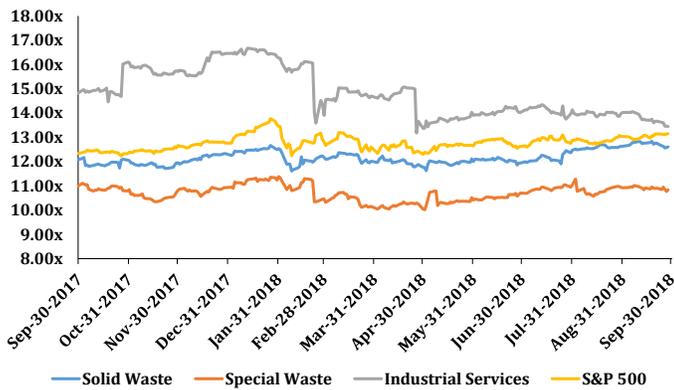


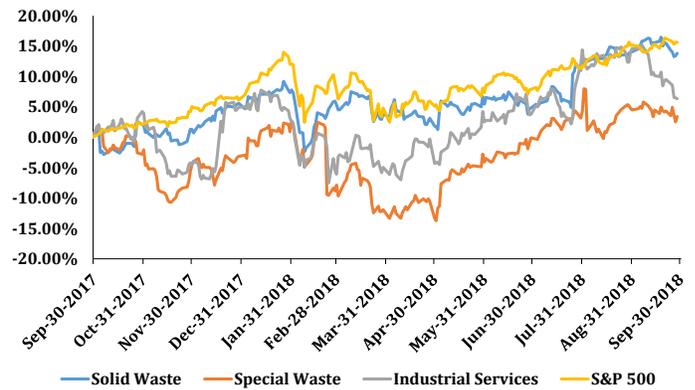
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Environmental Services LTM TEV/EBITDA



Environmental Services LTM Share Price (Shown as % change)



Indices Performance (% change)

	September 2018	LTM		September 2018	LTM
S&P 500	0.4%	15.7%	Solid Waste	(0.2%)	13.8%
Dow Jones	1.9%	18.1%	Special Waste	(1.1%)	3.4%
NASDAQ	(0.8%)	23.9%	Industrial Services	(7.2%)	6.4%

(Source: CapitalIQ)

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

Quest Resource Holding Corporation	19.1%	Attis Industries, Inc.	(14.9%)
Fuel Tech, Inc.	10.2%	Perma-Fix Environmental Services, Inc.	(11.6%)
Casella Waste Systems, Inc.	9.4%	Heritage-Crystal Clean, Inc.	(8.4%)
Clean Harbors, Inc.	4.4%	Covanta Holding Corporation	(7.9%)
Advanced Disposal Services, Inc.	1.5%	CECO Environmental Corp.	(6.6%)

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Select Public Trading Statistics (as of 9/30/2018)

Solid Waste:

(\$ in millions, except per share data)

Company	Share Price 09/30/2018	% 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	\$90.36	97.3%	\$38,739	\$48,490	3.3x	12.0x	18.5x	18.1x	23.4x	21.6x	38.0%	18.3%	28.1%	2.4x
Republic Services, Inc.	BSG	\$72.66	95.8%	\$23,658	\$31,859	3.2x	11.5x	19.4x	17.9x	24.3x	22.7x	38.2%	16.5%	27.7%	2.9x
Waste Connections, Inc.	WCN	\$79.77	98.0%	\$21,008	\$24,673	5.2x	16.5x	29.1x	30.0x	33.6x	29.9x	41.8%	17.9%	31.6%	2.4x
Advanced Disposal Services, Inc.	ADSW	\$27.08	97.0%	\$2,399	\$4,290	2.8x	10.7x	39.4x	42.6x	47.9x	41.1x	36.0%	6.9%	25.8%	4.8x
Casella Waste Systems, Inc.	CWST	\$31.06	91.5%	\$1,328	\$1,830	2.9x	15.9x	37.1x	43.9x	44.7x	36.3x	31.8%	7.9%	18.4%	4.4x
Attis Industries, Inc.	ATIS	\$0.28	7.7%	\$7	\$27	13.9x	NM	NM	NM	NM	NM	25.6%	NM	NM	(0.9x)
Mean				\$14,523	\$18,528	5.2x	13.3x	28.7x	30.5x	34.8x	30.3x	35.2%	13.5%	26.3%	2.7x
Median				\$11,704	\$14,482	3.2x	12.0x	29.1x	30.0x	33.6x	29.9x	37.0%	16.5%	27.7%	2.7x
High				\$38,739	\$48,490	13.9x	16.5x	39.4x	43.9x	47.9x	41.1x	41.8%	18.3%	31.6%	4.8x
Low				\$7	\$27	2.8x	10.7x	18.5x	17.9x	23.4x	21.6x	25.6%	6.9%	18.4%	-0.9x

