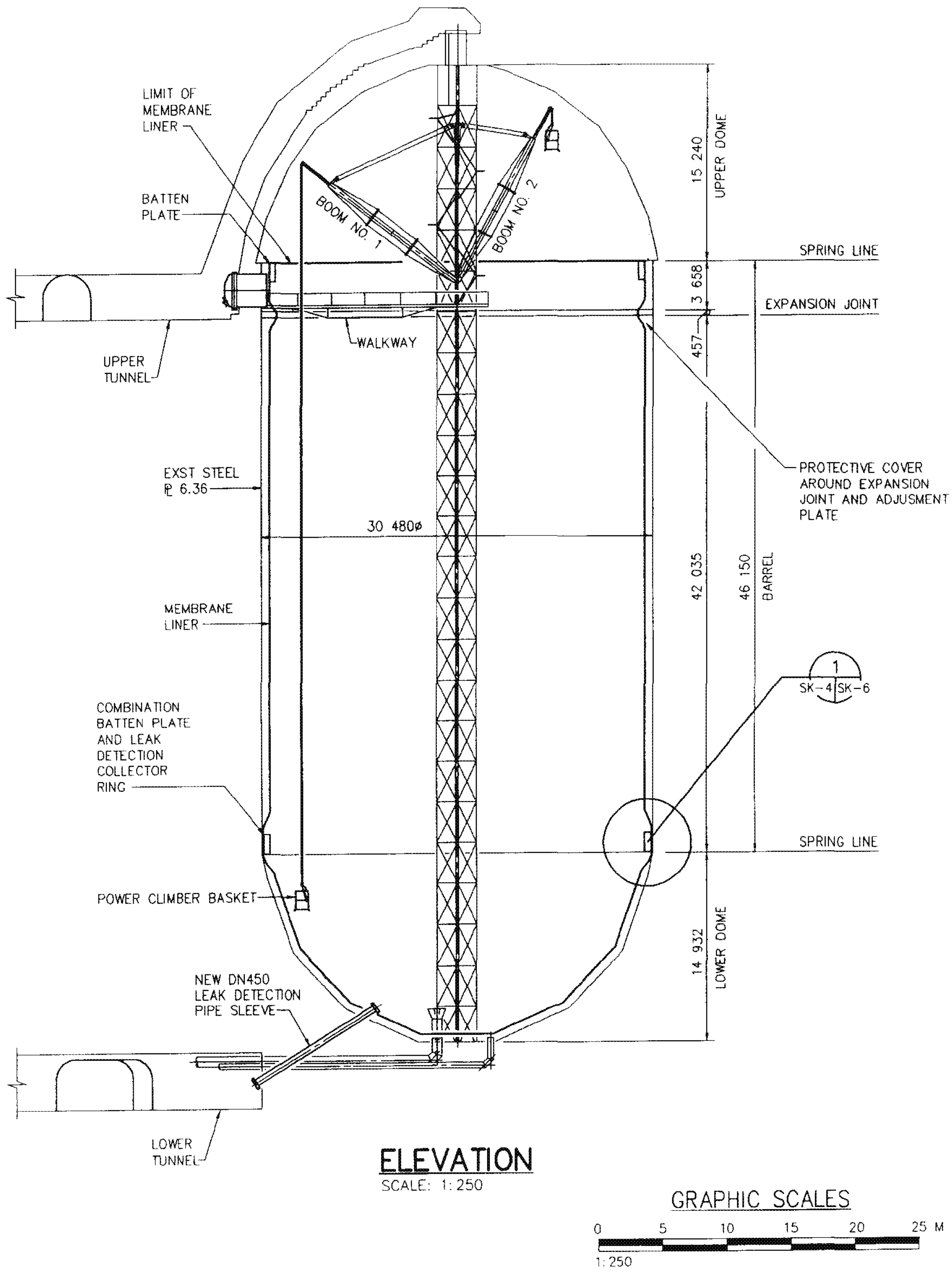
# TANK REPAIR CONCEPT: INTERNAL BLADDER TYPE LINER




ENTERPRISE ENGINEERING, INC

YARMOUTH, ME ANCHORAGE, AK

TANK 19, REDHILL

FISC PEARL, HAWAII

# CONCEPT 2: BLADDER SYSTEM

| PROJ. NO. | DWG. NO. | REV. |
|---|---|---|
| 98-2325 | | 0 |

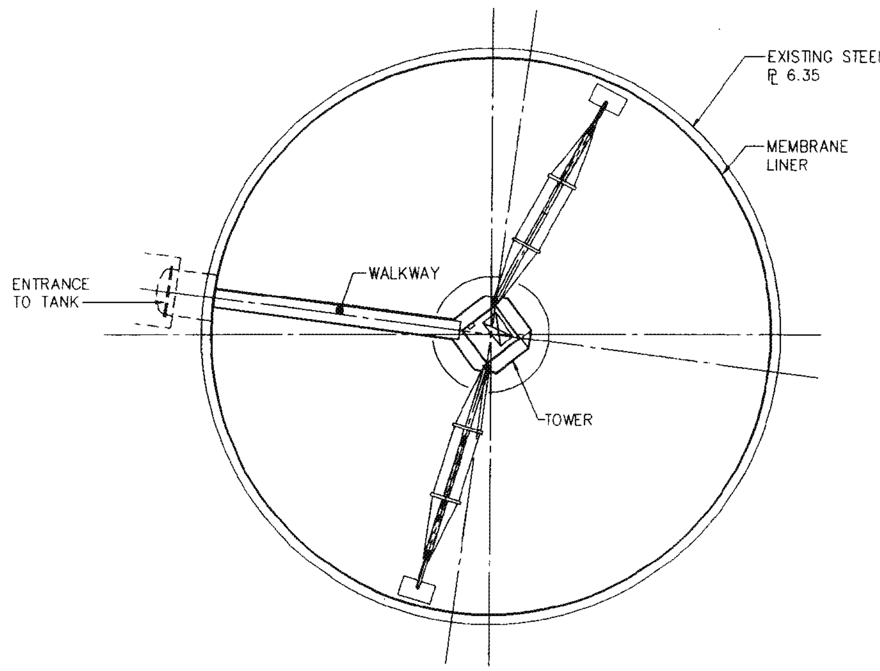
| DRN. | CHD. | DATE | SHT. |
|---|---|---|---|
| GQV | SJD | 5/21/98 | SK-4 |

