



# Investor Presentation – March 2019



# Safe Harbor

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Certain statements contained within this presentation may be deemed “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the “Private Securities Litigation Reform Act of 1995”). All statements in this presentation other than a statement of historical fact are forward-looking statements that are subject to known and unknown risks, uncertainties and other factors which could cause actual results and performance of the Company to differ materially from such statements. The words “believe,” “expect,” “anticipate,” “intend,” “will,” and similar expressions identify forward-looking statements. Forward-looking statements contained herein relate to, among other things: the Company’s ability to develop or adopt new and existing technologies; anticipated financial performance; growth through acquisition; leader in the mixed waste industry; positioned to benefit from mixed waste market opportunities; geographic strongholds; and all other statements which are not statements of historical fact.

While the Company believes the expectations reflected in such forward-looking statements are reasonable, it can give no assurance such expectations will prove to have been correct. There are a variety of factors which could cause future outcomes to differ materially from those described in this report, including, but not limited to: general economic conditions; increased competitive pressures; the ability to maintain and obtain required permits and approvals to conduct operations; the ability to develop new and existing technologies in the conduct of operations; changes in federal, state and local laws and regulations, especially environmental regulations, or in interpretation of such; and the commercial viability of our on-site treatment process.

The Company believes the presentation of EBITDA and Adjusted EBITDA is relevant and useful by enhancing the readers’ ability to understand the Company’s operating performance. The Company’s management utilizes EBITDA and Adjusted EBITDA as means to measure performance. The Company’s measurements of EBITDA and Adjusted EBITDA may not be comparable to similar titled measures reported by other companies.

The Company makes no commitment to disclose any revisions to forward looking statements, or any facts, events or circumstances after the date hereof that bear upon forward looking statements.

# Company Overview

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Perma-Fix is focused on two primary markets with unique capabilities in each of these segments:



## *Treatment*

Permitted, licensed, and operating facilities treating a magnitude of contaminated wastes for economic and compliant disposal.



## *Services*

Teams of professionals with innovative technologies and trained workforce to provide radiological protection and environmental remediation services.

# Sr. Management Team

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**Mark Duff, President & Chief Executive Officer**, 34 years of experience in the DOE & DOD environmental and construction markets. Prior to joining Perma-Fix in 2016, Mr. Duff had been responsible for the successful completion of over 70 performance-based projects at the Paducah Gaseous Diffusion Plant (PGDP), KY overseeing a five-year project with a total value of \$458 million. Prior to the PGDP project, Mark was a senior manager supporting Babcock and Wilcox (B&W).



**Dr. Louis Centofanti, Executive Vice President of Strategic Initiatives**, founded Perma-Fix in 1991. Founded PPM, Inc., a hazardous waste management company. PPM's revenues grew to \$15 million at which time it was sold to USPCI. Under Dr. Centofanti's leadership (Senior Vice President), USPCI was sold for \$600 million (2 years after purchase of PPM). Served as senior official to the U.S. Department of Energy under the Carter Administration.

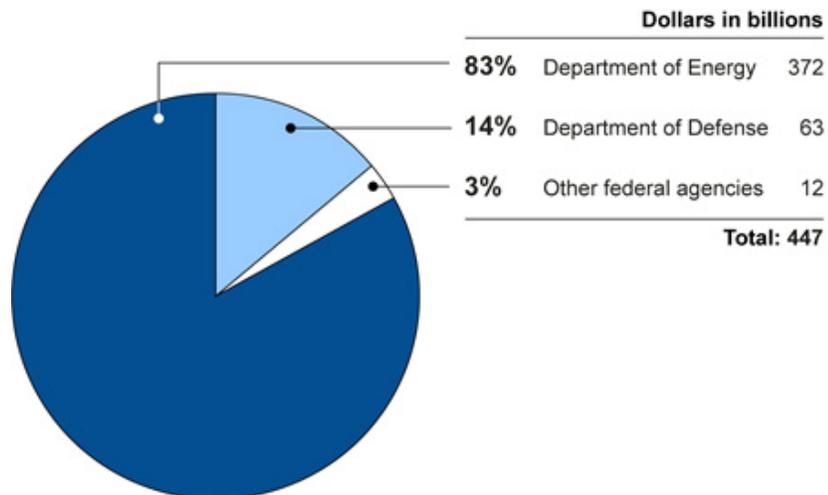


**Ben Naccarato, Chief Financial Officer**, joined Perma-Fix in 2004. He brings over 30 years experience in senior financial positions in the waste management and used oil industries. Previous positions include Chief Financial Officer for a privately held fuel distribution and used waste oil company, and Director of Financial Planning and Analysis with Safety-Kleen Corp.

