New York City MSW Composting Report

Appendix J Life Cycle Financial Analysis for New York City MSW Composting Facility

Report by R.S. Lynch and Company, Inc.

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NA = Not Applicable to a publicly financed facility.

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NYC DRUM PRELIMINARY

LIFE-CYCLE FINANCIAL ANALYSIS

RUN: Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF

PREPARED BY: R. S. Lynch & Company, Inc.

COURTEDIO	Developme							
ASSUMPTIONS: Capital Costs:	First 6 Months of Project Developmen	Second 6 Months of Project Development	Upon Project Fini	sh Deprecation	Operating Costs (000):		Annual Escalation	Per ton of MSW
•			(000)	Per (Years)			Rate	
					Salaries & Benefits	\$3,799		\$41.
Design & Engineering Cost		\$1,000,000		28	OTPS	\$825		\$9.
Permitting & Project Development		\$2,000,000)	28	Repair & Replace	\$1,000	2.00%	\$11
Project Financing & Construction: (\$000):							
Equipment			\$20,00		8000000 kwh/yr \$0.0			\$7
Digester Drums			included	10	Residue Disposal	\$1,977	2.00%	\$21
Biofilter			\$1,00		(29.1% of MSW @ \$75/ton)			
249,200 Sqare Feet of Buildings @	\$115 per SF		\$28,65					
Fire & Electrical Systems & Other			included	10	TOTAL	\$8,241		\$
	\$250,000 per Acre		NA					
Performance Guarantee			NA	28				
nterest During Construction			NA	28				
Borrower's Counsel			NA	28				
Contingency & Spare Parts @ 10%			\$4,96	66 28				_
Debt Reserve Fund			NA		Throughput:	Tons per Day	Days per Year	Tons per Ye
inancing:								
	% assumes General Obligation debt		\$58		MSW	300.00		
Underwriter's Counsel			\$5		Biosolids	200.00		
Issuer's fee @ 1%, if re	equired		NA	28	Total	500		151
Bond Counsel			\$5					
Feasibility Opinion			NA	. 28				
Trustee			\$2		Fees per ton:			
Cusip, Printing & Other	•		\$2					
Financial Advisor			\$2	28	MSW Tip Fee (w/ Residue Disposal		2.00%	
					Biosolids Tip Fee	\$100.00		
Miscellaneous		\$0 \$0			Aluminum Revenue (.75% MSW)	\$0		
UB TOTAL		\$0 \$3,000,000			Ferrous Metal Revenue (2.3% MSW			
TOTAL			\$58,63	35	Sold Compost Revenue (FOB Plant			
inancing Assumptions:					Unsold Compost Cost (FOB Plant)	\$0.00	2.00%	
Debt (%/Amt)	100	0% 100%	100	% \$58,635	Financial Results:			
Equity (%/Amt)		0%		% \$38,033 % \$0	Cost per MSW Ton:			
Total Capital	,	176	, ,	% \$58,635	Year 1 \$75.0	'n		
Average % Equity			0.00		Teal 1 \$75.0			
Debt Term				70 10 years	10 Year IRR NA			
Debt Rate			4.72		20 Year IRR NA			
Debt Nate			4.12	/o	20 real INIX			
Depreciation Summary:					Debt Coverage Ratio:			
-					Year 1 NA			
40 1/	NA Total				Avg. Yr. 1-10 NA			
10 Year	INA I Utal							

NYC DRUM PRELIMINARY LIFE-CYCLE FINANCIAL ANALYSIS RUN: Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF PREPARED BY: R. S. Lynch & Company, Inc.											
Year	1	2	3	4	5	6	7	8	9	10	
Revenues:											
MSW Tons MSW Tip Fee MSW Revenue	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	
Sludge Tons Sludge Tip Fee Sludge Revenue	60400 \$100.00 \$6,040,000	60400 \$102.00 \$6,160,800	60400 \$104.04 \$6,284,016	60400 \$106.12 \$6,409,696	60400 \$108.24 \$6,537,890	60400 \$110.41 \$6,668,648	60400 \$112.62 \$6,802,021	60400 \$114.87 \$6,938,061	60400 \$117.17 \$7,076,823	60400 \$119.51 \$7,218,359	
Compost Tons (50%MSW) % Sold % Unsold Rev/T Cost/T Compost Net Rev per Ton Compost Revenue	45300 25.00% 75.00% \$0.00 \$0.00 \$0.00	45300 50.00% 50.00% \$0.00 \$0.00 \$0.00	45300 75.00% 25.00% \$0.00 \$0.00 \$0	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0	45300 100.00% 0.00% \$0.00 \$0.00 \$0	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	
Al Rev/T Fe Rev/T Recyclable Rev Total Revenue	\$0 \$0.00 \$0 \$6,040,000	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	