DATE PLOTTED: 9 MAY 98

CAD FILE NO: 2325sk4



RDHLCC0027558
BWS031098




PLAN
SCALE: 1:250

GRAPHIC SCALES

0 5 10 15 20 25 M

1:250

TANK 19, REDHILL

FISC PEARL, HAWAII

CONCEPT 2:
BLADDER SYSTEM

ENTERPRISE
ENGINEERING, INC
YARMOUTH, ME
ANCHORAGE, AK

| PROJ. NO. | DWG. NO. | REV. |
|---|---|---|
| 98-2325 | | 0 |

| DRN. | CHD. | DATE | SHT. |
|---|---|---|---|
| GQV | SJD | 5/21/98 | SK-5 |

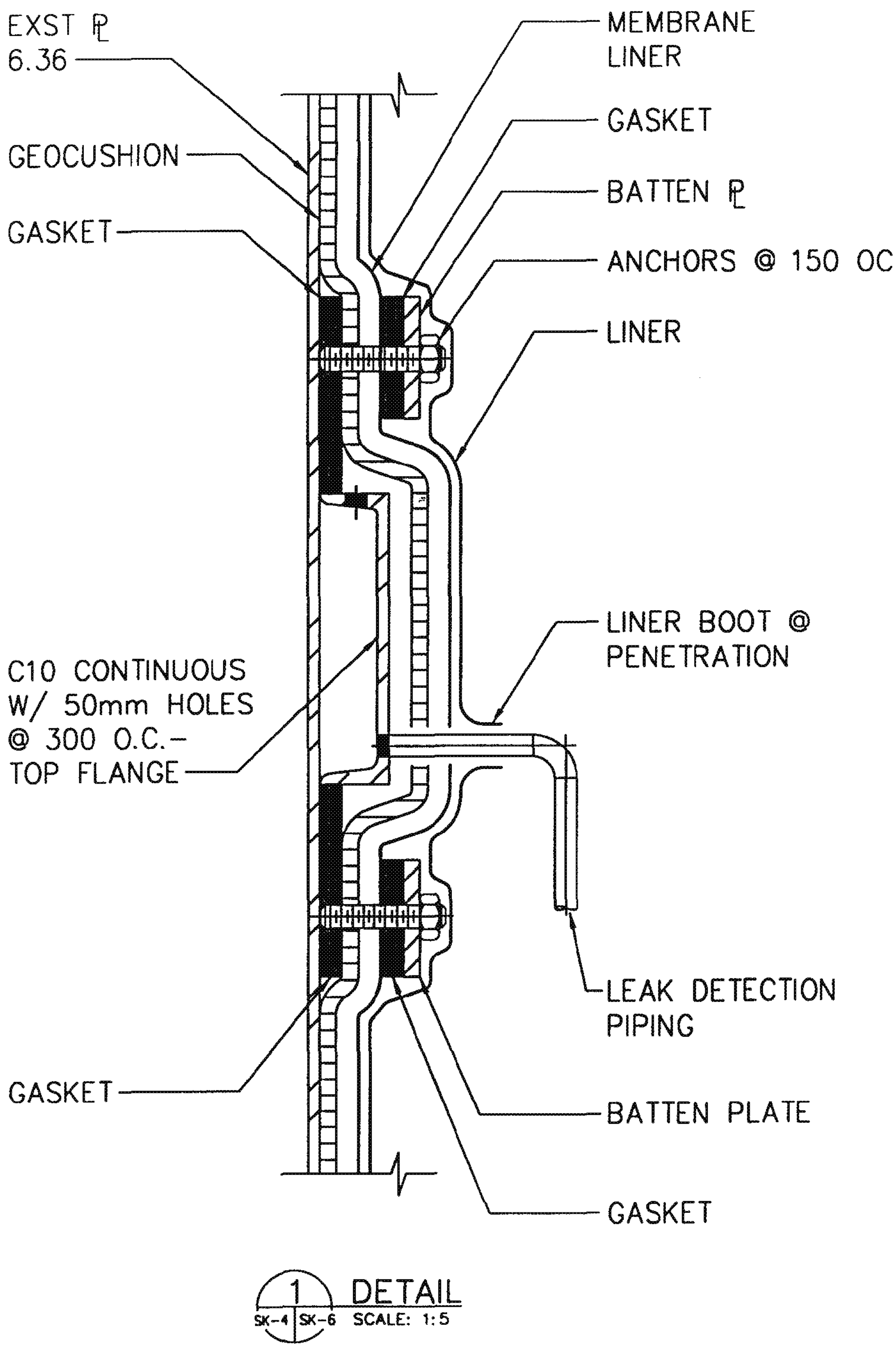
DATE PLOTTED: 9 MAY 98

CAD FILE NO: 2325sk5

RDHLCC0027559



BWS031099




1 DETAIL
SK-4 SK-6 SCALE: 1:5

ENTERPRISE ENGINEERING, INC
YARMOUTH, ME ANCHORAGE, AK

TANK 19, REDHILL FISC PEARL, HAWAII

CONCEPT 2:
BLADDER SYSTEM DETAIL

| PROJ. NO. | DWG. NO. | REV. | |
|---|---|---|---|
| 98-2325 | | 0 | |
| DRN. | CHD. SJD | DATE 5/21/98 | SHT. SK-6 |

DATE PLOTTED: 9 MAY 98 CAD FILE NO: 2325sk6

RDHLCC0027560

 BWS031100

# INTERNAL BLADDER TYPE LINER
# COST ESTIMATE - BASE BID

**SYSTEM REPORT**
SUBMITTAL: FACD
SOFTWARE VERSION: SUCCESS 2.21
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACT: PRL 98-9
DATABASE USED: EEI
PRINTING DATE: 05/27/1998
Page No. 1
ESTIMATE NAMERHT19-bl

