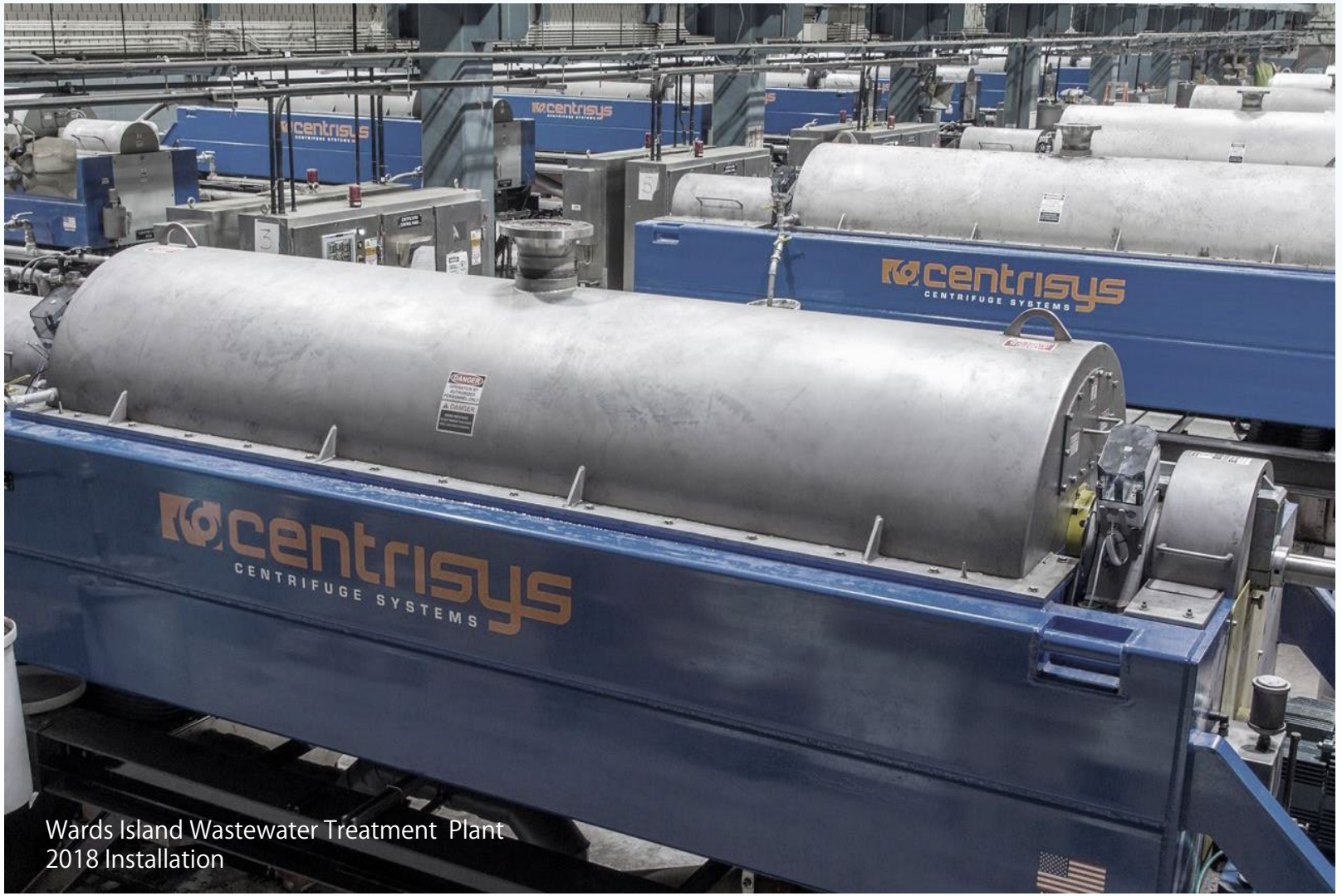
Why NYC Chose Centrisys for Three Treatment Plants



Wards Island Wastewater Treatment Plant
2018 Installation

centrisys cnp

NYC Wards Island

CDM Smith Matrix

(48) CS26-4 centrifuges In 3 NYC WWTPs by 2020.

Table 5-2

Centrifuge Evaluation Matrix

Green background means the score was calculated using the standard deviation procedure.

