbors' efficient mobilization, organizational, logistical and operational capabilities as well as its ability to continue to provide normal emergency and non-emergency services to its regular clients throughout the nation during the emergency.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: OIL SPILL DURING SHIP OFFLOADING

CLIENT: MAJOR SOUTHERN NEW JERSEY REFINERY

Project Description:

Clean Harbors Environmental Services was activated by the client's spill management team as part of their Independent Contractors Network (ICN) to assist in the clean-up efforts at a spill on the Delaware River from a refinery in Paulsboro, New Jersey.

A "mini tornado" struck a large oceangoing tanker as it was discharging a cargo of crude oil at the refinery. Approximately 84,000 gallons of the product were released into the river when the force of the tornado drove the vessel away from the loading docks causing the discharge hose to break loose.

Clean Harbors mobilized nearly 150 spill responders from various locations to assist in the clean-up efforts. Clean Harbors also deployed 15 workboats to work on the spill, which affected nearly 7 miles of the riverbank. When the job progressed to the maintenance phase, Clean Harbors was able to provide 14 pressure washing units and various absorbent materials to aid in the recovery efforts. All work was performed during one of the worst heat waves ever experienced in the Philadelphia area. The average temperature during this project was over 98 degrees F. Clean-up efforts continued for approximately three weeks, at which time the majority of the oil had been cleaned up.

PROJECT: TANKERSHIP COLLISION/FUEL SPILL, PORTLAND, ME

CLIENT: SHIPPING COMPANY

Project Description:

When a 560-foot tanker ship collided with the "Million Dollar Bridge" in Portland Harbor's Fore River area and proceeded under its own power to the Sprague Dock, Clean Harbors' Strike Team personnel immediately responded to the emergency. Working under the line-handling contract with the vessel's agent, Clean Harbors moored the vessel to the dock and assisted in the booming.

The vessel, which was carrying a primary cargo of diesel fuel, spilled approximately 60,000 gallons of heavy bunker oil from its fuel tanks and approximately 120,000 gallons of the diesel fuel from its cargo tanks into the waters off Portland Harbor. Over the next several hours and days Clean Harbors, working in concert with other local contractors and fire department personnel, responded with nearly 150 OSHA 40-hour trained people, a mobile command center, and a complete supply and logistics organization. Additionally, Clean Harbors provided 11 workboats and trained marine operators.

Clean Harbors' Portland personnel were supplemented with Clean Harbors' Strike Team personnel from Bangor, Maine; Bow, New Hampshire; Boston, Massachusetts; Providence, Rhode Island; New Britain, Connecticut; Albany, New York; Edison, New Jersey; Philadelphia and Pittsburgh, Pennsylvania; Baltimore, Maryland; Richmond, Virginia; Charleston, South Carolina; Chicago, Illinois; and Cleveland and Cincinnati, Ohio.

Working in concert with two national OSROs, Clean Harbors assisted in the operation of Oil Spill Response Vessels and VOSS equipment. Within three days, over 700 people were actively engaged in cleaning up the spill and preventing further spillage.

In addition to being the primary contractor on site, Clean Harbors was also tasked with supplying all other parties with necessary materials and logistics services. Active clean-up continued for approximately two months, at which time, work transitioned from the recovery mode to the maintenance phase. Maintenance work continued for approximately four months.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: CONTAINMENT AREA COLLAPSED FROM TANK RUPTURE

CLIENT: RIVER-RAIL TERMINAL

Project Description:

A one million-gallon tank containing liquid nitrogen fertilizer ruptured, emptying 980,000 gallons of material into a concrete/earthen containment berm. The sudden discharge caused the berm to collapse and the bulk of the material flowed through the berm, over the dock barges and into the Ohio River, sending two semi-tractors and debris into the river.

Clean Harbors Environmental Services personnel arrived on site and deployed 700 feet of containment boom and 100 feet of deflection boom into the Ohio River around the collapsed portion of the containment area. Adjacent to the failed tank were four other one million-gallon tanks containing oils and solvents. The collapse caused major damage to two of the other tanks, which raised extreme concern for additional tank failures. After securing the initial concerns, Clean Harbors continued the 24-hour operation and began pumping out approximately 120,000 gallons of liquid fertilizer from the containment area and transferring it to another tank.

On-site regulatory personnel included the local fire and police departments, Ohio EPA, U.S. EPA, Coast Guard, and the local health department. The U.S. EPA requested the U.S. Coast Guard National Strike Team help assist, and the FBI arrived on site to investigate for possible Y2K sabotage, which was later ruled out.

After review of the situation with the regulatory agencies, it was decided to have Clean Harbors deploy an additional 1,000 feet of containment boom and 200 feet of deflection boom in the river for possible recovery from another tank failure.

Clean Harbors then assisted the responsible party in transferring approximately 3.5 million gallons of oil and solvent products from the other tanks for storage. Each tank was then cleaned, and the waste material placed in a Frac tank for later disposal. Soon after, Clean Harbors began removal of the semi tractors in the river. A diver was sent in to locate and hook up the tractors. A barge-mounted crane was used to remove them, and sorbent pads were used to absorb fuel oil as the tractors were removed.

Clean Harbors subsequently rinsed down the collapsed tank carcass and the scrap was removed. The berm was repaired and the boom from the river was removed.

PROJECT: OIL SPILL FROM SHIP DURING LIGHTERING

CLIENT: SHIPPING COMPANY

Project Description:

Clean Harbors Environmental Services was called to assist in the recovery efforts of a 40,000-gallon release of No. 6 grade fuel oil in Delaware Bay from a large oceangoing tanker. The tanker was in the process of lightering at the time of the spill (transferring its cargo to smaller vessels with less draft so that cargo could be taken into Delaware Bay).

The initial spill occurred at the mouth of Delaware Bay, but prevailing winds and tidal currents soon drove the product out into the Atlantic Ocean and then onto the 40 miles of New Jersey coast from Cape May to Brigantine.

Clean Harbors mobilized 75 responders from its Strike Team Network along with a Mobile Command Center and Logistics Group. Clean Harbors provided both beach clean-up services and logistics support, including portable sanitary facilities, tents and roll-off container services.

Crews were in a race against time to clean the beaches before the traditionally busy Memorial Day weekend. They were successful in this effort in that the beaches were clean for that important holiday. However, oil again began appearing after the weekend and crews had to be mobilized once more to address the same areas. Cleanup efforts finally concluded after about three weeks.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: TUGBOAT FIRE/BARGE OIL SPILL IN RHODE ISLAND

CLIENT: BARGE OWNER

Project Description:

Clean Harbors' Providence, Rhode Island office was informed of a tugboat ablaze in Block Island Sound, south of Point Judith. The crew of the tugboat was abandoning ship. Attached to the tug, by towline, was the barge, which was reportedly carrying four million gallons of # 2 fuel oil.