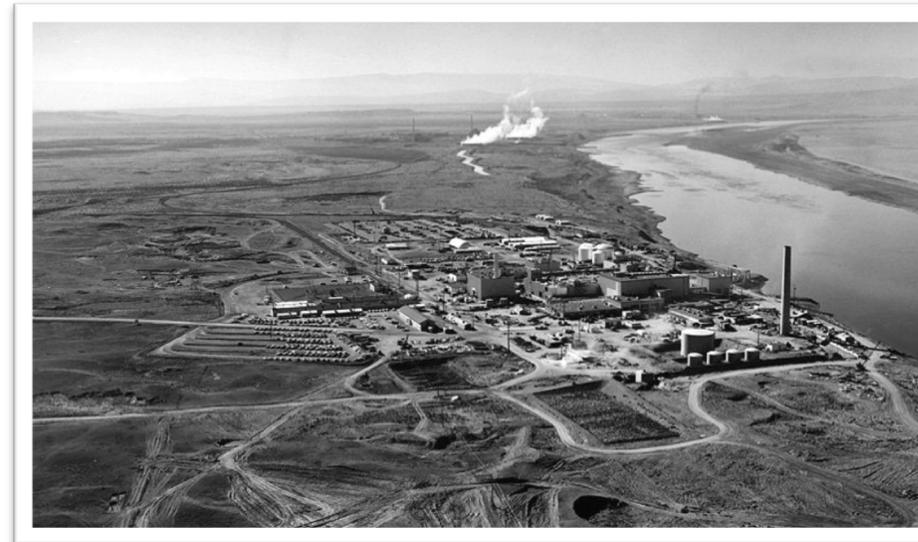
# Market Overview



*“DOE was responsible for over 80 percent (\$372 billion) of the U.S. government's fiscal year 2016 reported environmental liability, mostly related to nuclear waste cleanup. DOE's total reported environmental liability has generally increased since fiscal year 2000. According to audit documentation related to DOE's fiscal year 2016 financial statements, 50 percent of the DOE's environmental liability resides at two cleanup sites: the Hanford Site in Washington State and the Savannah River Site in South Carolina.” - GAO*



Source: GAO analysis of the Financial Report of the U.S. Government, fiscal year 2016. | GAO-17-317



Today, under the direction of the U.S. DOE, Hanford is engaged in the world's largest environmental cleanup project; Expected to continue until 2030 and cost over **\$100 billion.**

# Market Overview



## *Department of Energy*

- **Environmental Management (EM)** - Over 100 active sites in the US with area equal to Rhode Island and Delaware combined; approximately 88 million gallons of liquid waste stored in underground tanks; about 400 million hazardous waste shipments annually, about 3M are radiological.
- **National Nuclear Security Administration (NNSA)** - Maintains the facilities to ensure the safe, secure, and effective nuclear deterrent requiring cleanup of legacy wastes and continuous generation of newly generated wastes for disposition.

## *Department of Defense*

- **Navy** - Nuclear propulsion and NAVFAC (nearly \$2B 2017-2019) missions result in radiological and hazardous wastes which require treatment and disposal.
- **United States Army Corps of Engineers (USACE)** – Over \$1B in remediation contracts to be procured 2017-2018.

## *Commercial*

- **Power** – Nearly 100 reactors currently operating in the US; over 400 world-wide.
- **Mining** – Continued issues at mining sites with tailings that include high levels of naturally occurring radioactive materials (NORM).
- **Oil and Gas** – Drilling practices also realizing high levels of NORM.

## *International*

- **Canada / Europe / Mexico / Italy** – Beginning to fund and remove legacy wastes and contamination for nuclear operations.