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 09/30/2018	% 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.	SRCI	\$58.68	76.5%	\$5,040	\$7,661	2.2x	11.2x	18.1x	30.4x	16.5x	16.1x	40.2%	12.0%	19.3%	3.8x
Clean Harbors, Inc.	CHH	\$71.58	98.7%	\$4,015	\$5,410	1.7x	12.1x	34.5x	35.6x	NM	NM	29.8%	5.1%	14.5%	3.1x
Darling Ingredients Inc.	DAR	\$19.32	92.2%	\$3,181	\$4,847	1.3x	8.3x	18.2x	17.9x	24.0x	23.4x	21.9%	3.7%	12.5%	3.5x
US Ecology, Inc.	ECOL	\$73.75	95.6%	\$1,617	\$1,841	3.5x	16.0x	24.8x	26.4x	30.6x	26.7x	31.0%	14.2%	21.9%	1.9x
Sharps Compliance Corp.	SMED	\$3.45	67.0%	\$55	\$52	1.3x	NM	NM	NM	NM	NM	28.8%	(1.4%)	2.5%	(3.3x)
Perma-Fix Environmental Services, Inc.	PESI	\$4.20	81.6%	\$50	\$50	1.0x	25.7x	NM	NM	NM	NM	23.0%	(0.7%)	3.9%	0.6x
Mean				\$2,326	\$3,310	1.8x	14.7x	23.9x	27.6x	23.7x	22.1x	29.1%	5.5%	12.4%	1.6x
Median				\$2,399	\$3,344	1.5x	12.1x	21.5x	28.4x	24.0x	23.4x	29.3%	4.4%	13.5%	2.5x
High				\$5,040	\$7,661	3.5x	25.7x	34.5x	35.6x	30.6x	26.7x	40.2%	14.2%	21.9%	3.8x
Low				\$50	\$50	1.0x	8.3x	18.1x	17.9x	16.5x	16.1x	21.9%	-1.4%	2.5%	(3.3x)

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 09/30/2018	% 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	\$16.25	90.0%	\$2,106	\$4,533	2.5x	13.6x	39.8x	6.8x	NM	NM	30.4%	6.1%	18.1%	7.3x
Heritage-Crystal Clean, Inc.	HCCI	\$21.35	84.7%	\$492	\$480	1.3x	12.3x	21.8x	22.1x	38.5x	22.9x	22.6%	6.7%	10.8%	(0.4x)
CECO Environmental Corp.	CECE	\$7.88	83.7%	\$275	\$326	1.0x	14.7x	44.7x	NM	31.6x	19.8x	33.9%	2.3%	7.1%	2.3x
Cypress Energy Partners, L.P.	CELP	\$7.20	84.7%	\$86	\$174	0.6x	10.1x	14.8x	10.5x	21.3x	NM	13.1%	4.0%	5.9%	3.9x
Ecology & Environment, Inc.	EEI	\$13.35	92.4%	\$58	\$43	0.4x	8.0x	9.9x	27.1x	NM	NM	44.7%	4.1%	5.1%	(3.0x)
Quest Resource Holding Corporation	QRHC	\$2.56	88.0%	\$39	\$43	0.4x	NM	NM	NM	NM	NM	14.1%	(4.0%)	(0.1%)	(24.3x)
Fuel Tech, Inc.	FTFK	\$1.30	71.0%	\$31	\$28	0.5x	NM	NM	NM	NM	NM	37.7%	(2.3%)	(0.1%)	79.9x
Industrial Services of America, Inc.	ISDA	\$2.25	83.3%	\$18	\$27	0.5x	9.1x	30.3x	55.4x	NM	NM	7.2%	1.5%	5.0%	3.0x
Mean				\$388	\$707	0.9x	11.3x	26.9x	24.4x	30.5x	21.3x	25.5%	2.3%	6.5%	8.6x
Median				\$72	\$108	0.6x	11.2x	26.1x	22.1x	31.6x	21.3x	26.5%	3.2%	5.5%	2.6x
High				\$2,106	\$4,533	2.5x	14.7x	44.7x	55.4x	38.5x	22.9x	44.7%	6.7%	18.1%	79.9x
Low				\$18	\$27	0.4x	8.0x	9.9x	6.8x	21.3x	19.8x	7.2%	-4.0%	-0.1%	(24.3x)