Clean Harbors promptly dispatched a supervisor and foreman to a federal agency station at Point Judith to offer assistance and to help monitor the situation. A state environmental agency was at the federal agency's station when Clean Harbors personnel arrived. A discussion ensued on the immediate issues. The status at that time was that the tug was on fire and the crew had been rescued, but the tug and barge were both adrift and headed towards sensitive barrier beach areas. Local tugs were unable to assist due to heavy weather conditions.

Clean Harbors was requested to assist the state environmental agency at the location where the barge was expected to go aground (Moonstone Beach in Narragansett). The barge did, in fact, wash ashore that night. A heavy odor of oil confirmed everyone's suspicions that the cargo was leaking. Due to the forecast of heavy weather until daybreak, cleanup activities were not scheduled to begin until the next morning.

Clean Harbors, working with one of the national OSROs on site, the salvage contractor, and the barge owner was tasked with several difficult and specialized operations. In the days following the grounding, the coastal areas from Point Judith to the Quonochontaug Breachway fell under heavy scrutiny. By the next day, crews had deployed approximately 6,000 feet of containment boom to protect areas designated "sensitive" on the area contingency plan. Breachways connecting the coastal ponds to the Atlantic became non-navigable due to the web of lines, booms, and anchors.

Tidal currents in excess of 20 knots forced cleanup crews to wait for tidal shifts in order to set equipment. The tidal shift consisted of a 5 to 10 minute window of opportunity each day. With the assistance from local fire department ice rescue teams, lines were shot across the 75' breach using .22 caliber rifles. These lines were then used to set mooring lines in place. Many deflection booms had to be set at angles of 15 degrees or less to counteract the high current flows.

An estimated 8,000 feet of sorbent boom and sweep were also deployed within Point Judith Pond, Card Pond, Trustom Pond, Green Hill Pond, Charlestown Pond, and Quonochontaug Pond. Most of this material was set in conjunction with containment booms. However, some sorbents were used by local shell fishermen to protect private seedbeds. Approximately 500 feet of containment boom were deployed at the entrance to the Great Salt Pond on New Shoreham (Block Island), but no oil ever reached "The Block".

PROJECT: OIL BARGE SPILL IN PUERTO RICO

CLIENT: CLIENT'S SPILL MANAGEMENT TEAM AND FEDERAL AGENCY

Project Description:

On January 7, 1994 between midnight and 4 a.m., an oil barge parted its towline and struck a reef in front of the Escambron Beach area near Old San Juan, Puerto Rico. The barge was reportedly carrying 35,000 barrels of # 6 oil and proceeded to spill approximately 20,000 barrels (880,000 gallons) over the next week as it broke up on the reef. The impacted areas were popular tourist beaches in front of two of the area's more exclusive resort hotels.

The client's spill management team, which had an OPA-90 contract with the barge owner, was called at 6 a.m. and immediately began mobilizing equipment and personnel. The client's spill management team then called Clean Harbors Environmental Services to assist them in the response and recovery effort.

Two Clean Harbors supervisors based in Puerto Rico were on site by 9 a.m. assisting the two Puerto Rico based members of the client's spill management team as first responders. The following day, Clean Harbors added five mainland supervisors and expanded this initial force up to twenty by mid-month. At the height of the spill, we were tasked with supervising up to 400 local labor personnel.

The spill consisted of three phases from an administrative viewpoint and two phases from an operational viewpoint. In the first instance, Clean Harbors worked for the client's spill management team who, in turn, worked for the insurance company representing the barge owners. As the insurance coverage ran out, the client's spill management team executed a commercial contract with a federal agency and began working directly for them. (Clean Harbors continued working for the client's spill management team.) This phase lasted several more weeks until Clean Harbors began working directly for the federal agency under an existing Basic Ordering Agreements (BOA).

Operationally, during these administrative phases, the spill moved in a gradual transition from emergency 24-hours around-the-clock response to planned emergency work, which consisted of 10 to 12-hour days cleaning the beach and performing routine maintenance checks.

Two months later, Clean Harbors was relieved of all of its supervisory duties as most of the spill had become local labor maintenance. We were asked to continue acting as the local supply procurers at that point and continue in that mode through final cleanup.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: EMERGENCY RESPONSE TO A PIPELINE FAILURE

CLIENT: MAJOR REFINERY

Project Description:

Clean Harbors Environmental Services was contacted by a major refinery and requested to respond to a pipeline failure in Kentucky. Initial reports were that an estimated 15,000 bbl of crude oil had been released and the pipeline was isolated. The initial point of the release was a municipal golf course; the release left that initial property and passed through several other properties in a rural farm area. Clean Harbors was informed that two other contractors were on-site, but additional resources would be required.

Clean Harbors immediately mobilized personnel and equipment to the site at the refinery's request. Upon arrival at the site and initial evaluation by Clean Harbors and the client, we were directed to focus efforts on recovery of product while others were tasked with controlling migration of the release. Clean Harbors personnel and equipment were strategically staged to begin recovery operations. Additional personnel and equipment resources began mobilization from other Clean Harbors locations.

Within the next twenty-four hours, Clean Harbors had sixty personnel and thirty pieces of associated recovery equipment including vacuum trucks, skimmers, frac tanks, and earth moving equipment working on the recovery of the released product. Site conditions, including freezing temperatures and the rural terrain, dictated additional support equipment needs in the form of a portable boiler, heat coiled recirculation vessels, and off-road vehicles to provide the safe and expeditious recovery of the released product.

Work at the site from initiation continued around the clock for several days to minimize the risk of released material migrating any further and to continue recovery operations. Due to the large volume of material to be recovered, the client utilized their asphalt plant in Lexington, Kentucky for oil/water phase separation and their refinery in Catlettsburg, Kentucky for disposition of the product. By utilizing these two off-site facilities, completion of the recovery and off-site removal of material was expedited.

The final task associated with the incident was the decontamination of all on-site equipment both at the spill site and at the client's asphalt plant. This was completed by Clean Harbors and all equipment was demobilized.

PROJECT: OVERTURNED GAS TANKER

CLIENT: FUEL OIL DISTRIBUTOR

Project Description:

When a gasoline tanker overturned on an interstate highway in southern New Hampshire in the early morning, a New Hampshire state agency immediately called Clean Harbors to respond. Within twenty minutes, our crew arrived and discussed the situation with the fire department.

