

FAC 8312 INDUSTRIAL WASTE TREATMENT

FY24 SUC: \$184.03 / KG
Source: Calculated using R.S. Means CostWorks 2023 Qtr 4 component prices

FAC 8312 INDUSTRIAL WASTE TREATMENT

SUC \$184.03

Release 2023 Qtr 4
Zip Code Prefix 222
Type MR

UM KG
Design Life 50
Average Size 330.221795

Adjusted Occurrences are the occurrences remaining after subtracting Repair/Replacement Overlaps. Overlap reduction removes a repair when it occurs the same year as a replacement.

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Replace rainwater sump pump / motor assembly	20	2.00 Ea.	\$1,279.74	\$1,514.61	2.5000	2	2	\$3,029.21	\$3,029.21
General maintenance pipe & fittings, industrial gas	2	12.00 M.L.F.	\$463.72	\$580.50	25.0000	25	25	\$14,512.52	\$14,512.52
Check and adjust 2 H.P. compressor	1	2.00 Ea.	\$178.06	\$222.90	50.0000	50	50	\$11,145.08	\$11,145.08
Repair feed water supply pump	15	4.00 Ea.	\$23,860.78	\$27,453.13	3.3333	3	3	\$82,359.39	\$82,359.39
Repair deaerator	10	1.00 Ea.	\$77.82	\$97.42	5.0000	5	5	\$487.11	\$487.11
Replace deaerator	20	1.00 Ea.	\$53,575.39	\$62,555.59	2.5000	2	2	\$125,111.18	\$125,111.18
Clean separator strainer	10	4.00 Ea.	\$3,112.95	\$3,896.88	5.0000	5	5	\$19,484.40	\$19,484.40
Replace separator	20	2.00 Ea.	\$177,815.71	\$203,160.21	2.5000	2	2	\$406,320.41	\$406,320.41
Repair flash tank 24 gallon	5	1.00 Ea.	\$461.58	\$577.81	10.0000	10	10	\$5,778.13	\$5,778.13
Repair condensate meter	15	2.00 Ea.	\$3,082.13	\$3,576.29	3.3333	3	3	\$10,728.86	\$10,728.86
Replace flanged steel pipe and fittings, 6"	75	240.00 L.F.	\$64,132.00	\$76,551.63	0.6667	0	0	\$0.00	\$0.00
Repack gate valve gland, 2" - 3" valves	10	4.00 Ea.	\$155.68	\$186.31	5.0000	5	5	\$931.54	\$931.54
Replace gate valve, partial, 2" - 3" valves	20	4.00 Ea.	\$8,492.95	\$9,719.11	2.5000	2	2	\$19,438.22	\$19,438.22
Repack gate valve gland, 8" - 12" valves	5	4.00 Ea.	\$718.65	\$873.66	10.0000	10	10	\$8,736.56	\$8,736.56
Replace drain valve, 3/4" valves	20	14.00 Ea.	\$1,131.12	\$1,365.58	2.5000	2	2	\$2,731.17	\$2,731.17
Repair circulator pump, 1 H.P.	5	4.00 Ea.	\$414.80	\$489.34	10.0000	10	7	\$4,893.36	\$3,425.35
Replace circulator. pump, 1 H.P.	15	4.00 Ea.	\$22,531.31	\$25,853.13	3.3333	3	3	\$77,559.39	\$77,559.39
Refill expansion tank	5	2.00 Ea.	\$31.13	\$38.97	10.0000	10	10	\$389.69	\$389.69
Repair switchboard meter	10	2.00 Ea.	\$2,437.24	\$2,868.25	5.0000	5	5	\$14,341.24	\$14,341.24
Maintenance and repair motor starter, up to 600 V	5	4.00 Ea.	\$1,051.28	\$1,277.98	10.0000	10	10	\$12,779.77	\$12,779.77
Maintenance and inspection lighting panel, indoor	3	2.00 Ea.	\$84.69	\$106.10	16.6667	16	16	\$1,697.64	\$1,697.64
Replace load center, 100 A	20	2.00 Ea.	\$2,362.06	\$2,881.07	2.5000	2	2	\$5,762.14	\$5,762.14
Repair failed breaker, molded case, 600 V, 3 pole	10	4.00 Ea.	\$1,454.30	\$1,735.96	5.0000	5	5	\$8,679.78	\$8,679.78
Maintenance and inspection circuit breaker, molded case, 600 V, 3 pole	0.33	4.00 Ea.	\$136.51	\$171.03	151.5152	151	151	\$25,825.61	\$25,825.61
Maintenance and repair safety switch, 3 pole safety switch, heavy duty	8	4.00 Ea.	\$169.38	\$212.20	6.2500	6	6	\$1,273.23	\$1,273.23
Repair smoke detector	10	4.00 Ea.	\$232.04	\$287.33	5.0000	5	5	\$1,436.65	\$1,436.65
Repair heat detector	10	4.00 Ea.	\$250.41	\$308.21	5.0000	5	5	\$1,541.04	\$1,541.04
Check and repair manual pull station	10	2.00 Ea.	\$179.77	\$221.49	5.0000	5	5	\$1,107.47	\$1,107.47
Maintenance and repair exit light	20	2.00 Ea.	\$76.98	\$95.34	2.5000	2	2	\$190.68	\$190.68
Replace lighting fixture exit light	20	2.00 Ea.	\$352.13	\$427.01	2.5000	2	2	\$854.03	\$854.03
Maintenance and repair voice/data outlet	10	1.00 Ea.	\$54.32	\$67.84	5.0000	5	5	\$339.21	\$339.21
Remove and replace 50 HP pump motor	25	6.00 Ea.	\$54,093.71	\$61,799.20	2.0000	2	2	\$123,598.40	\$123,598.40
Remove and replace steel guard rail	7	14.00 L.F.	\$979.82	\$1,137.72	7.1429	7	7	\$7,964.03	\$7,964.03