Source: Capital IQ

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

LTM = Last Twelve Months





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Select Mergers and Acquisitions & Capital Raising News

❖ Casella Acquires Two Rochester, New York Companies

September 11, 2018 – Casella Waste Systems, Inc., a regional vertically integrated solid waste, recycling and resource management services company, has acquired the assets of Youngblood Disposal Enterprises of Western New York and its wholly owned subsidiaries of Silvarole Transfer, Inc. and select assets of Silvarole Trucking, Inc. Both transactions closed on August 31. Youngblood is a provider of residential, commercial and roll-off collection services in the Rochester, New York, marketplace. Silvarole operates a 950 ton-per-day solid waste transfer station and provides roll-off collection services in the Rochester marketplace. In total, the company expects to generate approximately \$30 million of annualized revenues from the Youngblood and Silvarole acquisitions.

❖ Clean Earth Acquires Disposal and Recycling Technologies, Inc.

September 12, 2018 – Clean Earth acquired Disposal and Recycling Technologies, Inc. (DART). Headquartered in Detroit, DART has a RCRA Part B Licensed TSDF in Charlotte, North Carolina, as well as a non-hazardous waste facility at its Detroit location. DART's North Carolina facility features a full-service, onsite treatment plant specializing in processing wastewater contaminated with hazardous substances. DART serves the Southern Region waste and recycling clients with a full range of environmental services including containerized waste processing, bulk waste treatment and disposal and secure product destruction. DART also provides a full range of environmental services in the Midwest with a waste treatment and ethanol recycling plant located in Detroit. Terms of the transaction were not disclosed. Clean Earth, based in Hatboro, Pennsylvania, offers tailored recycling and waste disposal solutions that ensure efficiency and safety, as well as U.S. Department of Transportation compliance, thereby minimizing liability exposure to the generators. Clean Earth takes a hands-on approach to recycling and reusing waste that would otherwise go into landfills.

❖ WCA Combines Forces with Global Waste Services

September 13, 2018 – WCA Waste Corporation (WCA), a vertically integrated, non-hazardous solid waste services company, announced its expansion in the Houston market with the merger of Global Waste Services, LLC. Global Waste Services is a Houston-based waste collection company that provides trash and recycling services for industrial, commercial and residential customers. In addition to collection operations, Global Waste Services also operates the largest independently owned materials recovery facility in the Houston area and processes more than 50,000 tons of recovered fiber per year. The merger with Global Waste Services enables WCA to expand its sustainability efforts and offer more recycling options to Houston area customers.

❖ WCA Acquires Sunshine Recycling Inc.

September 19, 2018 – WCA Waste Corporation (WCA), a non-hazardous solid waste services company, announced its expansion in the state of Florida with the acquisition of the commercial and roll-off solid waste operations of Sunshine Recycling Inc. The acquisition includes the purchase of two hauling operations. Located in Orlando and Jacksonville, Sunshine Recycling services approximately 2,000 customers and provides commercial, roll-off dumpster and disposal services to businesses in more than 16 counties.

Select Industry News

❖ Waste Management Names John Morris COO

September 6, 2018 – Waste Management Inc. announced that John J. Morris Jr. will be named executive vice president and chief operating officer (COO) of the company, effective immediately. Morris' promotion follows the retirement of James E. Trevathan Jr. Morris, 49, has been with the company for more than 20 years in a number of operating positions of increasing responsibility. Most recently, he served as senior vice president of operations since 2012 and reported directly to Trevathan. Prior to that promotion, Morris held positions including chief strategy officer, area vice president and market area general manager.