PROJECT: Red Hill Tank 19 - Bladder System
LOCATION:FISC Pearl Harbor, HI
ESTIMATOR:EEI
PROJECT SIZE: 1 LS
CONSTRUCTION FUNDS AVAILABLE:

CAT CODE: N/A
UIC:
PROJECT #: PRL 98-9
DATE OF ESTIMATE: 5/26/98
BID DATE: 4/99

| WBS CODE | DESCRIPTION | COST/WBS BASED ON 1 LS | SYSTEM UNITS/ U/M | COST/WBS UNIT | TOTAL MARKED UP COSTS MATL | LABOR | EQUIP | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | **TOTAL ESTIMATED CONTRACT (ROUNDED)** | | | | | | | **2,339,000** |
| | | | *****PROJECT SUBTOTALS**** | | 542,641 | 1,368,311 | 427,705 | 2,338,657 |
| | ***DISTRIBUTED COSTS*** *This level is distributed* | **208620.00/LS** | **1 LS** | | **7,800** | **174,980** | **25,840** | **208,620** |
| **0001** | **-FIELD OVERHEAD** *This level is distributed* | **208620.00/LS** | **1 LS** | | **7,800** | **174,980** | **25,840** | **208,620** |
| | ***BASE BID*** | **2338656.81/LS** | **1 LS** | | **542,641** | **1,368,311** | **427,705** | **2,338,657** |
| **10** | **-Set-up, Prep and Demolition** | **629458.31/LS** | **1 LS** | | **133,091** | **391,853** | **104,514** | **629,458** |
| 1010 | MAINTENANCE | 563432.31/LS | 1 LS | | 133,089 | 325,831 | 104,513 | 563,432 |
| 1011 | REPAIR | 66025.99/LS | 1 LS | | 2 | 66,023 | 2 | 66,026 |
| **11** | **-Basic Tank Repairs & Appurtanen** | **536017.60/LS** | **1 LS** | | **105,927** | **425,012** | **5,079** | **536,018** |
| 1110 | MAINTENANCE | 278179.26/LS | 1 LS | | 13,875 | 264,305 | 0 | 278,179 |
| 1111 | REPAIR | 217490.78/LS | 1 LS | | 82,251 | 130,161 | 5,079 | 217,491 |
| 1112 | MINOR CONSTRUCTION | 40347.55/LS | 1 LS | | 9,801 | 30,546 | 0 | 40,348 |
| **12** | **-Bladder System - Barrel** | **402870.92/LS** | **1 LS** | | **123,641** | **66,786** | **212,444** | **402,871** |
| 1211 | REPAIR | 402870.92/LS | 1 LS | | 123,641 | 66,786 | 212,444 | 402,871 |
| **13** | **-Bladder System - Lower Dome** | **115652.82/LS** | **1 LS** | | **33,293** | **29,249** | **53,111** | **115,653** |
| 1311 | REPAIR | 115652.82/LS | 1 LS | | 33,293 | 29,249 | 53,111 | 115,653 |
| **14** | **-Tell-tale System** | **305951.16/LS** | **1 LS** | | **47,656** | **248,105** | **10,191** | **305,951** |
| 1411 | REPAIR | 305951.16/LS | 1 LS | | 47,656 | 248,105 | 10,191 | 305,951 |
| **15** | **-Upper Dome Repairs** | **107163.13/LS** | **1 LS** | | **9,898** | **72,294** | **24,971** | **107,163** |
| 1510 | MAINTENANCE | 107163.13/LS | 1 LS | | 9,898 | 72,294 | 24,971 | 107,163 |
| **16** | **-Existing Tank Inspection** | **16203.03/LS** | **1 LS** | | **0** | **16,203** | **0** | **16,203** |
| 1610 | MAINTENANCE | 16203.03/LS | 1 LS | | 0 | 16,203 | 0 | 16,203 |
| **17** | **-Tank Piping - Lining** | **225339.82/LS** | **1 LS** | | **89,135** | **118,809** | **17,396** | **225,340** |
| 1710 | MAINTENANCE | 225339.82/LS | 1 LS | | 89,135 | 118,809 | 17,396 | 225,340 |

SUMMARY REPORT
SUBMITTAL: FACD
SOFTWARE VERSION: SUCCESS 2.21
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACT: PRL 98-9
DATABASE USED: EEI
PRINTING DATE: 05/27/1998

ESTIMATE NAMERHT19-bl

PROJECT: Red Hill Tank 19 - Bladder System
LOCATION:FISC Pearl Harbor, HI
ESTIMATOR:EEI
PROJECT SIZE: 1 LS
CONSTRUCTION FUNDS AVAILABLE:

