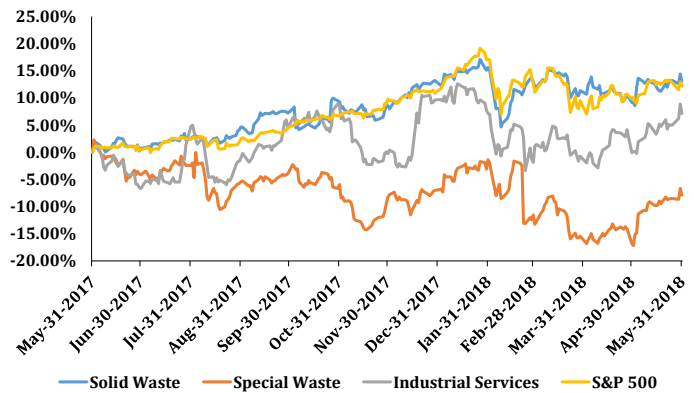
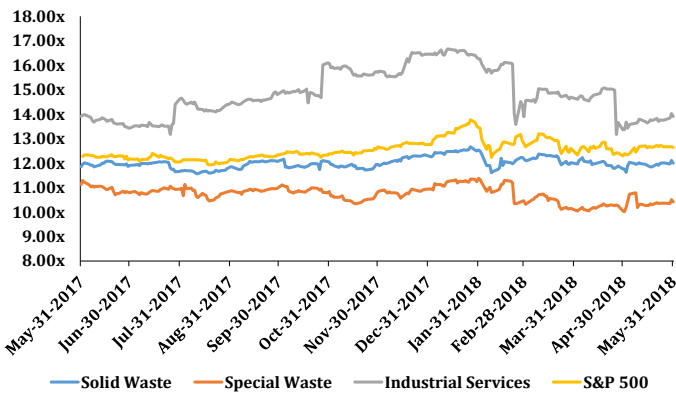


# Trash Talk

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Environmental Services LTM TEV/EBITDA

Environmental Services LTM Share Price (Shown as % change)



Indices Performance (% change)

	<u>May 2018</u>	<u>LTM</u>		<u>May 2018</u>	<u>LTM</u>
S&P 500	1.9%	12.2%	Solid Waste	3.6%	13.1%
Dow Jones	1.3%	16.2%	Special Waste	10.6%	(7.9%)
NASDAQ	4.4%	20.1%	Industrial Services	7.1%	7.1%

(Source: CapitalIQ)

Largest Environmental Services Movers and Losers (largest % changes in the month of May)

CECO Environmental Corp.	21.5%	Attis Industries, Inc.	(13.7%)
Clean Harbors, Inc.	15.7%	Fuel Tech, Inc.	(10.2%)
US Ecology, Inc.	13.7%	Sharps Compliance Corp.	(6.9%)
Perma-Fix Environmental Services, Inc.	10.1%	Industrial Services of America, Inc.	(4.5%)
Darling Ingredients Inc.	9.6%	Heritage-Crystal Clean, Inc.	(4.0%)

## Environmental Services Industry Contacts

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## Select Public Trading Statistics (as of 5/31/2018)

### Solid Waste:

(\$ in millions, except per share data)