The tanker, which was carrying 11,000 gallons of gasoline, was lying on its side and leaking gas from a vent. The fire department plugged the vent. After holding a safety meeting conference with our Health & Safety Department, Clean Harbors Environmental Services off-loaded the tanker without cutting it. We connected the off-loading lines of the tanker to our vacuum trailer and used the wrecker on site to connect air attachments to the tanker so we could open the internal valves. The vapor recovery valves were opened for a vent, and we were able to pump out almost all of the 11,000 gallons of gasoline.

Clean Harbors worked under extreme pressure so that the interstate highway could be reopened by mid-afternoon. The concern was that outbound commuter traffic from the City of Boston would be severely impacted by this closure. We discussed the option of returning to the scene later that evening after the traffic volume slowed. Our crew excavated approximately 60 yards of contaminated soil and took samples when they returned to the site that evening. Clean Harbors completed the remediation of the site with excavation and removal of additional soil for disposal.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: PRODUCT RECOVERY, GROUNDWATER TREATMENT SYSTEM DESIGN, SYSTEM CONSTRUCTION, OPERATION/MAINTENANCE DUE TO JET FUEL RELEASE

CLIENT: INDUSTRIAL SITE IN ILLINOIS

Project Description:

Clean Harbors Environmental Services was contracted to respond to and remediate a subsurface release of approximately 75,000 gallons of jet fuel. As part of the emergency response effort, Clean Harbors immediately mobilized several diesel-powered trash pumps, three Frac tanks, and a mobile, liquid-phase granular activated carbon (GAC) system with pre-filters, controls and instrumentation.

In a joint effort with the resident consulting engineers, a permanent remediation system was designed and implemented at the site within six weeks. The remediation system was sized to recover and process up to 50 gallons per minute of groundwater. The system included 18 pneumatic total fluids recovery pumps, an air-drying system, an oil/water separator, sediment filtration, an iron sequestering system, a liquid-phase granular activated system, a product storage tank, instrumentation and controls. All exterior recovery and discharge piping was installed at a depth of 4 feet for freeze protection.

The system was fully automated and fail-safe. Controls and instrumentation included a status panel for all recovery wells, flow, pressure and temperature instrumentation and a telemetry system (auto dialer) to notify responsible personnel in an event of select alarm conditions. Within a 3-month period, Clean Harbors was able to recover approximately 18,000 gallons of jet fuel.

In a joint effort with the consulting engineers, a Dual-Phase extraction and treatment system was designed and installed at the site. The Dual-Phase system services a total of 28 extraction wells. The system consists of 2 skid-mounted extraction units including separator tanks, liquid-ring pumps, heat exchangers, on-site steam re-generable vapor-phase carbon units, instrumentation and controls. The Dual-Phase control logic was integrated with the previously installed recovery and treatment system. Presently, Clean Harbors operates and maintains both remedial systems.

Clean Harbors maintained the highest level of safety over the duration of the project working under adverse and sensitive conditions.

PROJECT: MERCURY REGULATOR EMERGENCY RESPONSE CLIENT: MAJOR CHICAGO GAS DISTRIBUTION COMPANY

Project Description:

Clean Harbors Environmental Services responded to a large-scale mercury spill event in the Chicago area for a major gas distribution company. The spill was a result of a program instituted by the gas company to replace mercury-containing gas regulators in both residential and commercial locations. During the replacement process, the free mercury contained within the regulators was spilled. It was estimated that there were over 200,000 homes and businesses with potential contamination.

At the request of the gas company, Clean Harbors' Emergency Response teams were activated to provide project oversight and decontamination service to facilitate the cleaning of the various locations. Clean Harbors responded with over 100 personnel consisting of field technicians, foremen, supervisors, project managers, industrial hygienists and our spill response support team.

Clean Harbors personnel were deployed in teams of five. Each team was equipped with a state-of-the-art emergency response module unit designed for mercury decontamination work processes. These units contained special vacuum equipment designed to remove free mercury from the suspect location while filtering the potential hazardous exhaust, to protect both Clean Harbors personnel and the general public. The units also contained specialized monitoring equipment, PPE, and various other supplies utilized to facilitate the decontamination process. The decontamination process varied from location to location depending on the extent of contamination. During the project, Clean Harbors crews decontaminated over 250 separate locations.

Clean Harbors employed our state-of-the-art emergency response billing and project costing system during this project, resulting in huge cost benefits to the customer. Each location required separate cost tracking and a detailed report of the work performed. Clean Harbors' ability to utilize our state-of-the-art information management systems differentiated us from the other contractors on this project.

Clean Harbors maintained personnel on the project for four months until the Illinois Environmental Protection Agency and the customer determined there was no longer any health threat to the public due to mercury contamination.



PROJECT: LIQUID MERCURY SPILL

CLIENT: CONFIDENTIAL

Project Description:

An accident involving equipment containing liquid mercury resulted in the contamination of a drinking water production facility. The contamination spread throughout interior tanks and structures. Resultant foot traffic and equipment removal expanded the contamination zone to include the ground outside the building.

Clean Harbors Environmental Services responded and performed emergency containment and decontamination of construction materials, hand tools, and the entire building, including a 1,000,000-gallon underground potable water reservoir. All work in the tank was performed using Clean Harbors' standard operating procedures for confined space entry. All working areas and personnel were monitored for exposure to levels of mercury in the air using personal sampling pumps and Jerome mercury vapor detection meters. Clean Harbors also developed an intensive soil sampling plan to characterize the entire site and determine the extent of contamination.

In addition, Clean Harbors performed removal, analysis, transportation, and disposal of contaminated debris and soil at the site.

EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: POWER PLANT DECONTAMINATION & TURBINE ROOM CLEANUP

CLIENT: MAJOR POWER COMPANY

Project Description:

Clean Harbors Environmental Services was contracted to respond on an emergency basis to contain and remove contaminated water, sludge, oil and debris resulting from a turbine explosion and subsequent fire in a power plant's number three turbine.

Following completion of the emergency containment, Clean Harbors performed sampling and determined that the soot that had coated the turbine area contained high levels of selenium, lead, cadmium and chloride. Clean Harbors was awarded an emergency contract by the re-build contractor to perform a complete decontamination of the turbine building. We mobilized 86 people in 4 days to perform on a 24-hour, 7 days per week basis. The decontamination effort was completed two days ahead of schedule and on budget.