If the criteria doesn't have a green background, that means the score is a subjective input

Basis for Analysis, assumed the same for all vendors:

Inlet Sludge Rate per unit 250 gpm @ 1.7%
Capture Effieciency Greater than 95%
Centrate Quality 1000 mg/l
Polymer Use 32 lb/ton (active basis), diluted to a 0.25% solution
Noise 85 dba

Notes:

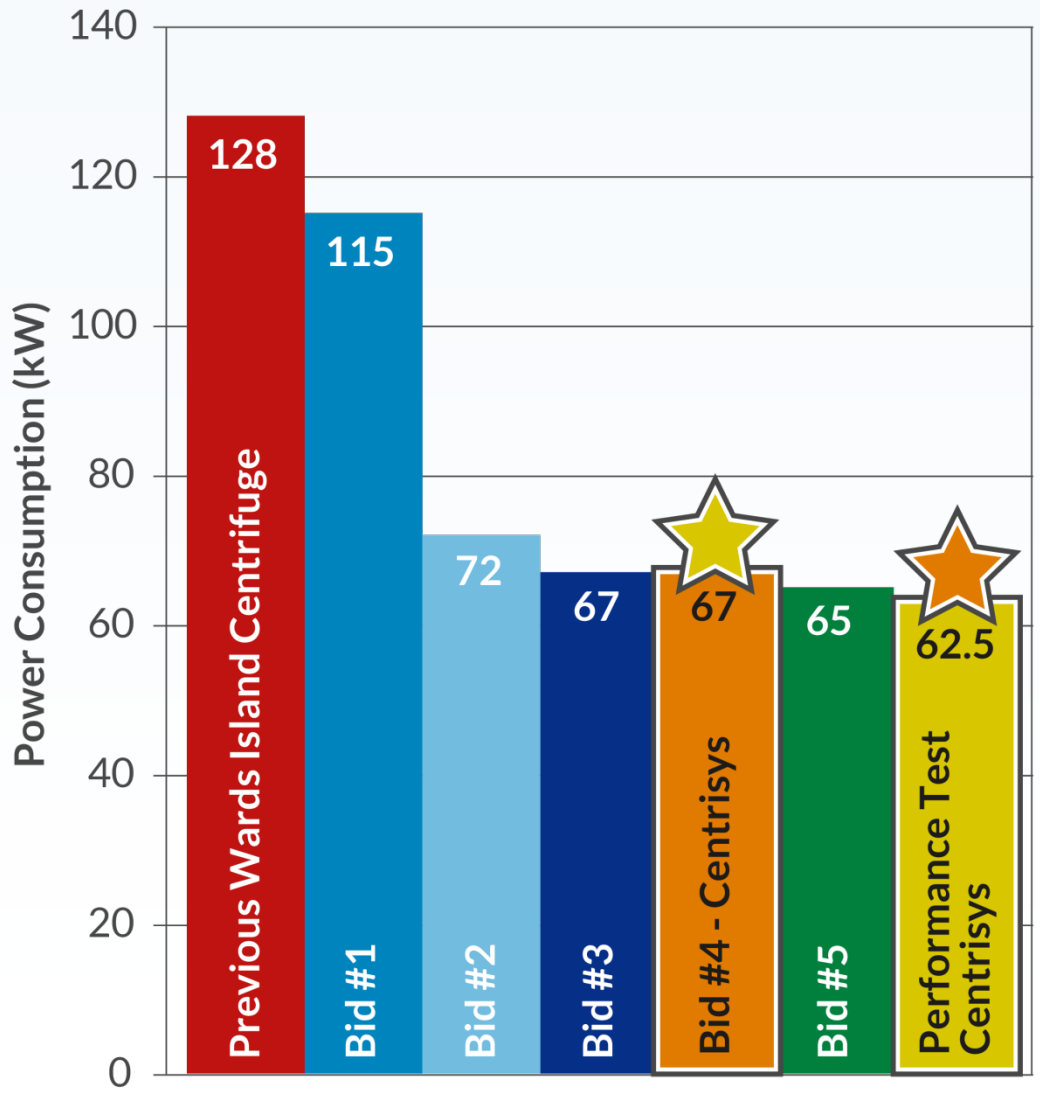
Shaded cells should be equal to 100
Yellow Cells Require Input