CAT CODE: N/A
UIC:
PROJECT #: PRL 98-9
DATE OF ESTIMATE: 5/26/98
BID DATE: 4/99

| WBS CODE | DESCRIPTION | COST/WBS BASED ON 1 LS | SYSTEM UNITS/ U/M | COST/WBS UNIT | TOTAL MARKED UP COSTS MATL | LABOR | EQUIP | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | **TOTAL ESTIMATED CONTRACT (ROUNDED)** | | | | | | | **2,339,000** |
| | | | *****PROJECT SUBTOTALS**** | | 542,641 | 1,368,311 | 427,705 | 2,338,657 |
| | ***DISTRIBUTED COSTS*** | 208620.00/LS | 1 LS | | 7,800 | 174,980 | 25,840 | 208,620 |
| | ***This level is distributed*** | | | | | | | |
| 0001 | ---FIELD OVERHEAD | 208620.00/LS | 1 LS | | 7,800 | 174,980 | 25,840 | 208,620 |
| | ***This level is distributed*** | | | | | | | |
| | ***BASE BID*** | 2338656.81/LS | 1 LS | | 542,641 | 1,368,311 | 427,705 | 2,338,657 |
| 10 | ---Set-up, Prep and Demolition | 629458.31/LS | 1 LS | | 133,091 | 391,853 | 104,514 | 629,458 |
| 11 | ---Basic Tank Repairs & Appurt | 536017.60/LS | 1 LS | | 105,927 | 425,012 | 5,079 | 536,018 |
| 12 | ---Bladder System - Barrel | 402870.92/LS | 1 LS | | 123,641 | 66,786 | 212,444 | 402,871 |
| 13 | ---Bladder System - Lower Dome | 115652.82/LS | 1 LS | | 33,293 | 29,249 | 53,111 | 115,653 |
| 14 | ---Tell-tale System | 305951.16/LS | 1 LS | | 47,656 | 248,105 | 10,191 | 305,951 |
| 15 | ---Upper Dome Repairs | 107163.13/LS | 1 LS | | 9,898 | 72,294 | 24,971 | 107,163 |
| 16 | ---Existing Tank Inspection | 16203.03/LS | 1 LS | | 0 | 16,203 | 0 | 16,203 |
| 17 | ---Tank Piping - Lining | 225339.82/LS | 1 LS | | 89,135 | 118,809 | 17,396 | 225,340 |

**CONTRACTOR MARKUP REPORT**
SUBMITTAL: FACD
SOFTWARE VERSION: SUCCESS 2.1
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACT: PRL 98-9
DATABASE USED :EEI
PRINTING DATE :05/27/98
PAGE NUMBER : 1
ESTIMATE NAME : RHT19-bladde

PROJECT: Red Hill Tank 19 - Bladder System
LOCATION: FISC Pearl Harbor, HI
ESTIMATOR: EEI
PROJECT SIZE: 1.00LS
AUTHORIZED CONSTRUCTION FUNDS:

CAT CODE:N/A
UIC:
PROJECT #:
DATE OF ESTIMATE:5/26/98
BID DATE: 4/99

| CONTRACTOR | DESCRIPTION | MATERIAL | LABOR | EQUIPMENT |
|---|---|---|---|---|
| P | **Prime Contractor** | | | |
| | WORKER'S COMPENSATION/UNEMPL/SOC. SEC TAXES | 0.00 | 45.00 | 0.00 |
| | HAWAII ADJMENT FACTOR | 0.00 | 31.00 | 0.00 |
| | PRIME OVERHEAD | 10.00 | 10.00 | 10.00 |
| | PRIME PROFIT | 6.00 | 6.00 | 6.00 |
| | PRIME HOME OFFICE | 3.00 | 3.00 | 3.00 |
| | BOND | 2.00 | 2.00 | 2.00 |
| | ESCALATION | 1.02 | 1.02 | 1.02 |
| | ESTIMATING CONTINGENCY | 5.00 | 5.00 | 5.00 |
| | HI GET | 4.17 | 4.17 | 4.17 |
| | SALES TAX | 0.50 | 0.00 | 0.50 |
| | **COMPOSITE MARKUPS FOR P** | | | |
| | **MATERIAL COMPOSITE MARKUP** | **1.360** | | |
| | **LABOR COMPOSITE MARKUP** | **2.571** | | |
| | **EQUIPMENT COMPOSITE MARKUP** | **1.360** | | |
| S | **Subcontractors** | | | |
| | SUBCONTRACTOR OVERHEAD | 10.00 | 10.00 | 10.00 |
| | SUBCONTRACTOR PROFIT | 6.00 | 6.00 | 6.00 |
| | SUBCONTRACTOR HOME OFFICE | 3.00 | 3.00 | 3.00 |
| | **COMPOSITE MARKUPS FOR S** | | | |
| | **MATERIAL COMPOSITE MARKUP** | **1.201** | | |
| | **LABOR COMPOSITE MARKUP** | **1.201** | | |
| | **EQUIPMENT COMPOSITE MARKUP** | **1.201** | | |

PROJECT: Red Hill Tank 19 - Bladder System
LOCATION: FISC Pearl Harbor, HI
ESTIMATOR: EEI
PROJECT SIZE: 1 LS
AUTHORIZED CONSTRUCTION FUNDS:

CAT CODE: N/A
UIC:
PROJECT #: PRL 98-9
DATE OF ESTIMATE: 5/26/98
BID DATE: 4/99

DETAIL REPORT
UNBURDENED LINE ITEMS
FACD
SOFTWARE VERSION: SUCCESS 3.0
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACTPRL 98-9