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Prepare & paint 100K gal. ground level water stor tank, 30' dia x 19' tall	10	1.00 Ea.	\$33,314.80	\$39,778.27	5.0000	5	5	\$198,891.35	\$198,891.35
Replace 2 H.P. compressor	25	2.00 Ea.	\$9,345.69	\$10,844.44	2.0000	2	2	\$21,688.88	\$21,688.88
Replace 275 gallon fuel oil storage tank	30	2.00 Ea.	\$5,048.27	\$5,837.56	1.6667	1	1	\$5,837.56	\$5,837.56
Preventive maintenance oil filter	1	1.00 Ea.	\$7.09	\$8.52	50.0000	50	50	\$425.89	\$425.89
Replace oil filter housing	30	1.00 Ea.	\$70.87	\$85.18	1.6667	1	1	\$85.18	\$85.18
Minor repairs to concrete floor unfinished	15	240.00 S.F.	\$9,152.12	\$11,168.86	3.3333	3	3	\$33,506.58	\$33,506.58
Repair metal stairs	15	350.00 S.F.	\$25,258.60	\$29,206.09	3.3333	3	3	\$87,618.26	\$87,618.26
Replace metal hand rail	30	80.00 L.F.	\$4,843.22	\$5,629.94	1.6667	1	1	\$5,629.94	\$5,629.94
Metal floor grating repairs - (2% of grating)	10	64.00 S.F.	\$2,122.05	\$2,557.32	5.0000	5	5	\$12,786.62	\$12,786.62
Unclog main drain pipe & fittings, cast iron	10	2.00 Ea.	\$97.68	\$122.28	5.0000	5	5	\$611.41	\$611.41
Unclog 4" - 12" diameter main drain per L.F.	10	4.00 L.F.	\$15.97	\$20.00	5.0000	5	5	\$99.98	\$99.98
Insp/chk pump/mtr oper, lub, chk align, rainwater sump pump	1	2.00 Ea.	\$25.12	\$31.44	50.0000	50	50	\$1,572.19	\$1,572.19
Repair boiler, gas, 250 MBH	7	1.00 Ea.	\$2,758.88	\$3,222.41	7.1429	7	7	\$22,556.86	\$22,556.86
			\$517,490.52	\$600,822.10				MR Subtotal	\$1,390,869.82
								MR Per Year	\$27,817.40
								PM Total	\$32,954.30
								Subtotal	\$60,771.70
								Total Per Unit	\$184.03