Manufacturer					Alfa Laval			Andritz			Andritz			Centrisys			Westfalia		
Model					ALDEC G2-115			CP4-1.2			D6LX			CS 26			CF7000		
Criteria	Maximum Score	Category Weights	Criteria Weights	Normalized Criteria Weights	Value	Score	Weighted Score	Value	Score	Weighted Score	Value	Score	Weighted Score	Value	Score	Weighted Score	Value	Score	Weighted Score
Centrifuge Features		20																	
G-Volume	5		50	10	310,601	1.69	16.87	453,183	4.40	43.96	363,529	2.69	26.93	402,598	3.43	34.35	368,639	2.79	27.90
Back Drive Type/Gearbox/Torque	5		20	4	Direct/ 2 stg planetary/ 20kNm	2.83	11.31	Regen/ 1 stg cylcoid/ 20 kNm	2.83	11.31	Regen/ 1 stg cylcoid/ 20 kNm	2.83	11.31	Direct-hydraulic/radial piston moto/ 25kNm	4.63	18.54	Direct/4 stg planetary/17.4kNm	1.89	7.55
Bearing Lubrication System	5		15	3	Grease	4	12.00	Recirculated forced oil	3	9.00	Recirculated forced oil	3	9.00	single pass oil	5	15.00	single pass oil	5	15.00
Bowl Design	5		5	1	CC Duplex, 10 deg, wear strips	3	3.00	CS, 10 deg, grooves	2	2.00	CC Duplex, 11 deg, grooves	3	3.00	CC Duplex, 15 deg, strips	4	4.00	CC Duplex, 15 deg, grooves	3	3.00
Conveyor Design	5		5	1	open, progressive	3	3.00	open, progressive	3	3.00	open, progressive	3	3.00	open, constant	3	3.00	open, progressive	3	3.00
Special Features	5		5	1	power plates, direct torque measurement	2	2.00	None	0	0.00	None	0	0.00	solids evac stationary bowl, reverse rotation possible, direct torque measurement	3	3.00	None	0	0.00
Subtotal for Category			100	20			48.18			69.26			53.23			77.88			56.44
Performance		20																	
Power Consumption (kW)	5		40	8	67	3.48	27.83	115	1.22	9.80	72	3.24	25.95	67	3.48	27.83	65	3.57	28.58
Cake Solids (%)	5		60	12	28%	3	36.00	28%	3	36.00	28%	3	36.00	28%	3	36.00	28%	3	36.00
Polymer Consumption (active lb/ton)	5		0	0	30	3.45	0.00	32	1.21	0.00	30	3.45	0.00	30	3.45	0.00	30	3.45	0.00
Centrate Quality	5		0	0			0.00			0.00			0.00			0.00			0.00
Subtotal for Category			100	20			63.83			45.80			61.95			63.83			64.58
Installation		15																	
Structural Considerations	5		30	4.5	minor	4	18.00	None required	5	22.50	new support beams, new chutes	3	13.50	no support issues, new chutes	4	18.00	new support beams, new chutes	3	13.50
Mechanical Considerations	5		30	4.5	feed at opp end, new chute transition fittings	2	9.00	None required	5	22.50	feed same end, new chute transition fittings	4	18.00	feed opposite end, but piping included on skid, new chute transition fittings	3	13.50	feed opposite end, new chute transition fittings	2	9.00
Construction Duration	5		20	3	Installation estimate 4 weeks for 3 machines. Estimated 18 month total duration.	5	15.00	Long lead on first unit. Installation estimate 4 weeks for 3 machines. Estimated 24 month total duration.	4	12.00	Structural modifications required. Installation estimate 8 weeks for 3 machines. Estimated 24 month total duration.	3	9.00	Long lead on first unit. Installation estimate 4 weeks for 3 machines. Estimated 24 month total duration.	4	12.00	Structural modifications required. Installation estimate 8 weeks for 3 machines. Estimated 24 month total duration.	3	9.00