DATABASE USED: EEI
PRINTING DATE:05/27/1998



| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **00** | | | | | | | |
| **0001** | | | | | | | |
| | **0001 FIELD OVERHEAD** *This system is distributed* | | | | | | |
| 010000002 | Project Superintendent | 7.00 | mos | 0 | 5940<br>41,580 | 0 | 5940<br>41,580 |
| 010000002 | Project Quality Control | 7.00 | mos | 0 | 5000<br>35,000 | 0 | 5000<br>35,000 |
| 010000002 | Safety | 5.00 | mos | 0 | 4800<br>24,000 | 0 | 4800<br>24,000 |
| 010000002 | Equipment Operator (crane, fork truck) | 5.00 | mos | 0 | 4800<br>24,000 | 0 | 4800<br>24,000 |
| 010000002 | Boom Operator | 5.00 | mos | 0 | 5300<br>26,500 | 0 | 5300<br>26,500 |
| 010000001 | Pick-Up Truck #1 | 5.00 | mos | 0 | 0 | 720<br>3,600 | 720<br>3,600 |
| 010000001 | Pick-Up Truck #2 | 5.00 | mos | 0 | 0 | 720<br>3,600 | 720<br>3,600 |
| 010000001 | Skid Steer/fork lift #1 | 5.00 | mos | 0 | 0 | 2530<br>12,650 | 2530<br>12,650 |
| 010000001 | Welding Equipment #1 | 5.00 | mos | 0 | 0 | 600<br>3,000 | 600<br>3,000 |
| 010000003 | Contractor Office | 5.00 | mos | 0 | 0 | 181<br>905 | 181<br>905 |
| 010000003 | Tool & Storage Shed | 5.00 | mos | 0 | 0 | 90<br>450 | 90<br>450 |
| 010000003 | Temporary Toilets | 5.00 | mos | 0 | 0 | 80<br>400 | 80<br>400 |
| 010000003 | Small Tools | 5.00 | mos | 750<br>3,750 | 0 | 0 | 750<br>3,750 |
| 010000003 | Construction Schedule | 1.00 | ls | 0 | 1200<br>1,200 | 0 | 1200<br>1,200 |
| 010000003 | Progress Sched | 5.00 | mos | 0 | 240<br>1,200 | 0 | 240<br>1,200 |
| 010000004 | Photographs | 5.00 | mos | 50<br>250 | 0 | 0 | 50<br>250 |
| 010000004 | Submittals | 2.00 | wk | 0 | 1500<br>3,000 | 0 | 1500<br>3,000 |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| | **0001 FIELD OVERHEAD** | | | | | | |
| | *This system is distributed* | | | | | | |
| 010000004 | | 2.00 | wk | 400 | 1500 | | 1900 |
| As-Built Drawings | | | | 800 | 3,000 | 0 | 3,800 |
| 010000006 | | 5.00 | mos | | | 247 | 247 |
| Communications: Telephone,Radios | | | | 0 | 0 | 1,235 | 1,235 |
| 010000014 | | 5.00 | mos | | 300 | | 300 |
| General Clean-up | | | | 0 | 1,500 | 0 | 1,500 |
| 010000014 | | 1.00 | LS | 3000 | 7000 | | 10000 |
| Mobilization | | | | 3,000 | 7,000 | 0 | 10,000 |
| 010000014 | | 1.00 | LS | | 7000 | | 7000 |
| Demobilization | | | | 0 | 7,000 | 0 | 7,000 |
| **TOTAL 0001 FIELD OVERHEAD** | **1.00 LS** | | | **7,800** | **174,980** | **25,840** | **208,620** |