❖ Recleim Makes Inc.'s List of Fastest Growing Private Companies

September 11, 2018 – Following another year of "tremendous growth," Recleim, an appliance and HVAC recycling company, earned its highest spot on Inc. Magazine's 2018 list of America's 500 fastest growing companies. The ranking is the company's second consecutive and represents a one-year climb from number 456 in 2017 to 101 this year. Recleim's annual revenue grew to \$36.1 million, a 3,621 percent increase over the prior period. Last year, Recleim expanded its commitment to community revitalization by opening new de-manufacturing plants in Philadelphia and Lima, Ohio, which will complement the operations of the company's flagship facility in Graniteville, S.C. Collectively, the Pennsylvania and Ohio operations have created more than 100 new jobs, and more employment opportunities are forthcoming in the Dallas area, where Recleim plans to open another plant.

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❖ Meridian Waste Names New Government Affairs Manager

September 12, 2018 – Meridian Waste, an integrated, non-hazardous solid waste services company, has named Derrick Standley as its government affairs manager. Standley will be responsible for all local and state governmental collection and disposal contracts, as well as development projects within the company's Missouri operating area, which includes four hauling companies, one municipal solid waste landfill, one transfer station and any new expansion regions within the state. In addition, Standley will be responsible for ensuring quality service to 21 current municipal customers and about 100,000 residential customers. He will also focus on growing the region's municipal collection and disposal businesses by identifying local government service opportunities and strengthening relationships with elected officials and staff. Standley has more than 27 years of industry experience and most recently served as president of Presidio Environmental. Before that, he was the vice president of operations and engineering for WCA Waste Corporation.

❖ Sanitation Salvage Seeks to Continue Trash Removal Services

September 21, 2018 – Sanitation Salvage, the trash removal company whose operating license was recently suspended after a series of dangerous events, announced it wants to continue providing services to the community. The New York City Business Integrity Commission (BIC) suspended Sanitation Salvage's business license in the wake of two fatal accidents, and the private waste hauler fought back with a lawsuit against Mayor Bill de Blasio's administration. In May, news broke that Sean Spence, a driver for Sanitation Salvage in the Bronx, New York, struck and killed an elderly man and a "homeless man" within a six-month period. Further investigation found that the "homeless man" was actually an off-the-books employee who had been working for Sanitation Salvage for more than a year.

❖ E-Waste Recycling Company Owner Pleads Guilty to Fraud

September 24, 2018 – An Indiana man who owned an electronics recycling company in Chicago has pleaded guilty to one count of wire fraud and one count of tax evasion. According to a Chicago Tribune report, Brian Brundage of Dyer, Indiana, pleaded guilty to a scheme in which thousands of tons of e-waste were buried in landfills or resold at profit to companies that shipped materials overseas. Brundage owned Intercon Solutions in Chicago Heights and then later owned EnviroGreen Processing in Gary, Indiana; both companies claimed to recycle e-waste for corporate and government clients. The Tribune also reports that Brundage issued false certificates to customers that indicated their e-waste had been properly recycled, and he allegedly used sales proceeds from the business to pay off personal expenses.

❖ Whole Foods to Pay for "Mishandling" Hazardous Waste

September 26, 2018 – Whole Foods has been ordered to pay more than \$1.6 million for mishandling hazardous waste throughout California. According to the district attorneys' complaint, Whole Foods, Mrs. Gooch's Natural Food Markets and WFM-WO Inc. mishandled hazardous wastes and materials throughout the state over a five-year span. The hazardous wastes and materials included batteries, ignitable liquids and other flammable, reactive, toxic materials.

❖ Republic Services Recognized for Sustainability Efforts

September 26, 2018 – Republic Services was named to both the 2018 Dow Jones Sustainability (DJSI) World and North America Indices for the third consecutive year. The rankings highlight Republic's leadership in corporate governance, environmental, social and financial sustainability. Notably, Republic Services received the top score in the corporate governance, materiality (stakeholder engagement) and talent attraction and retention categories. In addition, Republic Services is recognized on Barron's 100 Most Sustainable Companies list, awarded the Gold Class Award in the RobecoSAM's Sustainability Yearbook and named to the Ethisphere Institute's World's Most Ethical Companies list for the second year in a row.

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Sources include Waste360, Waste Dive and various publicly available news publications. Additional information is available upon request.