Delivery Time	5		20	3	First unit in approximately 9 months (includes submittals). 2 units per week thereafter.	4	12.00	First unit in 12 months (includes submittals), 2 Units per month thereafter	2	6.00	First two units in 10 months (includes submittals), 2 - 4 units per month thereafter	3	9.00	First unit in 12 months (includes submittals), 2 Units per month thereafter	2	6.00	First two units in 8-10 months (includes submittals), 2 units each week thereafter	4	12.00
Subtotal for Category			100	15			54.00			63.00			49.50			49.50			43.50
Operations and Maintenance		25																	
Service Staff	5		15	3.75	7 field/ 30 in VA	3.25	12.19	30	3	11.25	30	3	11.25	x	2	7.50	22 Northvale/ 100 cust service	5	18.75
Major Parts Stock, Repair, Overhaul Location	5		15	3.75	Chesapeake, VA (Approximately 330 miles)	3.39	12.72	Scott Depot, WV (Approximately 560 miles)	2.71	10.17	Scott Depot, WV (Approximately 560 miles)	2.71	10.17	Wisconson (Approximately 860 miles)	1.74	6.52	Northvale (Bergen County), NJ (Approximately 25 miles)	4.45	16.67
Gearbox Overhaul Frequency	5		20	5	20000 hr	4.51	22.54	12000 hr	2.10	10.48	12000 hr	2.10	10.48	15000 hr	3.00	15.00	16000 hr	3.30	16.51
Bearing Lubrication System	5		15	3.75	auto greaser, 1 qt	2	7.50	forced oil, large reservoir	3	11.25	forced oil, large reservoir	3	11.25	single pass oil, 1 qt	4	15.00	single pass oil, 1 qt	4	15.00
Weight of bowl&scroll/Weight of Gearbox	5		10	2.5	4400/660 lb	4	10.00	5500/993 lb	2	5.00	7100/993	3	7.50	8050/375 lb	5	12.50	??	1	2.50
Reserved	5		0	0			0.00			0.00			0.00			0.00			0.00
Years model has been Manufactured	5		25	6.25	10	4.21	26.29	5	2.84	17.72	7	3.38	21.15	10	3.11	19.44	0	1.46	9.15
Subtotal for Category			100	25			91.24			65.87			71.79			75.96			78.58
Cost		20																	
Centrifuge Budget Cost	5		15	3	$7,930,000	2.83	8.49	$8,970,000	1.60	4.80	$7,995,000	2.75	8.26	$6,695,000	4.29	12.88	$7,345,000	3.52	10.57
Estimated Facility Upgrade Capital Cost	5		20	4	$40,022,000	2.76	11.02	$42,779,000	1.74	6.95	$40,393,000	2.62	10.48	$35,567,000	4.40	17.61	$38,048,000	3.49	13.94
Estimated Annual Power/Chemical Cost	5		10	2	$4,024,000	3.47	6.94	$4,390,100	1.22	2.43	$4,050,400	3.31	6.62	$4,024,000	3.47	6.94	$4,013,400	3.54	7.07
Estimated Cake Disposal Cost	5		30	6	$18,466,000	3	18.00	$18,466,000	3	18.00	$18,466,000	3	18.00	$18,466,000	3	18.00	$18,466,000	3	18.00
Estimated Payback Period	5		25	5	16.2	3.43	17.14	23.0	1.32	6.62	17.7	2.96	14.79	14.5	3.94	19.68	16.4	3.36	16.78
Subtotal for Category			100	20			61.60			38.80			58.14			75.11			66.36
Total Score		100		100			318.84			282.72			294.62			342.29			309.47