EMERGENCY RESPONSE PROJECT ABSTRACTS

PROJECT: SAMPLING RELATED TO SUSPECTED ANTHRAX CONTAMINATION

CLIENT: HOSPITAL IN NEW YORK STATE

Project Description:

Clean Harbors Environmental Services received a call from a New York state hospital's administration security office. While opening mail, a receptionist noticed white powder on an envelope and immediately contacted the security office. The envelope passed through four offices after it was opened.

The building was evacuated and the State Police were on site. Clean Harbors responded with a five-man crew within three hours of the call. After a 45-minute meeting with hospital officials and the State Police, Clean Harbors personnel entered the offices in EPA Level B Personal Protective Equipment (PPE), collected a sample of the powder for analysis, and submitted it to the State Police.

A decontamination area was set up outside the second floor stairwell, and a three-man entry team entered the offices in Level B PPE and initiated decontamination activities. All tables, chairs, floors and other horizontal surfaces were decontaminated using HEPA vacuums and a bleach solution. All paperwork was double bagged along with any clothing pending sample results. A total of twenty-three bio boxes were generated over the course of nine hours. All boxes were sealed and secured on site pending sample results. Swab samples were then taken from each office and sent out for confirmatory analysis.

All analytical results were negative for Anthrax at this hospital.



STRIKE TEAM RESUMES



A.	Name, Title & Local Company Address:				
	Chuck Geer Senior Vice President 42 Longwater Drive Norwell, Massachusetts 02061				
B.	Project Assignment				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	16	With Other Firms:	9	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Bachelor of Science, Environmental Science, Oakland University 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Senior Vice President, Field Services National Product Line July 2019-Present • Vice President of Field Services, Technical Services and Industrial Services Jan 2018 – July 2019 • Vice President of Sales and Operations of Field Service 2016 - 2017 • Vice President of Field Services 2014-2016 • Director of Site Services, Clean Harbors Env Services, Sterling Heights, MI • General Manager, Clean Harbors Env Services, Sterling Heights, MI • Plant Manager, PSC, Detroit Michigan • Total Waste Manager, WM Inc, Warren, MI • Operations Manager, PSC, Detroit, MI 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • County of San Diego Hep A decontamination • Union Pacific Derailment • Wisconsin Energy sediment control incident into Lake Michigan • Enbridge Oil Spill, Marshall, MI • Marathon Oil Spill, Dansville, MI • Cygent Oil Spill, Cygnet, OH • Part B facility rebuild Detroit, MI 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • Leadership and Development Training • DOT Training • 40 Hour OSHA Required Training for Hazardous Waste • Certified CPR & Basic First Aid • Hearing Conversation • RCRA Training 				



- BBP training
- Heat/Cold Stress
- Fall Protection
- Hot Work training
- Hazardous Materials Regulation 49 CFR
- Federal Motor Carrier Safety regulations
- TWIC Card
- Boat Operators License



A.	Name, Title & Local Company Address:				
	Charles Brownell SVP Field Services National Business Line 42 Longwater Drive Norwell, Massachusetts 02061				
B.	Project Assignment				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	28	With Other Firms:	0	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> Cambridge Central High School. 1991 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> Clean Harbors – SVP Sales, DVP North Mid Atlantic HydrochemPSC (Clean Harbors Owned) – SVP Utilities East Region, SVP Business Development, VP East Region 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> Various Utility Emergency Response Events Industrial Services Projects 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> TWIC Janek Sales Training Leadership and Development Training Heat/Cold Stress Hot Work Training Fall Protection Confined Space Hydroblast Automation 				



A.	Name, Title & Local Company Address:				
	Frank Flanagan Vice President National Business Line Clean Harbors Environmental Services, Inc. 7800 S. 206 th Street. Kent, Washington 98032				
B.	Project Assignment				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	7	With Other Firms:	27	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • 40-Hour HAZWOPER Certification • 80-Hour Trained • Class A CDL HazMat/Tanker • Personal Protective Equipment Trainer • Level A trainer • Shipyard Competent Person • Aerial Lift Certified • CSE vertical and horizontal rescue • DOT Supervisor trained • OWT/OSRO ICS100/200/300/700 certified • OSHA 10 • Heavy equipment operator and trainer • Forklift operator and trainer • Confined space supervisor and trainer • Tank car specialist • Advanced railcar specialist • Vacuum truck operator • MSA air monitor calibrator and maintenance 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Project planner – work with Coordinator and project manager’s to coordinated and execute projects • Project estimating and quoting. • Safety training – Conduct training on safety equipment with crew members and keeping team current on eight-hour refresher also respiratory protection and specific job training like line opening and lock out tag out procedures and policies • Confined space entrant, attendant and rescue trainer –Training for new hires and annual drills to keep team current on confined space policies and procedures. • Confined space supervisor auditor – Conduct audits on confined space supervisors to make sure everyone is keeping up 				

	<p>with all policies and procedures.</p> <ul style="list-style-type: none"> • Qualitative and quantitative fit testing –fit test crew on respirator annually to make sure crew has proper mask fittings. • Customer site class training – conduct specific training classes for customers like PPE donning and doffing, emergency spill response and hazardous site set up and staging. • Boat operator trainer – certify competent persons to operate marine vessels and conduct over the water spill clean ups. • Organize ER schedule and manpower and track cost of project.
G.	Major Project Experience:
	<ul style="list-style-type: none"> • Terminal and Marine Vessel • Mystic 7 cleaning & demo project • Astoria Brooklyn cleaning & demo project • Pulp and paper mills



A.	Name, Title & Local Company Address:				
	Wesley R. Fehskens Field Operations Manager 42 Longwater Drive Norwell, Massachusetts 02061				
B.	Project Assignment				
	Project Support				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	4	With Other Firms:	2	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Massachusetts Maritime Academy, Bachelor of Science: Marine Safety and Environmental Protection, 2013-2017 • Massachusetts Maritime Academy, Master of Science: Emergency Management, 2022-2024 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Program Specialist, Emergency Operations Center – Clean Harbors • Environmental Officer, Shipboard – Royal Caribbean Cruises 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • Red Hill Water Crisis, Joint Base Pearl Harbor-Hickam, Honolulu, HI 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • OSHA HAZWOPER 40 Hour and 24 Hour / CHES Corporate • DOT & RCRA / CHES Corporate • ICS 100, 200, 300, 700, 800 / NIMS & Weber Readiness • Certified CPR & Basic First Aid / Red Cross • STCW Basic Training / Northeast Maritime Institute • STCW Advanced Fire Fighting / Northeast Maritime Institute • TWIC 				