| WBS CODE / DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|
| **10** | | | | | | |
| **1010** | | | | | | |
| **101010** | | | | | | |
| **101010001 General** | | | | | | |
| Subcontractor: S | 1.00 | ls | 6000 | 9600 | 4500 | 20100 |
| Temp. monorail in tank (S12x35 monorail + 2 hoists) | | | 6,000 | 9,600 | 4,500 | 20,100 |
| Subcontractor: S | 10.00 | mos | | | 1025 | 1025 |
| Temp.swing staging inside tank (rented air powered, to 300' high, 2 staging) | | | 0 | 0 | 10,250 | 10,250 |
| Subcontractor: S | 2.00 | ea | | 500 | | 500 |
| Certify Booms | | | 0 | 1,000 | 0 | 1,000 |
| Subcontractor: S | 2.00 | ea | | 500 | | 500 |
| Certify Swing Staging | | | 0 | 1,000 | 0 | 1,000 |
| Subcontractor: S | 1.00 | ls | 13800 | 7393 | | 21193 |
| Temp power to Const Trailers | | | 13,800 | 7,393 | 0 | 21,193 |
| Subcontractor: S | 1.00 | ls | 10357 | 6071 | | 16428 |
| Elec - Upper Tunnel - Weld. elec. lights, small tools | | | 10,357 | 6,071 | 0 | 16,428 |
| Subcontractor: S | 1.00 | ls | 14964 | 4321 | | 19285 |
| Elec - Lower Tunnel - Weld, elec, lights, small tools | | | 14,964 | 4,321 | 0 | 19,285 |
| 02220 | 2.00 | md | | 240 | 50 | 290 |
| Remove Exist. Aboveground Air Supply Fan at top of tank | | | 0 | 480 | 100 | 580 |
| 02220 | 2.00 | md | | 240 | 50 | 290 |
| Remove ductwork, Lower Tunnel | | | 0 | 480 | 100 | 580 |
| | 40.00 | md | | 240 | | 240 |
| Remove Hoist Sys. / swing staging (4per. @ 30/hr x 8hr/day x 10 day) | | | 0 | 9,600 | 0 | 9,600 |
| | 8.00 | md | | 240 | | 240 |
| Remove Lighting in Tank (2per. @ 30/hr x 8hr/day x 4 day) | | | 0 | 1,920 | 0 | 1,920 |
| | 20.00 | md | | 240 | | 240 |
| Water Wash Shell & Tower (4per. @ 30/hr x 8hr/day x 5 day) | | | 0 | 4,800 | 0 | 4,800 |
| 1 Subcontractor: S | 5.00 | day | | 750 | | 750 |
| Marine Chemist - Evaluation | | | 0 | 3,750 | 0 | 3,750 |
| 1 Subcontractor: S | 3.00 | day | | 750 | | 750 |
| Marine Chemist - Safety Pan | | | 0 | 2,250 | 0 | 2,250 |
| Subtotal Direct Costs | | | 45,121 | 52,665 | 14,950 | 112,736 |
| Subcontractor Markups | | | 9,068 | 7,112 | 2,964 | 19,145 |
| Distributions | | | 1,081 | 29,281 | 1,595 | 31,958 |
| Prime Contractor P Markups | | | 19,915 | 139,917 | 6,898 | 166,730 |
| **TOTAL 101010001 General** | **1.00** | **LS** | **75,185** | **228,975** | **26,408** | **330,568** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **101010** | | | | | | | |
| | **101010001 General** | | | | | | |
| SUBTOTAL 101010 General | | | | 45,121 | 52,665 | 14,950 | 112,736 |
| *MARKUP* | | | | *1.666* | *4.348* | *1.766* | *2.932* |
| **TOTAL 101010 General** | | | | **75,185** | **228,975** | **26,408** | **330,568** |
| **101011** | | | | | | | |
| | **101011001 Ventilation System** | | | | | | |
| 15720 | Subcontractor: S | 1.00 | ea | 14000 | 1000 | | 15000 |
| | Supply fan with filters, 19000 l/s, 100 hp motor (75 kw motor) | | | 14,000 | 1,000 | 0 | 15,000 |
| 15720 | Subcontractor: S | 1.00 | ea | 16000 | 1500 | | 17500 |
| | Exhaust fan with filters, 19000 l/s, 100 hp motor (75 kw motor) | | | 16,000 | 1,500 | 0 | 17,500 |
| 15810 | Subcontractor: S | 50.00 | m | 43 | 62 | | 105 |
| | Ductwork, 800 mm dia | | | 2,150 | 3,100 | 0 | 5,250 |
| 15810 | Subcontractor: S | 200.00 | m | 13 | 16 | | 29 |
| | Flex duct, 300 mm dia | | | 2,600 | 3,200 | 0 | 5,800 |
| | Subcontractor: S | 1.00 | ea | | 1004 | 44118 | 45122 |
| | Elec - Gen for Supply Fan | | | 0 | 1,004 | 44,118 | 45,122 |
| | Subcontractor: S | 1.00 | ea | | 11250 | | 11250 |
| | Elec - Gen Demob | | | 0 | 11,250 | 0 | 11,250 |
| Subtotal Direct Costs | | | | 34,750 | 21,054 | 44,118 | 99,922 |
| Subcontractor Markups | | | | 6,984 | 4,231 | 8,867 | 20,082 |
| Distributions | | | | 832 | 12,386 | 4,719 | 17,937 |
| Prime Contractor P Markups | | | | 15,338 | 59,185 | 20,401 | 94,923 |
| **TOTAL 101011001 Ventilation System** | | **1.00** | **LS** | **57,904** | **96,856** | **78,105** | **232,865** |
| SUBTOTAL 101011 Ventilation | | | | 34,750 | 21,054 | 44,118 | 99,922 |
| *MARKUP* | | | | *1.666* | *4.600* | *1.770* | *2.330* |
| **TOTAL 101011 Ventilation** | | | | **57,904** | **96,856** | **78,105** | **232,865** |
| SUBTOTAL 1010 MAINTENANCE | | | | 79,871 | 73,719 | 59,068 | 212,658 |
| *MARKUP* | | | | *1.666* | *4.420* | *1.769* | *2.649* |
| **TOTAL 1010 MAINTENANCE** | | | | **133,089** | **325,831** | **104,513** | **563,432** |
| **1011** | | | | | | | |
| **101110** | | | | | | | |
| | **101110001 Demo Piping & Tell-tale In Tank** | | | | | | |
| 6000000 | | 357.00 | m | | 8 | | 8 |
| | Remove Tell-tale piping, DN 20 | | | 0 | 2,856 | 0 | 2,856 |