Company	Share Price 05/31/2018	% of 52 Wk High	Market Capitalization	Enterprise Value	Valuation Multiples			PE Multiples			LTM Operating Margins			Net Debt/EBITDA	
					TEV/Total Revenue	TEV/EBITDA	TEV/EBIT	LTM P/E	CY18 P/E	CY19 P/E	Gross	EBIT	EBITDA		
Waste Management, Inc.	WM	\$82.71	92.2%	\$35,762	\$45,688	3.1x	11.4x	17.4x	17.8x	23.0x	21.1x	37.9%	18.3%	27.9%	2.4x
Republic Services, Inc.	BSG	\$67.43	97.2%	\$22,112	\$30,259	3.0x	10.9x	18.3x	17.1x	22.9x	20.9x	38.5%	16.7%	27.9%	2.9x
Waste Connections, Inc.	WCN	\$76.88	99.0%	\$20,256	\$23,936	5.1x	16.3x	28.8x	29.7x	32.0x	28.8x	41.8%	17.8%	31.5%	2.5x
Advanced Disposal Services, Inc.	ADSW	\$23.38	90.9%	\$2,070	\$3,986	2.6x	9.9x	35.2x	44.3x	45.7x	38.7x	36.4%	7.3%	26.2%	4.8x
Casella Waste Systems, Inc.	CWST	\$23.58	85.7%	\$1,007	\$1,504	2.5x	13.1x	29.6x	NM	40.4x	32.4x	32.0%	8.3%	18.8%	4.3x
Attis Industries, Inc.	ATIS	\$0.52	14.3%	\$9	\$29	17.2x	NM	NM	NM	NM	NM	7.8%	NM	NM	(0.8x)
Mean				\$13,536	\$17,567	5.6x	12.3x	25.9x	27.2x	32.8x	28.4x	32.4%	13.7%	26.5%	2.7x
Median				\$11,163	\$13,961	3.1x	11.4x	28.8x	23.7x	32.0x	28.8x	37.2%	16.7%	27.9%	2.7x
High				\$35,762	\$45,688	17.2x	16.3x	35.2x	44.3x	45.7x	38.7x	41.8%	18.3%	31.5%	4.8x
Low				\$9	\$29	2.5x	9.9x	17.4x	17.1x	22.9x	20.9x	7.8%	7.3%	18.8%	-0.8x

Source: Capital IQ

Total Enterprise Value (TEV) = Market Capitalization + Preferred Equity + Debt + Minority Interest - Cash

LTM = Last Twelve Months

### Special Waste:

(\$ in millions, except per share data)

Company	Share Price 05/31/2018	% of 52 Wk High	Market Capitalization	Enterprise Value	Valuation Multiples			PE Multiples			LTM Operating Margins			Net Debt/EBITDA	
					TEV/Total Revenue	TEV/EBITDA	TEV/EBIT	LTM P/E	CY18 P/E	CY19 P/E	Gross	EBIT	EBITDA		
Stericycle, Inc.	SREL	\$63.50	75.1%	\$5,434	\$8,118	2.3x	11.4x	17.8x	NM	17.2x	16.6x	40.6%	12.8%	19.9%	3.8x
Darling Ingredients Inc.	DAR	\$18.79	96.4%	\$3,094	\$4,826	1.3x	8.5x	18.5x	14.3x	19.2x	24.5x	21.7%	3.7%	12.2%	3.7x
Clean Harbors, Inc.	CLH	\$53.00	88.5%	\$2,978	\$4,383	1.5x	10.2x	31.6x	27.6x	NM	NM	29.7%	4.6%	14.3%	3.3x
US Ecology, Inc.	ECOL	\$60.60	98.3%	\$1,329	\$1,561	3.0x	14.1x	22.3x	25.0x	27.0x	24.0x	30.5%	13.6%	21.6%	2.1x
Sharps Compliance Corp.	SMED	\$3.71	64.7%	\$60	\$56	1.4x	NM	NM	NM	NM	NM	29.8%	0.2%	4.1%	(2.0x)
Perma-Fix Environmental Services, Inc.	PEFI	\$4.90	95.1%	\$58	\$58	1.2x	47.5x	NM	NM	NM	NM	21.4%	(3.7%)	2.5%	0.5x
Mean				\$2,159	\$3,167	1.8x	18.3x	22.5x	22.3x	21.1x	21.7x	28.9%	5.2%	12.4%	1.9x
Median				\$2,153	\$2,972	1.4x	11.4x	20.4x	25.0x	19.2x	24.0x	29.7%	4.2%	13.2%	2.7x
High				\$5,434	\$8,118	3.0x	47.5x	31.6x	27.6x	27.0x	24.5x	40.6%	13.6%	21.6%	3.8x
Low				\$58	\$56	1.2x	8.5x	17.8x	14.3x	17.2x	16.6x	21.4%	-3.7%	2.5%	(2.0x)