A.	Name, Title & Local Company Address:				
	Rickie P. Garritt Branch Manager 1205 Toole Drive New Iberia, Louisiana 70562				
B.	Project Assignment				
	Project Manager				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	17	With Other Firms:	10	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Breaux Bridge High School, 1993 • United States Marine Corps Reserve, 1994-1997 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Environmental Technician - Four Seasons Environmental • Environmental Technician and Supervisor - Oil Mop Inc. • Foreman - ES&H • Facility Manager - B&B Fire and Safety 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • World Trade Center, New York, NY • Hurricane Ike, Galveston, TX • Floods, Cedar Rapids, IA • Pipeline Oil Spill, Collins, MS • Athosi Oil Spill, Philadelphia, PA • Eagle Otome, Port Arthur, TX • Cape Cod Canal Oil Spill, Buzzards Bay, MA • Hurricane Katrina, Gulf Coast states • Hurricane Rita, Gulf Coast states • Refinery Release, Lake Charles, LA • Buffalo Oil Spill, Galveston, TX • Eunice Train Derailment, Eunice, LA • Airport Jet Fuel Spill, San Juan, PR • Hurricane Ike, Gulf Coast States • Deepwater Horizon, Gulf Coast States • Yellowstone River, Billings, MT • Hurricane Harvey, Texas • Avian Influenza Outbreak 2015, Iowa 				



	<ul style="list-style-type: none">• Golden Ray Incident 2019, St. Simons Island, GA• Nashville Creek Cleanup 2021, Tennessee
H.	Environmental & Health and Safety Training:
	<ul style="list-style-type: none">• 40 Hour OSHA Required Training for Hazardous Waste / CHES Corporate• 8 Hour OSHA Supervisor Training for Hazardous Waste / CHES Corporate• Certified CPR & Basic First Aid / CHES Corporate• ICS 100, 200, 300 / Weber Readiness



A.	Name, Title & Local Company Address:				
	LCDR Jarrod E. Pomajzl, USCG (ret.) Operations Manager 42 Longwater Drive Norwell, Massachusetts 02061				
B.	Project Assignment				
	Project Manager				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	.5	With Other Firms:	25+	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Upper Iowa University, Bachelor’s Degree in Criminal Justice (2006) • Norwich University, Master’s Degree in Diplomacy (2009) • University of New Haven, Master’s Degree in Industrial/Organizational Psychology (2018) 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Coast Guard Federal On-Scene Coordinator’s Representative • Coast Guard Pollution Responder • Coast Guard Facility Inspector • Coast Guard Container Inspector • Coast Guard Explosive Handling Supervisor • Coast Guard Search & Rescue Mission Coordinator • ICS Operations Section Chief • ICS Planning Section Chief • ICS Division/Group Supervisor • ICS Public Information Officer 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • Coast Guard Incident Commander - Deep River Barge Response • Coast Guard Incident Commander – Salvage/Recovery Operations for M/V ALERT & M/V SAKARISSA • Deepwater Horizon – Coast Guard Branch Chief for Grand Isle, LA & Port Fourchon, LA • Superstorm Sandy – Coast Guard representative to FEMA & Department of Homeland Security • Boston Marathon Bombings – Coast Guard representative to FEMA & Department of Homeland Security • Mobile Offshore Drilling Unit KULLUCK – Coast Guard representative to FEMA & Department of Homeland Security • Coast Guard Incident Commander – Brookings, CA Tsunami Response 				



H.	Environmental & Health and Safety Training:
	<ul style="list-style-type: none">• USCG Marine Science Technician A-School (2004)• DOT 40-hour HAZWOPER (2004)• USCG Explosive Handling Supervisor Course (2004)• USCG Critical Incident Stress Management Course (2005)• USCG Leadership & Management School (2005)• USCG Shoreside Confined Space Entry Course (2005)• USCG Container Inspection Course (2005)• Texas A&M Offshore/Inland Oil Spill Control Course (2006)• USCG Shipboard Firefighting & Damage Control (2008)• USCG Maritime Search & Rescue Planning Course (2009)• USCG Public Affairs Officer Course (2015)• USCG Search & Rescue Mission Coordinator Course (2016)• USCG Instructor Development Course (2020)• USCG Senior Leaders Transition Course (2021)• Incident Command System – 100, 200, 300, 339, 346, 347, 348, 400, 430/440, 700, 800,

a.	Name, Title & Local Company Address:				
	Cody J. Issler Field Service Branch Manager 2130-121 Ave NE Edmonton, Alberta T6S 1B1				
b.	Project Assignment				
	Field Service Branch Manager				
c.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
d.	Years Experience – With This Firm:	9.5	With Other Firms:	3	
e.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Diploma in Land and Water Resources with a Major in Land Reclamation from Olds College 				
f.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Field Service Technician, Tervita Corporation, Edmonton, AB • Project Manager IS, Emergency Response Clean Harbors Energy & Industrial Services Edmonton, AB 				
g.	Major Project Experience:				
	<ul style="list-style-type: none"> • Pipeline Break, Oil Spill into wetland area, Red Earth, AB • Pipeline Break, Oil Spill into Red Deer River, Glennifer Lake, AB • Pipeline Break, Condensate Spill, Manning, AB • Wolf Lake Oil Spill, Cold Lake Air Weapons Range, AB • Diesel Spill, Fort McMurray, AB • Site Remediation After Tank Fire, Hardisty, AB • Fort McMurray Forest Fire Support • Tailings Pond Remediation, Fort McMurray, AB • Substation Remediation, Mundare, AB • Diesel Spill Clean-up, Edson, AB • Gas Station Remediation, St. Albert, AB 				
h.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • Small Remotely Piloted Aircraft Systems (RPAS), Visual Line-of-sight (VLOS) – Basic and Advanced operations • OSSA Confined Space Entry/Monitor Training / CHES • Certified CPR & Basic First Aid / Saint John’s Ambulance • 40-Hour Hazardous Waste Operations Program • Basic Spill Training / Quantum Murray • OSSA Fall Protection / CHES • H2S Alive / Enform 				