| 6000000 | | 915.00 | m | | 10 | | 10 |
| | Remove Tell-tale piping, DN 40 | | | 0 | 9,150 | 0 | 9,150 |
| 6000000 | | 163.00 | ea | | 10 | | 10 |
| | Remove Tell-tale jumper pipes, DN20 | | | 0 | 1,630 | 0 | 1,630 |
| 6000000 | | 16.00 | mh | | 25 | | 25 |
| | Remove gooseneck DN 800, Fill/Issue | | | 0 | 400 | 0 | 400 |
| 6000000 | | 12.00 | mh | | 25 | | 25 |
| | Remove tee, reducer & valve, DN 400 | | | 0 | 300 | 0 | 300 |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **101110** | | | | | | | |
| | **101110001 Demo Piping & Tell-tale In Tank** | | | | | | |
| 6000000 | | 8.00 | mh | | 25 | | 25 |
| | Remove water piping in tank | | | 0 | 200 | 0 | 200 |
| 6000000 | | 12.00 | mh | 0.1 | 25 | 0.1 | 25.2 |
| | Remove water piping in tunnel | | | 1 | 300 | 1 | 302 |
| 6000000 | | 8000.00 | kg | | 0.3 | | 0.3 |
| | Material Disposal | | | 0 | 2,400 | 0 | 2,400 |
| | Subtotal Direct Costs | | | 1 | 17,236 | 1 | 17,238 |
| | Distributions | | | 0 | 8,443 | 0 | 8,443 |
| | Prime Contractor P Markups | | | 0 | 40,344 | 0 | 40,344 |
| | **TOTAL 101110001 Demo Piping & Tell-tale In Tank** | **1.00** | **LS** | **2** | **66,023** | **2** | **66,026** |
| | SUBTOTAL 101110 Demo Piping & Tell-tale In Tank | | | 1 | 17,236 | 1 | 17,238 |
| | *MARKUP* | | | *1.383* | *3.831* | *1.475* | *3.830* |
| | **TOTAL 101110 Demo Piping & Tell-tale In Tank** | | | **2** | **66,023** | **2** | **66,026** |
| | SUBTOTAL 1011 REPAIR | | | 1 | 17,236 | 1 | 17,238 |
| | *MARKUP* | | | *1.383* | *3.831* | *1.475* | *3.830* |
| | **TOTAL 1011 REPAIR** | | | **2** | **66,023** | **2** | **66,026** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **11** | | | | | | | |
| **1110** | | | | | | | |
| **111010** | | | | | | | |
| | **111010001 Basic Tank Repairs & Appurtanences** | | | | | | |
| | | 500.00 | ea | | 16 | | 16 |
| | Remove Grout Tubes | | | 0 | 8,000 | 0 | 8,000 |
| | | 1.00 | ea | | 1000 | | 1000 |
| | Remove All Misc Clips / Debris | | | 0 | 1,000 | 0 | 1,000 |
| | | 1000.00 | ea | 10 | 60 | | 70 |
| | Patch Plate Holes at Removed Tell tale Piping / Grout Tubes | | | 10,000 | 60,000 | 0 | 70,000 |
| | Subtotal Direct Costs | | | 10,000 | 69,000 | 0 | 79,000 |
| | Distributions | | | 199 | 33,799 | 0 | 33,999 |
| | Prime Contractor P Markups | | | 3,675 | 161,505 | 0 | 165,180 |
| | **TOTAL 111010001 Basic Tank Repairs & Appurtanences** | **1.00** | **LF** | **13,875** | **264,305** | **0** | **278,179** |
| | SUBTOTAL 111010 Basic Tank Repairs & Appurtanences | | | 10,000 | 69,000 | 0 | 79,000 |
| | *MARKUP* | | | *1.387* | *3.831* | | *3.521* |
| | **TOTAL 111010 Basic Tank Repairs & Appurtanences** | | | **13,875** | **264,305** | **0** | **278,179** |
| | SUBTOTAL 1110 MAINTENANCE | | | 10,000 | 69,000 | 0 | 79,000 |
| | *MARKUP* | | | *1.387* | *3.831* | | *3.521* |
| | **TOTAL 1110 MAINTENANCE** | | | **13,875** | **264,305** | **0** | **278,179** |
| **1111** | | | | | | | |
| **111110** | | | | | | | |
| | **111110001 Basic Tank Repairs & Appurtanences** | | | | | | |
| | Subcontractor: S | 4.00 | m | 2300 | 1050 | 440 | 3790 |
| | Tank Piping - DN 800 diffuser | | | 9,200 | 4,200 | 1,760 | 15,160 |
| | Subcontractor: S | 2.00 | m | 583 | 262 | 110 | 955 |
| | Tank Piping - DN 400 piping mods. | | | 1,166 | 524 | 220 | 1,910 |
| | Subcontractor: S | 2.00 | m | 146 | 66 | 28 | 240 |
| | Tank Piping - DN 200 piping mods | | | 292 | 132 | 56 | 480 |
| | Subcontractor: S | 1.00 | ls | 2000 | 2400 | | 4400 |
| | Tank Piping - Hydrotest | | | 2,000 | 2,400 | 0 | 4,400 |
| | | 1.00 | ls | | 12000 | 1000 | 13000 |
| | Tank straping & calibration | | | 0 | 12,000 | 1,000 | 13,000 |
| | | 7.00 | md | 1000 | 240 | | 1240 |
| | Tower Mods. - Reinf @ Dome for Boom Operation. 4 per @ 30/hr x 8hr/day x 7 days)* | | | 7,000 | 1,680 | 0 | 8,680 |
| | | 10.00 | md | 1000 | 240 | | 1240 |
| | Tower Mods. - Provide Gauging Platform | | | 10,000 | 2,400 | 0 | 12,400 |
| | | 2.00 | md | | 240 | | 240 |
| | Tank ATG - Remove existing gauge system | | | 0 | 480 | 0 | 480 |
| | | 1.00 | ea | 25000 | 1500 | | 26500 |
| | ATG system (type to be determined) | | | 25,000 | 1,500 | 0 | 26,500 |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| 111110 | | | | | | | |
| | **111110001 Basic Tank Repairs & Appurtanences** | | | | | | |
| | Subcontractor: S | 1.00 | ea | | 1000 | | 1000 |
| | Tank ATG - System testing | | | 0 | 1,000 | 0 | 1,000 |
| | Subcontractor: S | 1.00 | ea | 1732 | 5000 | | 6732 |
| | Elec wire and conduits for ATG system | | | 1,732 | 5,000 | 0 | 6,732 |
| | Subtotal Direct Costs | | | 56,390 | 31,316 | 3,036 | 90,742 |
| | Subcontractor Markups | | | 2,892 | 2,664 | 409 | 5,965 |