Source: Capital IQ

Total Enterprise Value (TEV) = Market Capitalization + Preferred Equity + Debt + Minority Interest - Cash

LTM = Last Twelve Months

### Industrial Services:

(\$ in millions, except per share data)

Company	Share Price 05/31/2018	% of 52 Wk High	Market Capitalization	Enterprise Value	Valuation Multiples			PE Multiples			LTM Operating Margins			Net Debt/EBITDA	
					TEV/Total Revenue	TEV/EBITDA	TEV/EBIT	LTM P/E	CY18 P/E	CY19 P/E	Gross	EBIT	EBITDA		
Covanta Holding Corporation	CVA	\$16.30	94.2%	\$2,113	\$4,516	2.5x	14.4x	46.6x	6.9x	NM	NM	30.1%	5.3%	17.3%	7.7x
Heritage-Crystal Clean, Inc.	HCCI	\$20.30	80.6%	\$467	\$459	1.2x	11.9x	21.8x	20.1x	33.2x	22.0x	23.2%	5.7%	10.4%	(0.2x)
CECO Environmental Corp.	CECE	\$5.71	53.4%	\$198	\$255	0.8x	11.3x	35.9x	73.2x	25.5x	15.9x	32.9%	2.2%	6.9%	2.5x
Cypress Energy Partners, L.P.	CELP	\$6.90	83.1%	\$82	\$167	0.6x	10.9x	17.1x	12.2x	13.7x	NM	12.4%	3.4%	5.3%	7.0x
Ecology & Environment, Inc.	EEI	\$13.00	90.0%	\$56	\$39	0.4x	6.4x	7.7x	25.3x	NM	NM	44.7%	4.1%	5.1%	(3.0x)
Quest Resource Holding Corporation	QRHC	\$1.96	67.4%	\$30	\$34	0.3x	NM	NM	NM	NM	NM	12.5%	(4.1%)	(0.7%)	(4.8x)
Fuel Tech, Inc.	FTEK	\$1.15	62.8%	\$28	\$22	0.4x	NM	NM	NM	NM	NM	39.1%	(5.0%)	(2.3%)	5.0x
Industrial Services of America, Inc.	ISDA	\$2.13	78.9%	\$17	\$25	0.4x	11.0x	216.1x	NM	NM	NM	6.2%	0.2%	4.0%	3.4x
Mean				\$374	\$690	0.8x	11.0x	57.5x	27.5x	24.1x	18.9x	25.1%	1.5%	5.8%	2.2x
Median				\$69	\$103	0.5x	11.2x	28.9x	20.1x	25.5x	18.9x	26.7%	2.8%	5.2%	3.0x
High				\$2,113	\$4,516	2.5x	14.4x	216.1x	73.2x	33.2x	22.0x	44.7%	5.7%	17.3%	7.7x
Low				\$17	\$22	0.3x	6.4x	7.7x	6.9x	13.7x	15.9x	6.2%	-5.0%	-2.3%	(4.8x)

Source: Capital IQ

Total Enterprise Value (TEV) = Market Capitalization + Preferred Equity + Debt + Minority Interest - Cash

LTM = Last Twelve Months





# Trash Talk

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## Select Mergers and Acquisitions & Capital Raising News

### ❖ AMCS Secures Investment from Insight Venture Partners, Ireland Strategic Investment Fund

May 1, 2018 – AMCS, a leading supplier of integrated software and vehicle technology for the resource management, waste collection and recycling industry, announced the completion of a significant investment from Insight Venture Partners and Ireland Strategic Investment Fund (ISIF). The investment will be used for continued product innovation in AMCS' suite of SaaS products and related technologies to further accelerate the company's growth in North America, Europe and Australasia and to expand AMCS' SaaS Platform into adjacent vertical markets. Under the terms of the funding, Euan Menzies, senior advisor at Insight Venture Partners; Henry Frankievich, vice president at Insight Venture Partners; and Robert Schnittger, investment director at ISIF, will serve on the AMCS Board as non-executive directors. The investment comes as AMCS closed out a record 2017. AMCS experienced more than 50 percent growth in the adoption of its SaaS solutions by some of the world's most successful operators in waste collection and recycling and announced the completion of its acquisition of Brady Recycling Solutions. To accommodate AMCS' rapid growth, the company will be opening a new global headquarters at City East Plaza, Limerick, Ireland, in late summer. The additional office space will support the company's continued expansion as it creates 100 new jobs in product development, sales and global customer support over the next three years.