FAC 8312 INDUSTRIAL WASTE TREATMENT

SUC \$184.03

Release 2023 Qtr 4

UM KG

Zip Code Prefix 222

Design Life 50

Type PM

Average Size 330.221795

Description	Qty	Labor Hours	Bare Mat	Bare Labor	Bare Equip	Bare Total	Total In-House	Total Incl OP
Valve, OS&Y, above 4", annually	8.00	1.27	\$33.11	\$68.02	\$0.00	\$101.13	\$124.84	\$150.22
Water heater, steam 2500 gal., annually	1.00	0.94	\$149.78	\$50.14	\$0.00	\$199.92	\$229.94	\$267.44
Valve, pressure relief, above 4", annualized	8.00	1.18	\$47.36	\$63.13	\$0.00	\$110.49	\$134.17	\$160.21
Valve, sediment strainer, above 4", annualized	8.00	2.50	\$47.36	\$133.94	\$0.00	\$181.30	\$226.22	\$273.50
Reverse osmosis system, annualized	4.00	14.91	\$682.40	\$774.02	\$0.00	\$1,456.42	\$1,756.87	\$2,091.44
Chlorine detector, annualized	1.00	3.20	\$185.86	\$165.62	\$0.00	\$351.48	\$419.75	\$497.31
Ejector, sewage, annualized	2.00	1.91	\$98.48	\$98.86	\$0.00	\$197.34	\$236.85	\$281.28
Ejector pump, sump type, annualized	2.00	3.30	\$98.48	\$170.69	\$0.00	\$269.17	\$330.22	\$396.20
Sewage lift, over 1 H.P., annualized	8.00	11.65	\$244.11	\$605.02	\$0.00	\$849.13	\$1,055.05	\$1,273.17
Aerator, floating, annualized	2.00	10.27	\$83.22	\$532.35	\$0.00	\$615.57	\$783.60	\$955.79
Blower, aerator, annualized	2.00	20.62	\$488.22	\$1,064.70	\$0.00	\$1,552.92	\$1,921.16	\$2,313.80
Clarifier, annualized	2.00	10.79	\$156.73	\$557.70	\$0.00	\$714.43	\$897.41	\$1,088.23
Comminutor, annualized	2.00	5.42	\$70.74	\$280.54	\$0.00	\$351.28	\$442.51	\$537.29
Filter, trickling, annualized	4.00	4.54	\$119.28	\$234.91	\$0.00	\$354.19	\$436.59	\$524.96
Grit drive, annualized	4.00	4.35	\$155.34	\$224.77	\$0.00	\$380.11	\$463.08	\$553.81
Mixer, sewage, annualized	4.00	4.50	\$67.96	\$233.22	\$0.00	\$301.18	\$377.95	\$458.11
Duplex sump, annualized	4.00	6.62	\$107.27	\$355.78	\$0.00	\$463.05	\$580.51	\$703.33
Oxygen monitor, annualized	4.00	20.00	\$1,963.28	\$1,063.84	\$0.00	\$3,027.12	\$3,542.60	\$4,156.24
Deaerator tank, annualized	2.00	3.01	\$50.60	\$191.84	\$0.00	\$242.44	\$305.05	\$370.19
Pump, boiler fuel oil, annualized	2.00	2.46	\$195.32	\$156.09	\$0.00	\$351.40	\$417.76	\$493.89
Centrifugal, over 1 HP, annualized	4.00	4.78	\$33.19	\$256.37	\$0.00	\$289.56	\$369.79	\$451.68
Heat exchanger, steam, annualized	1.00	0.92	\$23.78	\$49.27	\$0.00	\$73.05	\$90.21	\$108.56
Controls, central system, electro/pneumatic, annualized	2.00	3.84	\$338.01	\$242.42	\$0.00	\$580.42	\$686.95	\$810.38
Backflow prevention device, up to 4", annualized	2.00	0.67	\$28.03	\$41.86	\$0.00	\$69.89	\$85.25	\$102.01
Switchboard, annualized	2.00	1.40	\$7.96	\$97.94	\$0.00	\$105.90	\$136.08	\$166.66
Panelboard, 225 A and above, annualized	2.00	0.88	\$44.00	\$60.83	\$0.00	\$104.83	\$127.48	\$152.33
Motor control center, over 400 A, annualized	4.00	1.56	\$88.00	\$107.22	\$0.00	\$195.23	\$236.20	\$281.56
Fire alarm annunciator system, annualized	1.00	11.05	\$163.44	\$695.92	\$0.00	\$859.36	\$1,084.48	\$1,317.78
Manual slide gate, annualized	1.00	1.52	\$10.33	\$79.01	\$0.00	\$89.34	\$114.08	\$139.33
Storage tank, ground level, annualized	3.00	2.17	\$59.29	\$112.81	\$0.00	\$172.10	\$211.87	\$254.61
Water flow meter, turbine, annualized	4.00	2.36	\$74.90	\$121.68	\$0.00	\$196.58	\$240.57	\$288.31
Pump, metering (slurry), annualized	4.00	3.71	\$107.91	\$192.66	\$0.00	\$300.57	\$369.16	\$443.14
Turbine well, annualized	6.00	35.09	\$765.62	\$1,825.20	\$0.00	\$2,590.82	\$3,214.95	\$3,877.35
Vertical lift, over 1 H.P., annualized	8.00	11.65	\$371.72	\$605.02	\$0.00	\$976.74	\$1,195.41	\$1,432.68
Filter plant, annualized	1.00	17.46	\$45.08	\$908.38	\$0.00	\$953.45	\$1,230.47	\$1,509.75
De-ionization, annualized	2.00	8.02	\$2,219.20	\$415.74	\$0.00	\$2,634.94	\$2,981.58	\$3,439.18
Fuel oil storage tank, above ground, annualized	1.00	3.28	\$23.44	\$169.84	\$0.00	\$193.29	\$246.58	\$301.05
Cathodic protection system, annualized	2.00	2.92	\$52.15	\$166.47	\$0.00	\$218.62	\$273.77	\$331.53
						\$22,674.77	\$27,577.01	\$32,954.30

