



NAVFAC PACIFIC

RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 03 Project # RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30

DRAFT - ROM ESTIMATE - REV-04

Date: 11/30/2022

NAVFAC PACIFIC

RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 03

DRAFT - ROM ESTIMATE - REV-04

Project name RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30
Moanalua
HI 96819
USA

Labor rate table 22_Labor_Union_2022

Equipment rate table 1_RSM_Equip_2022

Report format Sorted by 'Alternative/Phase'
'Detail' summary

Factor table Hawaii-Honolulu



Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
04 ALTERNATIVE 3: CLOSURE IN PLACE - FILL W/INERT MATERIAL							
01543.305 Equipment Rental							
Boom System & ODC's - Large Tanks	14.00 tank	-	-	-	1,350,000.00 /tank	1,350,000.00 /tank	18,900,000
ODC's - Surge Tanks	4.00 tank	-	-	-	410,000.00 /tank	410,000.00 /tank	1,640,000
Equipment Rental							20,540,000
01740.013 Progress Cleaning							
Utilities & Cleaning - Large Tanks	14.00 tank	-	-	-	2,611,500.00 /tank	2,611,500.00 /tank	36,561,000
Utilities & Cleaning - Surge Tanks	4.00 tank	-	-	-	750,650.00 /tank	750,650.00 /tank	3,002,600
Progress Cleaning							39,563,600
02110.300 Hazards waste clnp/pckp/							
Hazardous W cln/pu/dspl, dumpsite disposal charge, max - demo'd 32" steel pipe/fittings/misc. - Surge Tank Infill	2,124.94 ton	-	-	900.00 /ton	-	900.00 /ton	1,912,446
Hazards waste clnp/pckp/							1,912,446
02315.100 Earthwork: Backfill							
Backfill, boring hole	1,000.00 cy	278.77 /cy	-	-	-	528.77 /cy	528,772
Earthwork: Backfill							528,772
02315.340 Earthwork: Drilling and blasting							
Drilling & blasting, deep hole method, 36" hole x 150' each Tank	1,000.00 cy	145.14 /cy	2.82 /cy	-	-	947.96 /cy	947,960
Earthwork: Drilling and blasting							947,960
03310.701 Placing concrete							
Placing concrete, concrete pump, for structural infill >24" thick - Surge Tank Infill	8,317.90 cy	122.72 /cy	-	-	-	122.72 /cy	1,020,750
Placing concrete							1,020,750
05090.900 Welding structural							
Welding, continuous fillet, 4 passes, 1/2" thick, 0.7#/L.F. - Weld shut 8' Diameter Manhole @ 190' Level	502.60 lf	83.14 /lf	1.48 /lf	-	-	309.62 /lf	155,613
Welding structural							155,613
13851.350 Tank leak detection systems							
Tank leak detection systems,, monitoring, internal, product line - Modification of lower access tunnel lines for water monitoring	20.00 ea	-	-	-	10,000.00 /ea	10,000.00 /ea	200,000
Tank leak detection systems							200,000
m3211.023 Exterior Improvements							
Top of Hill Roadway Improvement for Truck/Vehical Access (2 miles total length x 24' wide estimated)	28,157.18 sy	-	-	-	78.50 /sy	78.50 /sy	2,210,339
Exterior Improvements							2,210,339
r01511.380 Temporary Utilities							



NAVFAC PACIFIC

RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 03 Project # RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30

DRAFT - ROM ESTIMATE - REV-04

Date: 11/30/2022

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
r01511.380 Temporary Utilities							
Temporary Utilities, power/air/water/ventilation for job duration	15,840.00 lf	-	-	-	19.15 /lf	19.15 /lf	303,336
Temporary Utilities							303,336
r01543.340 General equipment rental without operators							
Rent water truck, off highway, 6000 gallon capacity (10 years at 260 days/yr)	1,825.00 day	-	-	-	-	1,392.52 /day	2,541,349
General equipment rental without operators							2,541,349
r01543.380 Marine equipment rental without operators							
Marine equipment rental;barge,800 ton,45' wide x 90' long - hauling demo'd pipe off-island - Surge Tank Infill	1,460.00 day	-	-	-	-	1,109.54 /day	1,619,928
Marine equipment rental without operators							1,619,928
r02411.346 Selective Demolition, Steel Pipe With Insulation							
Selective demolition, steel pipe with insulation, 26"-36", includes valves & fittings - Asbestos & Lead Contaminated - Surge Tank Infill	18,480.00 lf	102.66 /lf	-	-	-	126.30 /lf	2,334,031
Selective Demolition, Steel Pipe With Insulation							2,334,031
r02411.395 Selective Demo., Athletic/Playground Equipment							
Selective demolition, Tank Internal Platforms/Walkways	20.00 ea	135,504.89 /ea	-	-	-	249,999.97 /ea	4,999,999
Selective Demo., Athletic/Playground Equipment							4,999,999
r02411.927 Selective Demolition, Torch Cutting							
Selective demolition, Steel Plate installation for Tank sealing - Surge Tank Infill	4,000.00 sf	39.70 /sf	25.00 /sf	-	-	73.06 /sf	292,228
Selective Demolition, Torch Cutting							292,228
r03305.340 Concrete In Place							
Structural concrete, in place, tank infill (3000 psi), over 20 C.Y. - Surge Tank Infill	8,317.90 cy	407.96 /cy	475.00 /cy	-	-	883.46 /cy	7,348,501
Concrete In Place							7,348,501
r23212.014 Air Purging Scoop							
Tank Ventilation System - Manways/Vents & Nozzles reconfigured for infill process (See Note 1)	20.00 ea	32,658.37 /ea	67,341.63 /ea	-	-	100,000.00 /ea	2,000,000
Air Purging Scoop							2,000,000
r26050.510 Electrical Demolition							
Disconnect Tank Electrical Connections, electrical demolition, remove, including disconnecting wire & conduit terminations	20.00 ea	12,985.76 /ea	125.00 /ea	-	-	13,110.76 /ea	262,215
Electrical Demolition							262,215
r31232.315 Borrow, Loading And/Or Spreading							