### ❖ New Zealand Super Fund Invests \$65 Million in Rubicon Global

May 14, 2018 – The New Zealand Super Fund, a \$38 billion fund backed by the New Zealand government, has made a \$65 million investment in Atlanta-based Rubicon Global, an international cloud-based, full-service waste and recycling company focused on sustainability. The investment is part of what the company will soon authorize with the U.S. Securities and Exchange Commission as a \$140 million round of financing.

### ❖ Total to Make Equity Investment in Clean Energy Fuels

May 14, 2018 – Total SA and Clean Energy Fuels Corp. have entered into a broad strategic agreement to drive deployment of new natural gas, heavy-duty trucks. Total has agreed to purchase up to 50.8 million shares of Clean Energy's common stock for \$83.4 million, making it Clean Energy's largest stockholder with ownership of 25 percent of Clean Energy's outstanding shares of common stock. This transaction is subject to, among other things, Clean Energy obtaining the approval at its stockholders' meeting, which was originally scheduled for May 30 but has been postponed to June 8. Clean Energy, with support from Total, also plans to launch an innovative leasing program that is intended to place thousands of new natural gas, heavy-duty trucks on the road and fueling at Clean Energy stations. As presently contemplated, this program will allow fleets to begin driving heavy-duty trucks with the cleanest engine in the world at no increased cost compared to the diesel alternative, while also guaranteeing a discounted natural gas fuel price to diesel. Total intends to provide up to \$100 million of credit support for the program, which the companies expect to launch in the third quarter of 2018. Promoting the use of natural gas and increasing its share in Total's overall output are part of Total's integrated strategy to expand its low carbon businesses. Total has vast experience with natural gas, with operations on five continents, making Total one of the world's largest leaders along the natural gas value chain, including with liquefied natural gas positions in the U.S.

### ❖ Waste Industries Merges with Alpine Waste & Recycling

May 22, 2018 – Waste Industries has finalized its merger with Alpine Waste & Recycling, a non-hazardous solid waste collection and recycling company based in Denver. Alpine represents Waste Industries' first strategic move outside of its East Coast footprint since the company's founding in 1970. Alpine is a vertically integrated company that operates residential collection, commercial collection, a materials recovery facility and a landfill. Alpine will become the new Waste Industries' West Region with founder John Griffith serving as the company's west regional vice president. Alpine's focus on sustainability was a key factor for the merger. The company provides its customers with a product called the Automated Sustainability Report, which details their sustainability efforts versus their goals and compared to their peers. This tracking system synergizes with Waste Industries' community impact initiatives including conversion of its fleet to compressed natural gas (CNG) and its customer-driven corporate philanthropy campaign The Full Circle Project. Waste Industries will lend its years of experience to support and enhance the business model Alpine Waste & Recycling has created over the years.

### ❖ RiverRoad Waste Solutions Partners with Clean Robotics

May 22, 2018 – RiverRoad Waste Solutions announced that it has made a financial investment in CleanRobotics, the makers of the TrashBot. The Trashbot is a revolutionary technology that uses advanced robotics and artificial intelligence (AI) to efficiently sort commercial waste, improving recycling rates for its users. The TrashBot uses cameras and sensors to scan items as they enter a waste bin. AI is then employed to sort the items into their respective waste or recycling class. Clean Robotics boasts an astonishing 86 percent sorting accuracy rate, which is projected to further increase as the technology learns and continues to be refined. The solution is enhanced with a SaaS dashboard, which provides complete transparency into a facility's waste stream. TrashBot also helps its users avoid fines and fees due to the potential contamination that can occur with traditional, unmonitored waste bins. With an ever-evolving regulatory environment, these expenses may now be avoided with this advanced technology.