# Background

- **Perma-Fix is a leading provider of nuclear waste treatment services**
  - Founded in 1991, has emerged as a national leader in the treatment of waste that is both radioactive and/or chemically hazardous
  - Established laboratories and R&D capabilities to solve problems quickly and efficiently
  - Focus on addressing problematic waste streams with no existing pathway for disposition
  - Long-standing relationships with government agencies including DOE, NRC, and NNSA
- **Nuclear services group provides onsite personnel and technologies for environmental protection and cleanup programs**
  - Industry leader in radiological protection services to government and commercial clients
  - Demolition, environmental restoration and waste management services for complex cleanup projects including radiological and hazardous components
  - Maintains instrument calibration laboratory with over 6,000 instruments to support nuclear industry



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# Waste Treatment Facilities

- **Three fixed-based facilities with active permits and licenses to treat most waste streams in the industry**
  - Broad existing permits allow treatment and management of wastes for final disposition
  - Trained and experienced workforce with avg. tenure 13+ years at Perma-Fix and strong safety record
  - Perma-Fix owns all the facilities with substantial capital invested through the life of the plants



**Perma-Fix Northwest - Richland, WA**  
*Radiological, transuranic, and large components*



**DSSI - Kingston, TN**  
*Radiological, liquids, and PCBs*



**Perma-Fix Florida - Gainesville, FL**  
*Industrial, Radiological, and R&D*

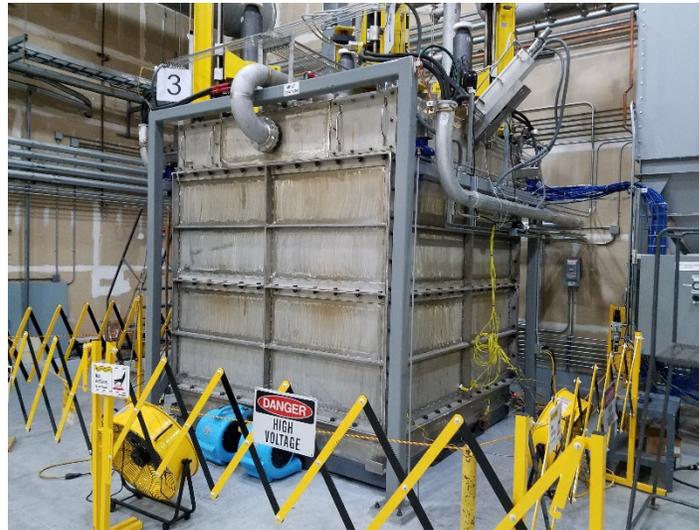
# Expanding Treatment Capabilities

- **Hanford Tank Waste Treatment**

- Process developed to reduce complexity and costs for waste processing based on proven chemical principles
- In Dec. 2017, treated three gallons of low activity waste from the Hanford Tanks to demonstrate treatment performance for direct disposal in Texas landfill
- Currently supporting Phase II of this demonstration to address extraction, transport and treatment of 2,000 gallons by summer of 2019 with next phases to address production level quantities over 100,000 gallons

- **Partnership with Veolia Nuclear Solutions**

- Veolia is providing its patented GeoMelt® system, cooperatively installed and operated by Perma-Fix at its PFNW facility. .



- **Water Treatment Technologies**

- New treatment technology for radioactive water
- Construction underway, expected to be operational in the first quarter of '19

- **Expansion of DSSI Facility to accommodate new technology and higher production**

- Three new facilities under construction in Oak Ridge to expand Hg, Na and other reactive waste processing
- Upgrades to support local Oak Ridge, TN cleanup missions over next 10 years

# Massive Barriers to Entry

- **Highly regulated at State and Federal levels**

- Nuclear Regulatory Commission through state regulators
- Environmental Protection Agency through state regulators
- State regulators for other air and water permits

- **Technology**

- Patented (40+) and proprietary chemical treatment process
- Treatment of nuclear waste is complex and requires multiple technologies and multiple steps

- **Experience**

- Unparalleled experience and track record of facilities successfully treating nuclear waste 30+ years
- Completed over \$2 billion in demolition and remediation projects involving radiological materials



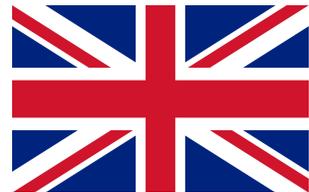
# Nuclear Services

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- Nuclear services group provides personnel and capabilities on client's sites for a variety of industrial and government clients
  - Expanded services offering critical to growth goals through teaming initiatives on large DOE, DoD and Canada contracts
  - Our capabilities are underpinned by our waste treatment plants to provide commercialization of waste management program for our clients
  - Several recent DOE and US Army Corp. projects awarded in past 6 months
- Capabilities include health physics, deactivation/demolition and remediation of nuclear materials for the DOE, DOD, federal agencies and commercial customers



US Army Corps  
of Engineers®



# Growth Strategy

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## New growth strategy to expand market base in both Treatment & Services Segments:

- ✓ **Expansion of waste treatment capabilities and increasing efficiency of existing facilities**
  - Increasing international focus to treat wastes that do not have a disposition path through our existing facilities
  - Partnering with larger firms to provide “commercialization” approach to major DOE procurements
  - Closure of M&EC facility to be completed in 2019 to consolidate technologies, staff & capabilities reducing costs over \$5M/yr.
- ✓ **Revised business development program to broaden market potential of Nuclear Services**
  - Revising offering to integrate both sectors to join teams for procurement of DOE Operating contracts at Hanford (3) and Oak Ridge over next 12 months (total values over \$15B)
  - Expanding services offering to US Army Corp of Engineers to address missions for removal of old contaminated facilities
  - Expansion of oil and gas market with new analytical facility in West Virginia, certified to provide expedited analysis of fracking wastes to support immediate disposal
- ✓ **Broadening market potential through client expansion**
  - Marketing focus on power, municipal and oil/gas industries averaging over 10 new clients year to date
  - Several new wins in Canada supporting large scale cleanup efforts as they initiate cleanup missions at Chalk River and Port Hope, ON

# Third Quarter 2018: Financial Highlights

- Revenue for Q3 2018 increased to \$12.0M versus \$11.8M for same period last year
- Gross profit included \$1.1 million and \$550,000 of closure costs related to the M&EC facility for 2018 and 2017, respectively; and excluding these costs, gross profit would have increased to \$2.9 million versus \$2.3 million for the third quarter of 2017
- Achieved third consecutive quarter of positive net income
- Backlog increased by \$2.0 million to \$9.4 million as of September 30, 2018, versus \$7.4 million as of June 30, 2018

(In thousands)	Three Months Ended September 30,	
	2018	2017
Income (loss) from continuing operations	\$ 317	\$ (1,977 )
Adjustments:		
Depreciation & amortization	364	1,107
Interest income	(82 )	(34 )
Interest expense	62	59
Interest expense - financing fees	10	9
Income tax (benefit) expense	(1,342 )	71
EBITDA	(671 )	(765 )
Research and development costs related to Medical Isotope project	88	197
Closure costs accrued for M&EC subsidiary	1,093	550
Impairment loss on tangible assets	—	672
Net gain on exchange offer of Series B Preferred Stock of M&EC	—	—
Adjusted EBITDA	\$ 510	\$ 654

# Year-End 2017: Financial Highlights

- **Revenue for the Treatment Segment increased 17% to \$37.8M from \$32.3M for the same period in 2016**
- **Gross profit increased 22% to \$8.6M versus \$7.1M for the same period last year**
  - Gross margin increased to 17.3% from 13.8% for the same period last year
- **Achieved \$2.4 million of adjusted EBITDA**
  - \$1.8 million improvement from same period last year

(In thousands)	Twelve Months Ended December 31, (Unaudited)	
	2017	2016
Loss from continuing operations	\$ (3,538)	\$ (13,263)
Adjustments:		
Depreciation & amortization	3,803	4,165
Interest income	(140)	(110)
Interest expense	315	489
Interest expense - financing fees	35	108
Income tax (benefit) expense	(1,285)	(2,994)
EBITDA	(810)	(11,605)
Research and development costs related to medical Isotope project	1,141	1,489
Impairment loss on tangible assets	672	1,816
Impairment loss on intangible assets	—	8,288
Closure costs accrued for M&EC subsidiary	1,400	—
Write-off of prepaid fees resulting from impairment loss on tangible asset	—	587
Adjusted EBITDA	\$ 2,403	\$ 575

# Investment Summary

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- ✓ **Positioned to be the leader in the multi-billion dollar nuclear services & waste treatment market**
  - Aggressive bidding on new service contracts; provides stable and predictable cash flow
  - Expansion into new waste streams that eclipse current markets; incremental revenue generates very high gross and operating margins
- ✓ **Nearly insurmountable barriers to entry**
- ✓ **Turnaround and return to profitability**
  - Forecasting strong year-over-year growth in revenue and EBITDA for 2019
  - On track to complete the closure of M&EC facility in 2019, at which point the Company will achieve the remainder of the fixed cost reductions as projected (\$4-5 million in total)
- ✓ **Significant and undervalued asset base**
  - 3 unique and irreplaceable facilities
  - \$15.8 million of cash securing regulatory closure requirement

# Key Statistics

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NASDAQ:	PESI
Current Price: (3/21/2019):	\$3.55
Shares Outstanding (11/3/18):	11.9 M
Market Cap:	\$42.2 M
Fiscal Year End:	December 31
Inside Ownership:	7.1%