NYC Wards Island

Wards Island Performance Test – Power Consumption Results

Data acquired from the NYC Wards Island Process Control Laboratory.



NYC Wards Island

Wards Island Performance Test

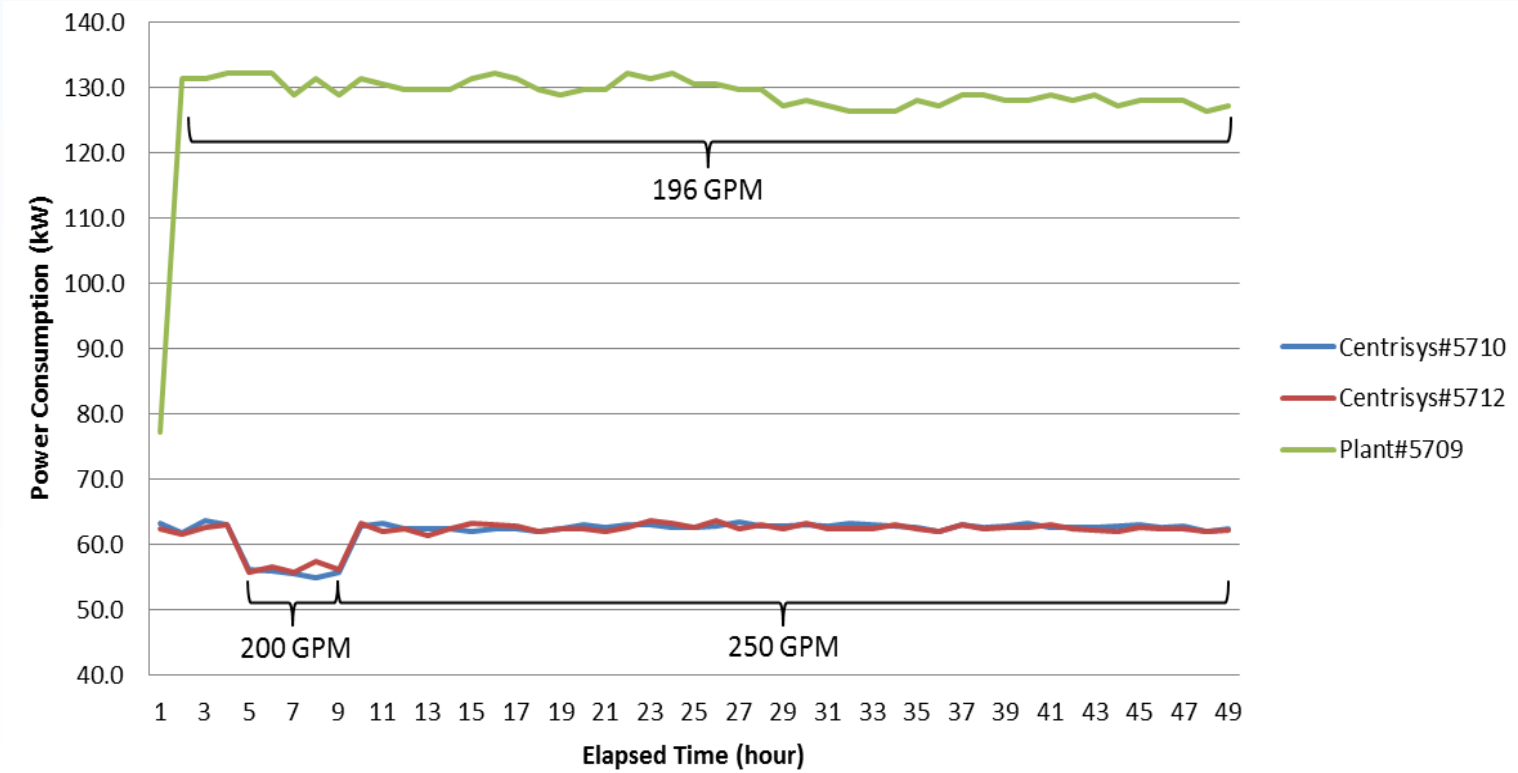
	Flow Rate [GPM]	Cake Solids [% TS]	Polymer Dose [lb/dry ton]	Capture Rate [% w/w]
Bid Specs	250	26%	36	95%
Unit 5703	252.5	26.7%	29.8	99%
Unit 5705	252.5	27.1%	28.2	99%

A drastic reduction in power was maintained while exceeding performance specifications.

Data from July 2017 test.

NYC Wards Island

Wards Island Performance Test



Data from June 2017 test.