NYC DRUM PRELIMINARY LIFE-CYCLE FINANCIAL ANALYSIS RUN: Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF PREPARED BY: R. S. Lynch & Company, Inc.											
Year	11	12	13	14	15	16	17	18	19	20	
Revenues:											
MSW Tons	90600	90600	90600	90600	90600	90600	90600	90600	90600	90600	
MSW Tip Fee	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
MSW Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Sludge Tons	60400	60400	60400	60400	60400	60400	60400	60400	60400	60400	
Sludge Tip Fee	\$121.90	\$124.34	\$126.82	\$129.36	\$131.95	\$134.59	\$137.28	\$140.02	\$142.82	\$145.68	
Sludge Revenue	\$7,362,726	\$7,509,981	\$7,660,180	\$7,813,384	\$7,969,652	\$8,129,045	\$8,291,626	\$8,457,458	\$8,626,607	\$8,799,139	
Compost Tons	45300	45300	45300	45300	45300	45300	45300	45300	45300	45300	
% Sold	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
% Unsold	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Rev/T	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Cost/T	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Compost Net Rev per Ton	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Compost Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Al Rev/T	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Fe Rev/T	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Recyclable Rev	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total Revenue	\$7,362,726	\$7,509,981	\$7,660,180	\$7,813,384	\$7,969,652	\$8,129,045	\$8,291,626	\$8,457,458	\$8,626,607	\$8,799,139	

NYC DRUM PRELIMINARY LIFE-CYCLE FINANCIAL AN RUN: Public Owner PREPARED BY: R. S. Lyncl	ship - MSW300		9-02 assumpt	tions w/ MRF						PAGE 4
Year	21	22	23	24	25	26	27	28	29	30
Revenues:										
MSW Tons MSW Tip Fee MSW Revenue	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0	90600 \$0.00 \$0
Sludge Tons Sludge Tip Fee Sludge Revenue	60400 \$148.59 \$8,975,122	60400 \$151.57 \$9,154,625	60400 \$154.60 \$9,337,717	60400 \$157.69 \$9,524,472	60400 \$160.84 \$9,714,961	60400 \$164.06 \$9,909,260	60400 \$167.34 \$10,107,445	60400 \$170.69 \$10,309,594	60400 \$174.10 \$10,515,786	60400 \$177.58 \$10,726,102
Compost Tons % Sold % Unsold Rev/T Cost/T Compost Net Rev per Ton Compost Revenue	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00 \$0	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00	45300 100.00% 0.00% \$0.00 \$0.00 \$0.00
Al Rev/T Fe Rev/T Recyclable Rev Total Revenue	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$9,909,260	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0	\$0.00 \$0.00 \$0 \$0

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NYC DRUM PRELIMINARY

LIFE-CYCLE FINANCIAL ANALYSIS

Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF

PREPARED BY: R. S. Lynch & Company, Inc.

Debt Service:

RUN:

Beginning Principal	\$58,635
Term	20 Years
Rate	4.72%

Year	Principal	Interest	Total	Outo Palanco
i oai	Типограг	microsi	iolai	Outs. Balance
1	\$1,826	\$2,768	\$4,594	\$58,635
2	\$1,913		\$4,594 \$4,594	\$56,809 \$54,896
3	\$2,003	\$2,591	\$4,594 \$4,594	
4	\$2,097	\$2,497		\$52,893
5	\$2,196	\$2,497 \$2,398	\$4,594	
6	\$2,300	\$2,396 \$2,294	\$4,594 \$4,594	\$48,599
7	\$2,409		\$4,594	\$46,299
8		\$2,185	\$4,594	\$43,891
9	\$2,522 \$2,644	\$2,072	\$4,594	\$41,368
	\$2,641	\$1,953	\$4,594	\$38,727
10	\$2,766	\$1,828	\$4,594	\$35,961
11	\$2,897	\$1,697	\$4,594	\$33,064
12	\$3,033	\$1,561	\$4,594	\$30,031
13	\$3,177	\$1,417	\$4,594	\$26,854
14	\$3,326	\$1,268	\$4,594	\$23,528
15	\$3,483	\$1,111	\$4,594	\$20,044
16	\$3,648	\$946	\$4,594	\$16,397
17	\$3,820	\$774	\$4,594	\$12,576
18	\$4,000	\$594	\$4,594	\$8,576
19	\$4,189	\$405	\$4,594	\$4,387
20	\$4,387	\$207	\$4,594	(\$0)
21	\$0	(\$0)	\$0	(\$0)
22	\$0	(\$0)	\$0	(\$0)
23	\$0	(\$0)	\$0	(\$0)
24	\$0	(\$0)		(\$0)
25	\$0	(\$0)		(\$0)
Total	\$58,635	\$33,244	\$91,880	