- WHIMIS / CHES
- CSTS / CHES
- TDG / CHES
- Fire Extinguisher Training / CHES
- Pleasure Craft Operating Certificate
- Marine Emergency Duties (MED-A3) / WCSS
- Small Vessel Operating Proficiency (SVOP) / ITE
- Ground Disturbance level II /Global
- Zurich Defensive Driver Training / CHES
- Wildlife Awareness Training / CHES
- OSSA Regional Orientation Program / HAZCO
- Spill Responder 100 / WCSS
- E-Rail Safe / CN/CP

a.	Name, Title & Local Company Address:				
	Alfio R Corvino Technical Services District Manager 45 Terracon Place Winnipeg, MB R2J 4B3				
b.	Project Assignment				
	General Manager of Winnipeg Technical Services – Hazwaste management for Saskatchewan Manitoba and NW Ontario General Manager of Winnipeg Field and Emergency Response Services for Manitoba				
c.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
d.	Years Experience – With This Firm:	19	With Other Firms:	4	
e.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	B.Sc. Environmental Science, University of Manitoba				
f.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> Currently manage many fortune 400 customers hazardous waste disposal requirements. 				
g.	Major Project Experience:				
	<ul style="list-style-type: none"> Emergency response and subsequent two year remediation work of chemical contamination post fire at a large educational institution in Manitoba. Emergency response support for several large derailments in Manitoba. Designed and implemented Cyanide decontamination projects of mine sites in NW Ontario 2019 and Northern BC 2021 Multiple pulp mill closures throughout Manitoba and NW Ontario including tank and piping decontamination, chemical disposal and site remediation. Designed and implemented perchloric acid decontamination programs for government and educational institutions throughout Western Canada. Designed and implemented PCB and NORM cleaning and disposal projects for pipelines, power generating stations and utilities across western Canada. 				
h.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> 40 Hour Hazwoper Training Advanced Tank Car Specialist WHMIS Global Harmonized PCB Management CSTS TDG Leadership for Safety Excellence / CSAM Principals of Safety Management / CSAM Loss Prevention and Control / CHES Registered Safety Auditor (COR) / CSAM 				

A.	Name, Title & Local Company Address:				
	Tyrone Heiman Field Service Branch Manager 520 Southgate Drive Guelph, Ontario, N1G4P5				
B.	Project Assignment				
	Field Service Branch Manager				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	3	With Other Firms:	25+	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Wilfrid Laurier University, Bachelor’s Degree and Business Administration (1996). 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Branch Manager, Veolia Environmental Services. • Branch Manager, Safety Kleen Environmental Services. • Operations Manager, Ground Force/GFL Environmental Services. • Director of Operations, Badger Infrastructure Solutions. 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • Fuel and Hydraulic Spills x 100s on roadways in SW Ontario. • Site Remediation and Cleanups from Fires and Explosions. • Spill Cleanups at various Chemical, Food, Assembly and Refinery Facilities over a 25+ Year Period. 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • 40-hour HAZWOPER • First Aid + CPR • CSE & CSE Rescue • WHIMIS • TDG • Ground Disturbance • E-Rail Safe – CN 				

A.	Name, Title & Local Company Address:				
	Simon Dulude Branch Manager 6785 Rte 132, Sainte-Catherine, Qc, Canada, J5C 1B6				
B.	Project Assignment				
	Branch Manager				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	20	With Other Firms:	3	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • College de Valleyfield (2003) (Analytical Chemistry College Degree) 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Technician in a chemical laboratory (10 years) • House Hazardous Waste responsible (15 years) • Incinerator Facility Supervisor (1 year) • Field Services Supervisor (Customer site service) (5 years) • Logistic Coordinator (4 years) 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • Health and Safety responsible for refinery shutdown • Manage aeronautic customer shutdown 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • Confined space entry training • Lift operator 				



A.	Name, Title & Local Company Address:				
	Brent MacMillan Regional Health & Safety manager- Environmental Sales and Services 1790 Ironstone drive Burlington, Ontario, L7L 5V3				
B.	Project Assignment				
	Safety Manager				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	10	With Other Firms:	21+	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Certified Industrial Hygienist, American Board of Industrial Hygiene (2016) • Canadian Registered Safety Professional Certification (2007) • H.B.Sc. – Kinesiology and Health Sciences, York University (2002) • Advanced Coaching Certificate, York University (2001) 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Current MBA student • Pervious sitting board member of the Ontario Hospitals Associations safety program • Pervious sitting board member of Saskatchewan Meat Packing Safety Association 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • Industrial Hygiene program development for emergency explosion to above ground chemical tank • Industrial Hygiene program development for confined space entry jobs 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • Certified Industrial Hygienist- continuing education • Canadian Registered Safety Professional Certification- continuing education 				



A.	Name, Title & Local Company Address:				
	Rhaddie Martinez, CPA, CMA Sr. Finance Director Clean Harbors 12210 23 ST NE Edmonton, AB T6S 1B1				
B.	Project Assignment				
	Accounting & Finance				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	8	With Other Firms:	15+	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • CPA, CMA Strategic Leadership Program (2011) • Northern Alberta Institute of Technology, School of Business (2008) 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • 10+ years working on project-based accounting 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • Kitimat LNG British Columbia (Site Controller): 2012-2015 (Civil work to develop land for LNG) • Husky Oil Spill Lloydminster Alberta (Finance Manager): Accounting/Finance oversight: 2016 				
H.	Environmental & Health and Safety Training:				



A.	Name, Title & Local Company Address:			
	John Rodier Director, Emergency Response Services 101 Philip Drive Norwell, MA 02061-9149			
B.	Project Assignment			
	Emergency Operations Center and ER Subject Matter Expert			
C.	Corporate Address:			
	Clean Harbors Environmental Services 101 Philip Drive Norwell, Massachusetts 02061			
D.	Years Experience – With This Firm:	13	With Other Firms:	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations			
	<ul style="list-style-type: none"> • Executive Master of Business Administration, Northeastern University (2016) • Bachelor of Science, Management, Boston College Carroll School of Management, Honors Program (2009) • St. John’s High School, Shrewsbury, MA (2005) 			
F.	Other Experience and Qualifications Relevant to the Proposed Project:			
	<ul style="list-style-type: none"> • Oversight of 24/7/365 Emergency Operations Center (EOC) supporting customer and Clean Harbors operations • Subject Matter in Emergency Response assisting sales and operations. Attend customer and regulatory tabletop exercises • Responsible for negotiating and tracking Emergency Response Agreements as well as company Response Equipment in order to keep both Clean Harbors and customers in regulatory compliance • Moderator for Customer Service Operational Excellence Team consisting of top executives and managers 			
G.	Major Project Experience:			
	<ul style="list-style-type: none"> • Superstorm Sandy – 2012 <ul style="list-style-type: none"> ○ Functioned as liaison stationed at Incident Command and tracked equipment resources on project • Hurricane Irene, Schoharie County, NY – 2011 <ul style="list-style-type: none"> ○ Managed all financial aspects of the flood cleanup for Schoharie and the surrounding counties as the result of the flooding caused by Hurricane Irene and Tropical Storm Lee - including client communication, resource tracking, subcontractor management and the entire invoicing process. Created a smooth process flow for the local office to follow for future projects in order to better comply with strict state requirements. • Pipeline Failure, Kalamazoo River, MI – 2010 <ul style="list-style-type: none"> ○ Oversaw audit of all daily worksheets and estimates to the customer, tracked all equipment resources on project, and led the invoicing process. • Deepwater Horizon, Gulf of Mexico - 2010 <ul style="list-style-type: none"> ○ Managed flow of paperwork and nightly entry for over 60 work sites and 3,000 workers. • Other Major Project Experience <ul style="list-style-type: none"> ○ Hurricane Harvey Response Efforts – 2017; Pipeline Failure, Yellowstone River, MT – 2011; Western MA Tornadoes, Springfield, MA – 2011; Training and Integration of New Acquisition, AB, Canada - 2011 			
H.	Environmental & Health and Safety Training:			
	<ul style="list-style-type: none"> • OSHA 40-Hour HAZWOPER Training • ICS 100, 200 			