NYC Hunts Point

Arcadis Matrix

ARCADIS

Table 1: Evaluation Criteria and Weighting

Evaluation Item	Category	Category Weight	Value Desired	Unit
A-1	Calculated Present Worth of 20-Year Lifecycle Cost	30	Lower Value Desired	$
A-2	Guaranteed Power Consumption Present Worth of 20-Year Lifecycle Cost (Based on Info. Item I-1)	15	Lower Value Desired	$
A-3	Process Present Worth of 20-Year Lifecycle Cost (Based on Info. Item I-2)	15	Lower Value Desired	$
B-1	G-Volume at 3,000 G-Force (Based on Info. Item I-3)	10	Higher Value Desired	G-Gallon
B-2	Sigma at 3,000 G-Force (Based on Info. Item I-4)	10	Higher Value Desired	In^2
C-1	Scroll Drive Torque Rating (Based on Info. Item I-5)	10	Higher Value Desired	Ft.-Lbs.
C-2	Frame-to-Rotor Weight Ratio (Based on Info. Item I-6)[1]	10	1.00	Unit-less

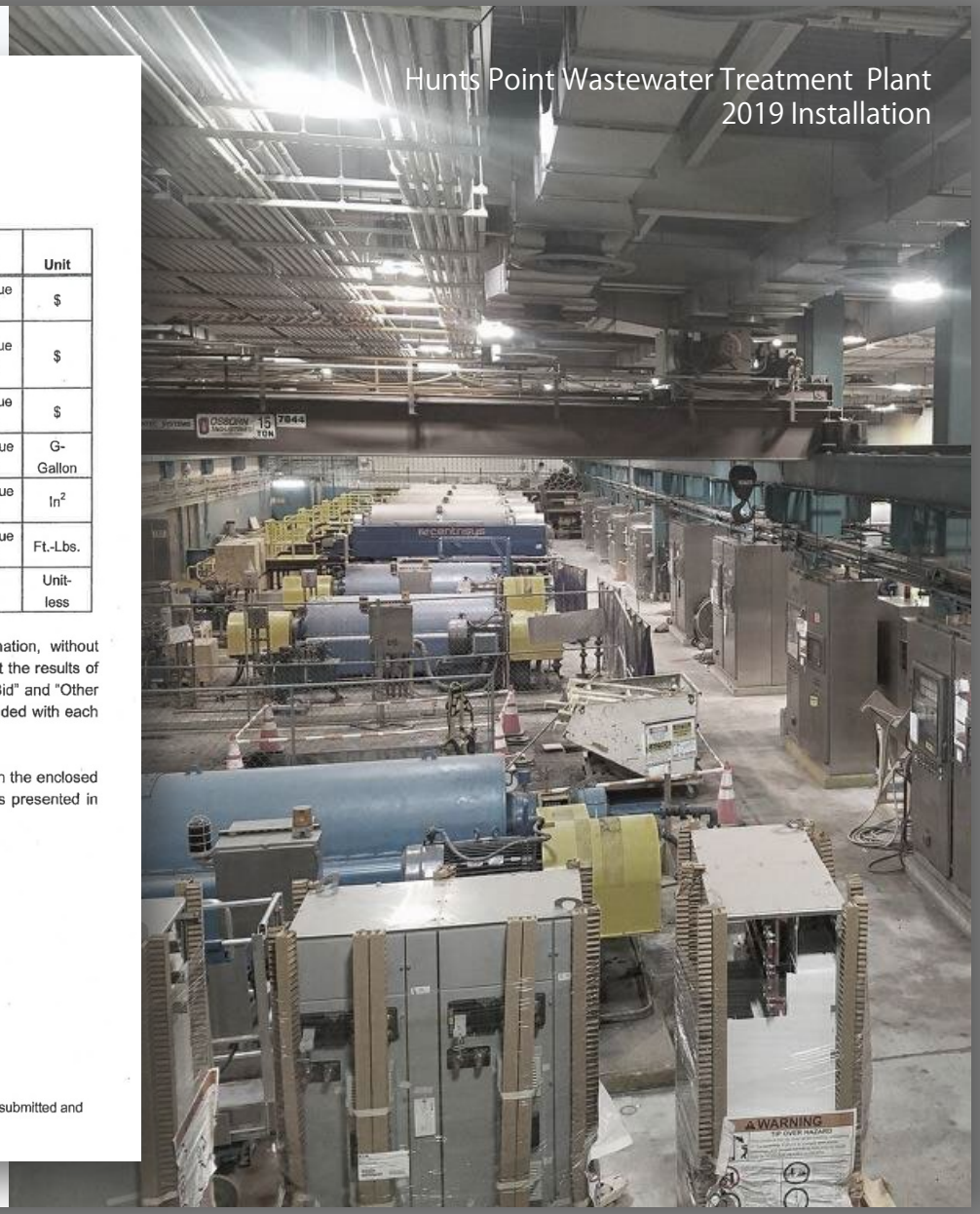
Scoring: Bids were evaluated and scored based on submitted information, without consideration of exceptions or conditions, which, if negotiated, could affect the results of the evaluations and scoring. Refer to the "responsiveness of Centrisys's Bid" and "Other Bids Received" sections, below, regarding exceptions and conditions included with each Bid.