FAC 8312 INDUSTRIAL WASTE TREATMENT

Modeled Component List CostWorks Release 2023 Qtr 4

D20 Plumbing

Rainwater Sump Pump	2.0 Ea.
Compressed Air Systems, Compressors, 2 H.P.	2.0 Ea.

D30 HVAC

Deaerator	1.0 Ea.
Valves	4.0 Ea.
Circulator Pump, 1 H.P.	4.0 Ea.
Fuel Oil Storage Tank, 275 Gallon	2.0 Ea.

D50 Electrical

Load Center, 100 A, maintenance & inspection	2.0 Ea.
Load Center, 100 A, replacement	2.0 Ea.
Exit Light	2.0 Ea.

G30 Site Mechanical Utilities

Ground Level Water Storage Tank 100K Gallon	1.0 Ea.
Reverse Osmosis System, annualized	4.0 Each
Ejector Pump, annualized	2.0 Each
Sewage Lift, annualized	8.0 Each
Aerator, annualized	2.0 Each
Clarifier, annualized	2.0 Each
Comminutor, annualized	2.0 Each
Filter, annualized	4.0 Each
Grit Drive, annualized	4.0 Each
Sewage Mixer, annualized	4.0 Each
Storage Tank Ground Level, annualized	3.0 Each
Water Flow Meter, Turbine, annualized	4.0 Each
Vertical Lift, annualized	8.0 Each
Filter Plant, annualized	1.0 Each
Fuel Oil Storage Tank, annualized	1.0 Each