A.	Name, Title & Local Company Address:				
	Jonathan Holmes EOC Manager 101 Philip Drive Norwell, MA 02061-9149				
B.	Project Assignment				
	Emergency Operations Manager, Emergency Operations Center				
C.	Corporate Address:				
	Clean Harbors Environmental Services 101 Philip Drive Norwell, MA 02061-9149				
D.	Years Experience – With This Firm:	14	With Other Firms:	0	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> Whitman-Hanson Regional High School (2004) Independent Study Courses: FEMA Emergency Management Institute (47 Courses completed) 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> Central Data Entry Clerk / CHES Central Data Entry Supervisor / CHES EOC Operator / CHES EOC Lead Operator / CHES EOC Manager / CHES 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> Pipeline Failure, Kalamazoo River, MI (2010) Deepwater Horizon, Gulf of Mexico (2010) 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> OSHA 40-Hour HAZWOPER Training / CHES Certified CPR & Basic First Aid / CHES DOT Training / CHES RCRA Training / CHES IS-700: National Incident Management System 				



A.	Name, Title & Local Company Address:				
	Nicholas Savignano Manager Branch Operations 42 Longwater Drive Norwell, Massachusetts 02061				
B.	Project Assignment				
	Project Support				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	4	With Other Firms:	1	
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Massachusetts Maritime Academy, Bachelor of Science: Marine Safety and Environmental Protection, 2015-2019 				
F.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> • Pricing and Ordering Systems Manager – Clean Harbors • Regional Administration Manager – Clean Harbors • Field Technician – Moran Environmental 				
G.	Major Project Experience:				
	<ul style="list-style-type: none"> • HydrochemPSC Acquisition: 2022 • TPC Chemical Explosion: 2020 • NWR Turnaround: 2019 				
H.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • OSHA HAZWOPER 40 Hour and 10 Hour / CHES Corporate • Incident Command System 100 & 200 / Weber Readiness • 16 Hour Shipyard Competent Person / Marine Chemist Service Inc. • DOT & RCRA Training / CHES Corporate • OSHA 2-hr Asbestos Awareness Training / Massachusetts Maritime Academy • OSHA 3-hr Bloodborne Pathogen Training / Massachusetts Maritime Academy 				



A.	Name, Title & Local Company Address:				
	Brenna Gacnik Administration 42 Longwater Drive Norwell, Massachusetts 02061				
B.	Project Assignment				
	Project Administration				
C.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
D.	Years Experience – With This Firm:	12	With Other Firms:	5	
E.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<ul style="list-style-type: none"> Manager, Deployment, Contracts & Cost Administration - HydroChemPSC Specialist, Systems Management – PSC Industrial Outsourcing Manager, ISO Compliance and Sponsorship Program – Pueblo Bank and Trust 				
F.	Major Project Experience:				
	<ul style="list-style-type: none"> Oversight of Administrative Functions for Corporate Utilities Accounts Exceeding \$130M Annually Acquisition Transition Project Management – Clean Harbors Purchase of HydroChemPSC Acquisition Transition Project Management – PSC Industrial Outsourcing Purchase of HydroChem 				
G.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> OSHA HAZWOPER 40 Hour / CHES Corporate 				



a.	Name, Title & Local Company Address:				
	<p>Shaun Street Technical Services District Manager Clean Harbors Canada, Inc. 9808 12 Ave, SW Edmonton, AB T6X 0J5</p>				
b.	Corporate Address:				
	<p>Clean Harbors Environmental Services, Inc 42 Longwater Drive Norwell, Massachusetts, 02061</p>				
c.	Years Experience – With This Firm:	14	With Other Firms:	13	
d.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • National Construction Safety Officer, ACSA 2015 				
e.	Other Experience and Qualifications:				
	<p>As a Technical Services District Manager for Clean Harbors in Alberta and British Columbia, Mr. Street is responsible for the day to day management of the Technical Services operations. This includes ensuring delivery of safe, efficient, high quality customer service to Clean Harbors’ customers, in compliance with all relevant environmental, transportation and safety related regulations. Additional responsibilities include:</p> <ul style="list-style-type: none"> • Responsible for the safe and compliant identification, packaging and transport of hazardous waste from Clean Harbors’ customer sites • Responsible for Health and Safety of all service employees including training and development • Manage customer service and technical staff for Western Canada • Manage the overall operation of all client waste programs • Revenue and cost management • Maintain a safe, reliable fleet of operating equipment • Identify and monitor continuous improvement opportunities 				
f.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • Modern Safety Management / DNV • Harvard Manage Mentor, Harvard Business Publishing • 40-Hour HAZWOPER / HSE Department • NFPA 472 Hazmat Technician / HSE Department • Essentials of Supervision, Clean Harbors • OH&S Due Diligence for Managers • Core safety training (CSTS, First Aid, H2S, WHMIS, TDG, Hydrate Awareness) 				