Results of our evaluations and scoring of the Bids are presented in detail in the enclosed table titled, "Evaluation and Scoring of Bids". A summary of the scores is presented in Table 2 below:

Table 2: Summary of Bid Evaluation Scores

Bidder	Score[1]
Centrisys	352.43
Andritz	301.30
GEA Westfalia	283.29
Alfa Laval	262.98

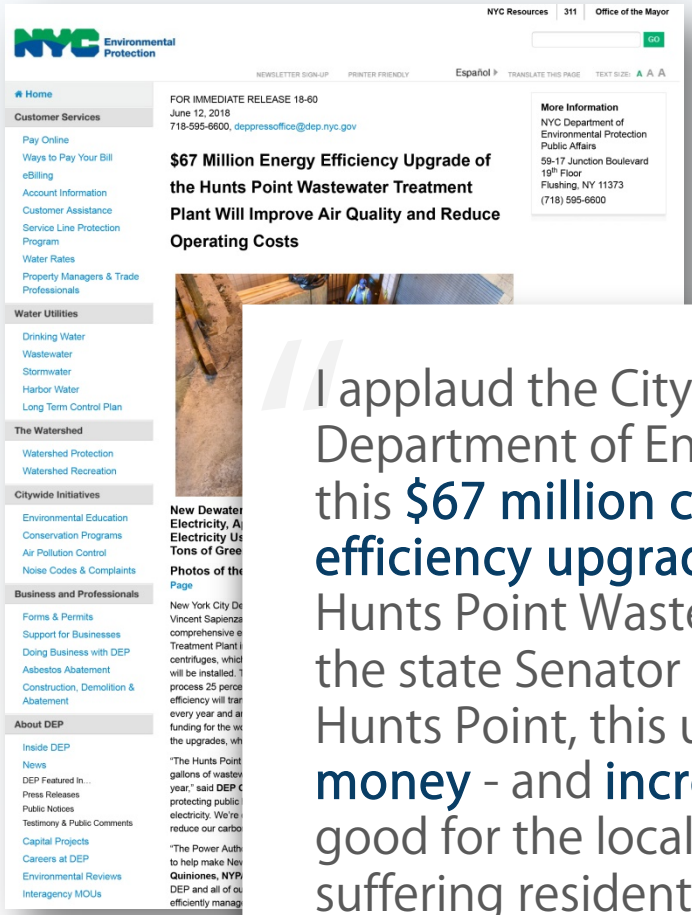
[1] See the discussion, on the following page, on frame-to-rotor weight ratio information submitted and the magnitude of its effect on scores.



Hunts Point Wastewater Treatment Plant
2019 Installation

NYC Hunts Point

NYC Environmental Protection Press Release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NYC Environmental Protection

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FOR IMMEDIATE RELEASE 18-60
June 12, 2018
718-595-6600, deppressoffice@dep.nyc.gov

$67 Million Energy Efficiency Upgrade of the Hunts Point Wastewater Treatment Plant Will Improve Air Quality and Reduce Operating Costs

More Information
NYC Department of Environmental Protection
Public Affairs
59-17 Junction Boulevard
19th Floor
Flushing, NY 11373
(718) 595-6600

"I applaud the City, and specifically the Department of Environmental Protection, for this **$67 million comprehensive energy efficiency upgrade** that has begun at the Hunts Point Wastewater Treatment Plant. As the state Senator whose district includes Hunts Point, this upgrade will not only **save money** - and **increase energy output**, but is good for the local environment and its long-suffering residents by **reducing greenhouse gases**."

--State Senator Luis Sepulveda