

**ATTACHMENT A
COST ESTIMATE MATRIX
WASTE PREVENTION AND
DESIGN AT NNSA/NV FFAO SITES**

AMOUNT	UNIT	DESCRIPTION
6,867.00	ft ³	Sanitary waste projected (Source: Industrial Sites ER Life-Cycle Baseline, Rev 3)
<u>4,300.00</u>	ft ³	Non-Sanitary waste projected (1/2 of ER LCB projection of 8,599 cubic feet is estimated to be eliminated via field screening)
11,167.00	ft ³	Total estimated waste averted from potential haz/rad/mixed waste stream
\$1.95	Per ft ³	Sanitary waste disposition cost (does not include sanitary landfill costs, which remain the same) includes laborers, and pick up and transport of drums
6,867.00	ft ³	Sanitary waste projection
<u>\$13,390.65</u>		Sanitary waste disposition costs avoided
\$13.95	Per ft ³	Low Level Radioactive Waste (LLW) Disposition cost
2,150.00	ft ³	Percent of estimated non-sanitary waste projected as Low Level Radioactive Waste (LLW) is 50% (1/2 of 4,300 ft ³)
27.00	each	B-25 Boxes needed (hold roughly 81 ft ³)
\$1,050.00	each	Cost per B-25 Box
<u>\$58,342.50</u>		LLW disposition costs avoided
\$34.58	Per ft ³	Solid Hazardous Waste Disposition Cost (\$22.00 is disposal, remainder is labor and transportation costs)
2,150.00	ft ³	Percent of estimated non-sanitary waste projected as hazardous waste is 50%
55.00%		Percent of hazardous waste predicted to be solid waste (based on actual metrics, 55% of IDW is solid waste)
<u>\$40,890.85</u>		Solid hazardous waste disposition costs avoided
\$763.00	Per ft ³	Liquid Hazardous Waste Disposition Cost (pick up, disposition and disposal in lagoon/based on < 5 cubic yards per site pricing)
2,150.00	ft ³	Percent of estimated non-sanitary waste projected as hazardous waste is 50%
45.00%		Percent of hazardous waste predicted to be liquid waste (based on actual metrics, 45% of IDW is liquid waste)
<u>\$738,202.50</u>		Liquid Hazardous waste disposition costs avoided
<u>\$850,826.50</u>		Total disposition cost avoided by source reduction from IDW waste stream and placing field-screened waste directly into dumpster
7.50	ft ³	Volume of waste per drum
1,489.00		Number of drums avoided (11,167 divided by 7.5 vol/drum)
\$62.00	ea.	Cost per new drum
<u>\$92,318.00</u>		Drum cost avoided (1,489 drums times \$62.00 ea.)
		Assumption: 55% of the number of drums avoided would have been PPE, and the remaining 45% would be rinsate
\$6.00	ea.	Cost per wooden pallet (for staging PPE drums)
205.00		Pallets avoided (55% of 1,489 are PPE, divided by 4 drums per pallet)
<u>\$1,230.00</u>		Wooden pallet cost avoided
\$400.00	ea.	Cost per spill pallet (for staging rinsate)
168.00		Spill pallets avoided (45% of 1,489 are Rinsate, divided by 4 drums per pallet)
<u>\$67,200.00</u>		Spill pallet cost avoided
		HWAA (Hazardous Waste Accumulation Area) Costs Avoided: 63 Corrective Action Units (CAUs) (per Appendix II and III of the FFAO) 473 Corrective Action Sites (CASs) (per the Appendix II and III data, FFAO)
252.00	HWAAs	Assumption: Approximately 4 HWAAs per CAU times 63 CAUs; minimum time required to inspect HWAA is 1.5 hours
0.50	Hour	Estimated time saved per HWAA inspection due to less drums
10.00	each	Assume number of weekly (required) inspections per HWAA is over a 10 week period
\$60.51	ea/hr	Waste handler rate (two waste handlers required at each site)
<u>\$152,485.20</u>		Inspection costs avoided
252.00	HWAAs	HWAA set up assumes 4 HWAAs per CAU (at 63 CAUs and 473 CASs)
		Reduction in the number of drums to be staged at each HWAA under new process is assumed to reduce the size of the HWAA by 1/2 and the time to build the HWAA by 1 hour per HWAA
1.00	Hour	Labor to construct HWAA consists of 2 crew @ \$60.51 each, and one supervisor
\$60.51	per hour	@ \$102.66
\$102.66	per hour	Labor cost to construct larger HWAAs avoided
<u>\$56,367.36</u>		
0.50	Hour	Field documentation is assumed to be reduced by 1/2 hour per day, due to 1/2 the amount of drums to document, per HWAA (at 252 HWAAs estimated)
252.00	HWAAs	Time in the field for an average CAU is assumed to be 2 weeks (10 days)
10.00	days	Waste handler labor cost
\$60.51	per hour	Field documentation costs avoided
<u>\$76,242.60</u>		
\$25.00	per HWAA	Miscellaneous field supply costs avoided (tamper indicating devices, waste tracking tags, stergo pads, etc.)
252.00		Number of HWAAs estimated
<u>\$6,300.00</u>		Supply costs avoided
12.00	Hours	Reduced hours for analytical data review by environmental compliance and review of field documentation of associated drums, data table creation
\$75.00	per hour	At 63 CAUs
63.00		Cost avoided for evaluation by regulatory support department
<u>\$56,700.00</u>		
63.00	CAUs	Cost savings for preparation of the waste determination per CAU
\$75.00	per hour	Cost per waste management personnel
10.00	Hours	Reduced hours per CAU due to reduced number of drums to process
<u>\$47,250.00</u>		Cost avoided
<u>\$1,406,919.66</u>		Total estimated life-cycle cost savings