a.	Name, Title & Local Company Address:			
	Tyler Esak Branch Manager, Technical Services 50114 RR 173 Ryley, AB			
b.	Project Assignment			
	Branch Manager, Technical Services			
c.	Corporate Address:			
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061			
d.	Years Experience – With This Firm:	15	With Other Firms:	
e.	Education: Degree(s) / Year / Specialization & Licenses / Registrations			
	<ul style="list-style-type: none"> • Class 1 Drivers License – 21 years experience 			
f.	Other Experience and Qualifications Relevant to the Proposed Project:			
	<ul style="list-style-type: none"> • Driller, Mobile Augers • Dispatcher, Clean Harbors • Branch Manager, Clean Harbors 			
g.	Major Project Experience:			
	<ul style="list-style-type: none"> • Suncor Voyager • Plains Midstream Spill • LongLake Nexen Project 			
h.	Environmental & Health and Safety Training:			
	<ul style="list-style-type: none"> • Clean harbors Leadership Development Program • Fatigue Management / CHES • WHIMIS / CHES • CSTS / CHES • TDG / CHES • Leadership in Safety Excellence Certificate • H2S Alive Certificate • First Aid Certificate • Ground Disturbance Global II Certificate • Construction Training System Certificate • 			



a.	Name, Title & Local Company Address:				
	Micheal Fisher Technical Services Branch Manager Clean Harbors Canada, INC. Reed Deer, Alberta				
b.	Project Assignment				
c.	Corporate Address:				
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061				
d.	Years Experience – With This Firm:	4	With Other Firms:	16	
e.	Education: Degree(s) / Year / Specialization & Licenses / Registrations				
	<ul style="list-style-type: none"> • Power Engineer NAIT, Degree in Computer Programming & System Analysis 				
f.	Other Experience and Qualifications Relevant to the Proposed Project:				
	<p>Mr. Fisher is the Technical Services Branch Manager for Red Deer. He reports directly to the Regional Technical Services District Manager and has direct responsibility for the operational execution of Transportation & Disposal and CleanPack service lines including oversight and management of all truck-to-truck transfer operations within the region. Specific duties include:</p> <ul style="list-style-type: none"> • Responsible for the daily management and supervision of CleanPack, Logistics, and Technical Service Coordinators. • Ensures that coordinators manage labor and equipment resources to cover all customer needs and maximize utilization objectives. Manages according to rules/regulations on labor relations, WCB, TDGA and workers compensation. • Ensures that Logistics Coordinators are working closely with RSOM regarding effective load planning and waste routing. • Ensures that Coordinators effectively utilize the business systems that are provided to them to support their operations. • Assists Technical Service District Manager in ensuring that billing goals are being met. Works with central billing department to identify and resolve bottlenecks in the billing process. • May meet with customers as needed to resolve customer issues/complaints. Maintains satisfactory customer relationships. • Ensures that Coordinators manage the appearance and maintenance of all assigned equipment. Communicates asset needs to Technical Service General Manager. • Actively participates in morning operations meetings and sales/operations meetings. • Responsible for job level profitability on all T&D and CleanPack jobs within region. 				
g.	Major Project Experience:				
	<ul style="list-style-type: none"> • 				
h.	Environmental & Health and Safety Training:				
	<ul style="list-style-type: none"> • Transportation of Dangerous Goods • Hazardous Material Transportation Skills Training 				

- WHMIS & GHS
- Industrial First Aid/CPR
- Hazwoper 40-hr Training
- Controlled Substances Training
- Accident Investigation
- SEFSAM, DNV certified, Modern Safety Management
- Bloodborne Pathogens
- Authorized Entrant – Confined Space
- Confined Space Entry Annual Rescue
- Confined Space Entry – Supervisory Level
- High Angle Rescue
- Injure Management
- Advance Crisis Management
- Incident Command Certified from Justice Institute of British Columbia



A.	Name, Title & Local Company Address:			
	Brian Pott Director of Field Services 42 Longwater Drive Norwell, MA 02061			
B.	Project Assignment			
	Director of Field Services Administration			
C.	Corporate Address:			
	Clean Harbors Environmental Services 42 Longwater Drive Norwell, Massachusetts 02061			
D.	Years Experience – With This Firm:	19	With Other Firms:	0
E.	Education: Degree(s) / Year / Specialization & Licenses / Registrations			
	<ul style="list-style-type: none"> • B.S., Industrial and Systems Engineering, Business Minor, Virginia Polytechnic Institute and State University (Virginia Tech), 2004 • ICS-100, ICS-200, ICS-700, ICS-800 Certified, December, 2006 • Certified Crisis Management Plan Writing, May, 2007 			
F.	Other Experience and Qualifications Relevant to the Proposed Project:			
	<ul style="list-style-type: none"> • Director of Field Services <ul style="list-style-type: none"> ○ Oversaw the administration responsibilities in all Field Services offices to remove admin burden from operations personnel • Director of Pricing Management and Analysis, Clean Harbors Env Services, Norwell, MA <ul style="list-style-type: none"> ○ Oversaw all Field Services and Industrial Services pricing for new business ○ Developed dynamic reports for field management to use for pricing analysis ○ Helped several system tools to capture customer and industry specific requirements • Field Project Manager, Clean Harbors Env Services, Kingston, MA <ul style="list-style-type: none"> ○ Managed administration and finance reports for large-scale emergency response projects ○ Developed several customized tools and spreadsheets for daily resource management and reporting • Field Inspector, Clean Harbors Env Services, Norwell, MA • Environmental Technician, Clean Harbors Env Services, South Portland, ME 			
G.	Major Project Experience:			
	<ul style="list-style-type: none"> • Mercury Spill in Residential Area, Pawtucket, RI – 2004 • M/V Athos I, Delaware River, NJ/PA – 2004-2005 • Pipeline Release, Carrolton, KY – 2005 • Hazardous Waste Landfill Capping, Denver, CO – 2005 • Creek Excavation from Benzene Release a Railcar, Huntington, WV – 2005 • Hurricane Katrina, Gulf Coast States – 2005-2006 • Hurricane Rita, Gulf Coast States – 2005-2006 • Refinery Release, Lake Charles, LA – 2007 			



- Wildfire Cleanup, San Diego, CA – 2007
- M/V Cosco Busan, San Francisco Bay, CA – 2007-2008
- M/V Mel Oliver / DM932, Mississippi River, New Orleans, LA – 2008
- Deepwater Horizon, Gulf Coast States – 2010
- Pipeline Release, Kalamazoo, MI – 2010
- Hurricane Sandy, NY Metro Area – 2012
- Refinery Release as a Result of Hurricane Sandy, NY Metro Area – 2012
- Avian Flu Cleanup, IA - 2015
- Hurricane Harvey, Houston, TX – 2017
- Sunken Vessel Salvage/Recovery as a result of Hurricane Maria, Puerto Rico – 2017