B10 Superstructure

Railing, Metal	80.0 L.F.
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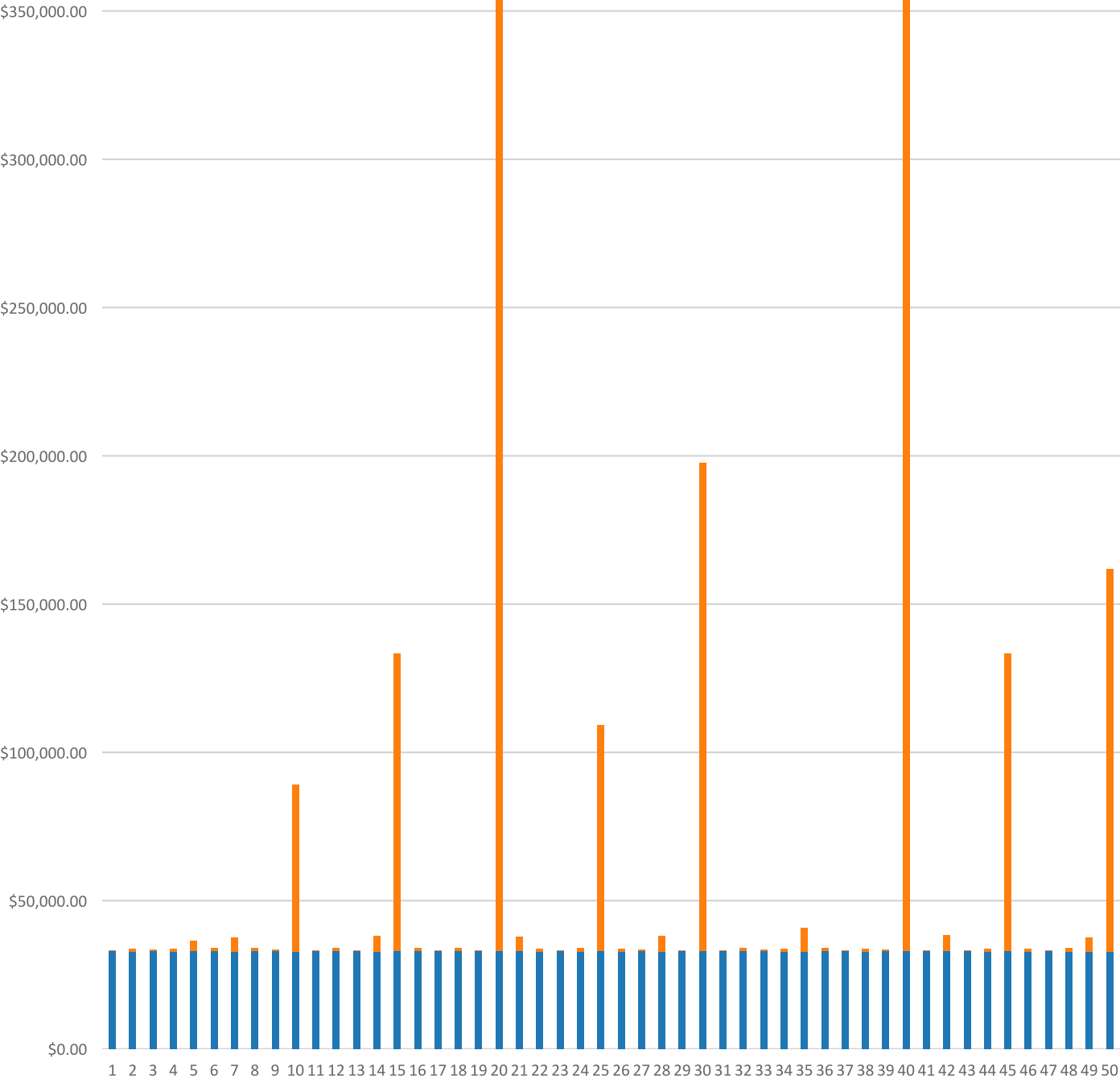
G20 Site Improvements

Gate, Manual slide, annualized	1.0 Each
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G40 Site Electrical Utilities

Cathodic Protection, annualized	2.0 Each
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FAC 8312 INDUSTRIAL WASTE TREATMENT
Sustainment by Year
CostWorks Release 2023 Qtr 4



PM Cost
MR Cost