NYC DRUM PRELIMINARY LIFE-CYCLE FINANCIAL ANALYSIS RUN : Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF PREPARED BY: R. S. Lynch & Company, Inc.												PAGE 6		
Depreciatio	n & Operati	ing Costs:												
Year			1	2	3	4	5	6	7	8	9	10		
Salaries & E Other O&M R&R Off Site Cur Electric Reside T&E DSRF Total Opera	ring)		\$3,799 \$825 \$1,000 \$0 \$640 \$1,977 \$0 \$8,241	\$3,875 \$842 \$1,020 \$0 \$653 \$2,017 \$0 \$8,406	\$3,952 \$858 \$1,040 \$0 \$666 \$2,057 \$0 \$8,574	\$4,032 \$875 \$1,061 \$0 \$679 \$2,098 \$0 \$8,746	\$4,112 \$893 \$1,082 \$0 \$693 \$2,140 \$0 \$8,921	\$4,194 \$911 \$1,104 \$0 \$707 \$2,183 \$0 \$9,099	\$4,278 \$929 \$1,126 \$0 \$721 \$2,227 \$0 \$9,281	\$4,364 \$948 \$1,149 \$0 \$735 \$2,271 \$0 \$9,467	\$4,451 \$967 \$1,172 \$0 \$750 \$2,317 \$0 \$9,656	\$4,540 \$986 \$1,195 \$0 \$765 \$2,363 \$0 \$9,849		
Depreciatio	n:													
10 Year 28 Year 20 Year	NA NA	\$0	\$0 \$0 \$0											
Total		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		

NYC DRUM PRELIMINARY LIFE-CYCLE FINANCIAL A	NALYSIS								P	AGE 7
PREPARED BY: R. S. Lyne		SLUDGE150 - 9 c.	9-02 assumptio	ons w/ MRF						
Depreciation & Operating Co	osis:									
Year	11	12	13	14	15	16	17	18	19	20
Salaries & Benefits	\$4,631	\$4,724	\$4,818	\$4,914	\$5,013	\$5,113	\$5,215	\$5,320	\$5,426	\$5,534
Other O&M	\$1,006	\$1,026	\$1,046	\$1,067	\$1,089	\$1,110	\$1,133	\$1,155	\$1,178	\$1,202
R&R	\$1,219	\$1,243	\$1,268	\$1,294	\$1,319	\$1,346	\$1,373	\$1,400	\$1,428	\$1,457
Off Site Curing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electric	\$780	\$796	\$812	\$828	\$844	\$861	\$879	\$896	\$914	\$932
Reside T&D	\$2,410	\$2,459	\$2,508	\$2,558	\$2,609	\$2,661	\$2,714	\$2,769	\$2,824	\$2,881
DSRF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Operating Costs	\$10,046	\$10,247	\$10,452	\$10,661	\$10,874	\$11,092	\$11,314	\$11,540	\$11,771	\$12,006
Depreciation:										
10 Year	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28 Year	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
20 Year	\$0	\$0	\$0	\$0	\$0	\$ 0	\$ 0	\$ 0	\$ 0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest Exp	\$1,697	\$1,561	\$1,417	\$1,268	\$1,111	\$946	\$774	\$594	\$405	\$207