NAVFAC PACIFIC

RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 03 Project # RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30

DRAFT - ROM ESTIMATE - REV-04

Date: 11/30/2022

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
r31232.315 Borrow, Loading And/Or Spreading							
Borrow, infill material only, bank run gravel	1,644,325.00 ton	-	70.00 /ton	-	-	70.00 /ton	115,102,750
Borrow, bank run gravel, haul and infill tank	1,644,325.00 ton	29.86 /ton	-	-	-	37.42 /ton	61,538,741
Borrow, Loading And/Or Spreading							176,641,491
r33491.310 Storm Drainage Manholes, Frames & Covers							
Boring Location, Frame and Cover	20.00 ea	7,810.61 /ea	16,187.51 /ea	-	-	25,000.03 /ea	500,001
Storm Drainage Manholes, Frames & Covers							500,001
r41212.316 Container Piece Material Conveyors							
Conveyors, material handling, horizontal belt, center drive & takeup, 60 fpm, 24" belt, 61.5' length - Estimate assumes a dump site off the mountal adjacent to the quarry	50.00 ea	7,475.23 /ea	17,524.77 /ea	-	-	25,000.00 /ea	1,250,000
Container Piece Material Conveyors							1,250,000
04 ALTERNATIVE 3: CLOSURE IN PLACE - FILL W/INERT MATERIAL	1.00 LS	60,181,258.10 /LS	121,706,637.40 /LS	1,912,446.00 /LS	62,817,274.94 /LS	267,172,559.95 /LS	267,172,560

Notes:

1. Air Purging Scoop Tank Ventilation System: Red Hill Tank Closure Plan Document indicated that fresh air would be required during the closure of the tanks. Jacobs estimators used this line item to include cost for using the air-purging scoop tank ventilation system to be repurposed for fresh air intake during closure.



NAVFAC PACIFIC

RED HILL, HI - UG TANK CLOSURE - ALTERNATIVE 03 Project # RED HILL HI - UG TANK CLOSURE OPTIONS - REV-06 - 2022-11-30

DRAFT - ROM ESTIMATE - REV-04

Date: 11/30/2022

Partial Totals

Description	Amount	Totals	Hours	Rate	Cost / Unit	% of Total
Labor	60,181,258		883,740.789 hrs			13.59%
Material	121,706,637					27.48%
Subcontract	1,912,446					0.43%
Equipment	20,554,944		165,409.179 hrs			4.64%
Other	62,817,275					14.19%
Subtotal Raw Costs	267,172,560	267,172,560				60.33% 60.33%
Material Sales & Use Tax - %	5,734,817			4.712 %		1.30%
Construction Equip Tax - %	968,549			4.712 %		0.22%
Total Taxes	6,703,366	273,875,926				1.51% 61.85%
Location Adj. Factor (incl. in Estimate Detail)						
Security/Site Access Premium	27,387,593			10.000 %		6.18%
Subtotal Adj. Factors	27,387,593	301,263,519				6.18% 68.03%
Subtotal Subcontractor I,OH&P	21,065,690	322,329,209				4.76% 72.79%
Contractor Contingency						
Subtotal Contingency		322,329,209				72.79%
Total Cost To Prime Contractor		322,329,209				72.79%
General Conditions	32,232,921			10.000 %		7.28%
In-Tunnel Train Logistics	6,446,584			2.000 %		1.46%
Mobilization/Demobilization (2.50%/2.50%)	16,116,460			5.000 %		3.64%
Subtotal Indirect Costs	54,795,965	377,125,174				12.37% 85.16%
Prime Contractor Home Office OH	15,085,007			4.000 %		3.41%
Prime Contractor Profit	37,712,517			10.000 %		8.52%
Bonds & Insurance	12,897,681			3.000 %		2.91%
Subtotal OH&P	65,695,205	442,820,379				14.84% 100.00%
Architectural/Engineering Fees						
PMCM Fees						
Total A/E & PMCM Fees		442,820,379				100.00%
Design Contingency						
Subtotal Contingency		442,820,379				100.00%
Escalation						
Subtotal Escalation		442,820,379				100.00%
Total Prime Contractor Costs		442,820,379				100.00%
Mech Owner-Provided Equip						
Elec Owner-Provided Equip						
Total Owner-Provided Equipment		442,820,379				100.00%
Total Contractor Costs w/ OFCI		442,820,379				100.00%
Total Construction Cost		442,820,379				100.00%
Partial Total		442,820,379				