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## Select Industry News

### ❖ Former Waste Management Director, Peter Huizenga Has Died

May 8, 2018 – Peter Huizenga, former director of Waste Management, died at age 79 on May 2 of cancer. His death comes shortly after the death of his cousin Wayne Huizenga, founder of Waste Management, who died at age 80 on March 22 after succumbing to "a decades-long battle with cancer." Growing up, Peter worked on a garbage truck and attended Hope College in Michigan and the University of Illinois Law school. He practiced law for a while before joining the family business, Waste Management. At Waste Management, he served as a director for 30 years, held various officer roles and helped the company go public in 1972. In addition to helping grow Waste Management, Peter was an early investor in Blockbuster Video and other businesses. He was also active with Big Shoulders Fund, Timothy Christian Schools, Christ Church of Oak Brook, Trinity Christian College, Elim Christian Services, Hope College, Boy Scouts of America and other organizations.

### ❖ Aripack Announces Partnership with NEO Plastics

May 10, 2018 – Packaging supplier Aripack has announced a partnership with NEO Plastics, an innovative plastics company offering a new tool toward a zero waste sustainability strategy. Plastics have been accumulating in landfills for decades at alarming rates, and NEO believes it can offer a solution where the problem exists. NEO Plastics are designed to convert waste to useful biogas and, ultimately, sustainable clean energy.

### ❖ L'Occitane en Provence Teams with TerraCycle to Reduce Beauty and Skin Care Packaging Waste

May 14, 2018 – L'Occitane en Provence, a beauty company with high-quality skincare, body care and fragrance, is now giving consumers a free way to recycle all brands of beauty and skin care packaging. Through the L'Occitane Recycling Program, in partnership with TerraCycle, consumers can now drop off all brands of empty personal care and cosmetics packaging at participating L'Occitane full-price retail locations across the U.S. to divert these items from landfills and receive a 10 percent discount toward one full-size product purchased that same day.

### ❖ Waste Connections Makes Leadership Changes

May 15, 2018 – Waste Connections, Inc. announced that Worthing Jackman, executive vice president and CFO, will succeed Steve Bouck as president, effective July 1. While Bouck transitions into retirement, he will provide ongoing strategic advice and focus on certain growth and technology initiatives. Waste Connections also announced that Mary Anne Whitney, senior vice president of finance, will succeed Jackman as CFO, effective July 1.

### ❖ Landfill Energy Expert David Unger Joins Fortistar

May 16, 2018 – Fortistar, LLC, a sustainability-focused private company helping to facilitate the transition to a zero-carbon economy, has hired David Unger as the senior vice president responsible for developing renewable natural gas (RNG) business projects. Unger is joining Fortistar from Waste Management, where he served as director of renewable energy. During WasteExpo 2018 in Las Vegas, Fortistar announced that the firm has started to develop a portfolio of new RNG projects. RNG is carbon neutral and chemically identical to geological natural gas, allowing it to be used as a transportation fuel in natural gas vehicles and trucks.

### ❖ Loop Industries Names Nelson Switzer as Chief Growth Officer

May 16, 2018 – Loop Industries, Inc. has named Nelson Switzer as its chief growth officer. In this role, he will lead the commercialization of Loop's sustainability technology and build the Loop brand in the marketplace. He will report to Daniel Solomita, Loop's founder and CEO. Switzer comes to Loop following a successful career with Nestlé, the world's largest consumer packaged goods company. During his time with Nestlé, Switzer was the chief sustainability officer for Nestlé Waters North America, plastic strategy leader for Nestlé in North America and sustainability leader for Nestlé in the United States. Since the introduction of Loop's revolutionary technology, Loop has been focused on optimizing the technology in order to pursue its mission to transform the global PET/polyester market by providing 100 percent sustainably produced, Loop-branded resin, which closes the loop on plastic demanded by consumers, governments and global consumer brands. In his role at Loop, Switzer will work closely with Solomita to oversee a number of strategic priorities, including strategy development, innovation and brand marketing, customer engagement and relationship management and government relations.

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