LIFE-CYCLE FINANCIAL AI RUN: Public Owne PREPARED BY: R. S. Lync	ership - MSW300/S	SLUDGE150 - c.	9-02 assumpti	ons w/ MRF					F	PAGE 8
Depreciation & Operating Co	ests:									
Year	21	22	23	24	25	26	27	28	29	30
Salaries & Benefits	\$5,645	\$5,758	\$5,873	\$5,991	\$6,110	\$6,233	\$6,357	\$6,484	\$6,614	\$6,746
Other O&M	\$1,226	\$1,250	\$1,275	\$1,301	\$1,327	\$1,353	\$1,381	\$1,408	\$1,436	\$1,465
R&R	\$1,486	\$1,516	\$1,546	\$1,577	\$1,608	\$1,641	\$1,673	\$1,707	\$1,741	\$1,776
Off Site Curing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$(
lectric	\$951	\$970	\$989	\$1.009	\$1,029	\$1,050	\$1,071	\$1,092	\$1,114	\$1,137
Reside T&D	\$2,938	\$2,997	\$3,057	\$3,118	\$3,180	\$3,244	\$3,309	\$3,375	\$3,443	\$3,511
OSRF	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0,01
otal Operating Costs	\$12,246	\$12,491	\$12,741	\$12,996	\$13,256	\$13,521	\$13,791	\$14,067	\$14,348	\$14,635
Pepreciation:										
0 Year	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Year	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0 Year	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
otal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FE-CYCLE FINANCIAL ANAL UN: Public Ownersh REPARED BY: R. S. Lynch 8	ip - MSW300/SLUD)GE150 - 9-02 a	ssumptions w/	MRF					ı	PAGE 9
YC DRUM PRELIMINARY IFE-CYCLE FINANCIAL ANAL UN: Public Ownersh REPARED BY: R. S. Lynch & inancial Results: Year	ip - MSW300/SLUD	OGE150 - 9-02 a	ssumptions w/	MRF 3	4 5	6	7	8	,	PAGE 9
FE-CYCLE FINANCIAL ANAL JN: Public Ownersh REPARED BY: R. S. Lynch 8 nancial Results:	ip - MSW300/SLUD & Company, Inc. ISW) \$6,0 \$8,2	1 040,000 \$6,16 241,345 \$8,40	·	3 4,016 \$6,409,6 4,295 \$8,745,7	596 \$6,537,890 781 \$8,920,697	\$6,668,648 \$9,099,111	7 \$6,802,021 \$9,281,093 \$4,593,982	8 \$6,938,061 \$9,466,715 \$4,593,982		10 \$7,218,359 \$9,849,170
FE-CYCLE FINANCIAL ANAL UN: Public Ownersh REPARED BY: R. S. Lynch 8 nancial Results: Year Revenues (w/o M Operating Exp	nip - MSW300/SLUD & Company, Inc. (ISW) \$6,0 \$8,2 \$4,5	1 040,000 \$6,16 241,345 \$8,40 93,982 \$4,59 795,327) (\$6,83	2 50,800 \$6,284 66,172 \$8,574 33,982 \$4,593 19,354) (\$6,884	3 4,016 \$6,409,6 4,295 \$8,745,7 3,982 \$4,593,6	\$6,537,890 781 \$8,920,697 982 \$4,593,982 967) (\$6,976,789	\$6,668,648 \$9,099,111 \$4,593,982) (\$7,024,445)	\$6,802,021 \$9,281,093	\$6,938,061 \$9,466,715	9 \$7,076,823 \$9,656,049	

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NYC DRUM PRELIMINARY	
LIFE-CYCLE FINANCIAL ANALYSIS	

RUN: Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF

PREPARED BY: R. S. Lynch & Company, Inc.

Financial Results:

Year	11	12	13	14	15	16	17	18	19	20	
Revenues (w/o MSW)	\$7,362,726	\$7,509,981	\$7,660,180	\$7,813,384	\$7,969,652	\$8,129,045	\$8,291,626	\$8,457,458	\$8,626,607	\$8,799,139	
Operating Exp	\$10,046,154	\$10,247,077	\$10,452,018	\$10,661,059	\$10,874,280	\$11,091,765	\$11,313,601	\$11,539,873	\$11,770,670	\$12,006,083	
Debt Service	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	
Net Cost	(\$7,277,410)	(\$7,331,078)	(\$7,385,820)	(\$7,441,657)	(\$7,498,610)	(\$7,556,703)	(\$7,615,957)	(\$7,676,397)	(\$7,738,045)	(\$7,800,926)	
MSW Ton	90600	90600	90600	90600	90600	90600	90600	90600	90600	90600	
Cost per Ton	(\$80)	(\$81)	(\$82)	(\$82)	(\$83)	(\$83)	(\$84)	(\$85)	(\$85)	(\$86)	

NYC DRUM PRELIMINARY LIFE-CYCLE FINANCIAL ANALYSIS

RUN: Public Ownership - MSW300/SLUDGE150 - 9-02 assumptions w/ MRF

PREPARED BY: R. S. Lynch & Company, Inc.

Financial Results:

Year	21	22	23	24	25	26	27	28	29	30
Revenues (w/o MSW)	\$8,975,122	\$9,154,625	\$9,337,717	\$9,524,472	\$9,714,961	\$9,909,260	\$10,107,445	\$10,309,594	\$10,515,786	\$10,726,102
Operating Exp	\$12,246,205	\$12,491,129	\$12,740,952	\$12,995,771	\$13,255,686	\$13,520,800	\$13,791,216	\$14,067,040	\$14,348,381	\$14,635,349
Debt Service	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982	\$4,593,982
Net Cost	(\$7,865,065)	(\$7,930,487)	(\$7,997,217)	(\$8,065,282)	(\$8,134,708)	(\$8,205,522)	(\$8,277,753)	(\$8,351,428)	(\$8,426,577)	(\$8,503,229)
MSW Ton	90600	90600	90600	90600	90600	90600	90600	90600	90600	90600
Cost per Ton	(\$87)	(\$88)	(\$88)	(\$89)	(\$90)	(\$91)	(\$91)	(\$92)	(\$93)	