| | Distributions | | | 1,182 | 16,645 | 307 | 18,134 |
| | Prime Contractor P Markups | | | 21,787 | 79,536 | 1,327 | 102,649 |
| | **TOTAL 111110001 Basic Tank Repairs & Appurtanences** | 1.00 | LF | **82,251** | **130,161** | **5,079** | **217,491** |
| | SUBTOTAL 111110 Basic Tank Repairs & Appurtanences | | | 56,390 | 31,316 | 3,036 | 90,742 |
| | *MARKUP* | | | *1.459* | *4.156* | *1.673* | *2.397* |
| | **TOTAL 111110 Basic Tank Repairs & Appurtanences** | | | **82,251** | **130,161** | **5,079** | **217,491** |
| | SUBTOTAL 1111 REPAIR | | | 56,390 | 31,316 | 3,036 | 90,742 |
| | *MARKUP* | | | *1.459* | *4.156* | *1.673* | *2.397* |
| | **TOTAL 1111 REPAIR** | | | **82,251** | **130,161** | **5,079** | **217,491** |
| **1112** | | | | | | | |
| 111210 | | | | | | | |
| | **111210001 Basic Tank Repairs & Appurtanences** | | | | | | |
| 1 | Subcontractor: S | 1.00 | ea | 3500 | 1000 | | 4500 |
| | Hi level control panel, Scully system | | | 3,500 | 1,000 | 0 | 4,500 |
| 1 | Subcontractor: S | 2.00 | ea | 250 | 80 | | 330 |
| | Hi level alarm sensors | | | 500 | 160 | 0 | 660 |
| 1 | Subcontractor: S | 1.00 | ea | 150 | 480 | | 630 |
| | Hi level alarm sensor holder, tank mods | | | 150 | 480 | 0 | 630 |
| | Subcontractor: S | 1.00 | ea | 1732 | 5000 | | 6732 |
| | Elec wire and conduits for hi level alarm system | | | 1,732 | 5,000 | 0 | 6,732 |
| | Subtotal Direct Costs | | | 5,882 | 6,640 | 0 | 12,522 |
| | Subcontractor Markups | | | 1,182 | 1,335 | 0 | 2,517 |
| | Distributions | | | 141 | 3,906 | 0 | 4,047 |
| | Prime Contractor P Markups | | | 2,596 | 18,666 | 0 | 21,262 |
| | **TOTAL 111210001 Basic Tank Repairs & Appurtanences** | 1.00 | LF | **9,801** | **30,546** | **0** | **40,348** |
| | SUBTOTAL 111210 Basic Tank Repairs & Appurtanences | | | 5,882 | 6,640 | 0 | 12,522 |
| | *MARKUP* | | | *1.666* | *4.600* | | *3.222* |
| | **TOTAL 111210 Basic Tank Repairs & Appurtanences** | | | **9,801** | **30,546** | **0** | **40,348** |
| | SUBTOTAL 1112 MINOR CONSTRUCTION | | | 5,882 | 6,640 | 0 | 12,522 |
| | *MARKUP* | | | *1.666* | *4.600* | | *3.222* |
| | **TOTAL 1112 MINOR CONSTRUCTION** | | | **9,801** | **30,546** | **0** | **40,348** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **111210** | | | | | | | |
| | **111210001 Basic Tank Repairs & Appurtanences** | | | | | | |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **12** | | | | | | | |
| **1211** | | | | | | | |
| **121110** | | | | | | | |
| | **121110001 Bladder System - Barrel** | | | | | | |
| 1 | | 15.00 | md | | 240 | | 240 |
| | Prep 100% barrel surface (grind sharp edges, remove protrusions) | | | 0 | 3,600 | 0 | 3,600 |
| | Subcontractor: S | 4400.00 | m2 | 0.1 | | | 0.1 |
| | Bladder cushion (12 oz/sy) | | | 440 | 0 | 0 | 440 |
| | Subcontractor: S | 3.00 | md | | 240 | | 240 |
| | Transport cushion to tunnel | | | 0 | 720 | 0 | 720 |
| | Subcontractor: S | 12.00 | md | 0.1 | 240 | | 240.1 |
| | Attach cushion to barrel | | | 1 | 2,880 | 0 | 2,881 |
| | Subcontractor: S | 4400.00 | m2 | 12.9 | | | 12.9 |
| | 30 mil bladder | | | 56,760 | 0 | 0 | 56,760 |
| | Subcontractor: S | 12.00 | md | | 240 | | 240 |
| | Transport bladder thru tunnel | | | 0 | 2,880 | 0 | 2,880 |
| | Subcontractor: S | 1.00 | ls | | | 120000 | 120000 |
| | Install bladder in tank (quote) | | | 0 | 0 | 120,000 | 120,000 |
| | Subcontractor: S | 2.00 | ea | 7000 | | | 7000 |
| | Batten plate (top and bottom) (quote) | | | 14,000 | 0 | 0 | 14,000 |
| | Subcontractor: S | 14.00 | md | | 240 | | 240 |
| | Test field seams | | | 0 | 3,360 | 0 | 3,360 |
| | Subcontractor: S | 7.00 | md | | 240 | | 240 |
| | QA/QC (liner rep. on-site) | | | 0 | 1,680 | 0 | 1,680 |
| | Subcontractor: S | 1.00 | ls | 3000 | | | 3000 |
| | Material FreighT (Quote) | | | 3,000 | 0 | 0 | 3,000 |
| | Subtotal Direct Costs | | | 74,201 | 15,120 | 120,000 | 209,321 |
| | Subcontractor Markups | | | 14,913 | 2,315 | 24,118 | 41,346 |
| | Distributions | | | 1,777 | 8,541 | 12,835 | 23,153 |
| | Prime Contractor P Markups | | | 32,750 | 40,810 | 55,491 | 129,051 |
| | **TOTAL 121110001 Bladder System - Barrel** | **1.00** | **LF** | **123,641** | **66,786** | **212,444** | **402,871** |
| | SUBTOTAL 121110 Bladder System - Barrel | | | 74,201 | 15,120 | 120,000 | 209,321 |
| | *MARKUP* | | | *1.666* | *4.417* | *1.770* | *1.925* |
| | **TOTAL 121110 Bladder System - Barrel** | | | **123,641** | **66,786** | **212,444** | **402,871** |
| | SUBTOTAL 1211 REPAIR | | | 74,201 | 15,120 | 120,000 | 209,321 |
| | *MARKUP* | | | *1.666* | *4.417* | *1.770* | *1.925* |
| | **TOTAL 1211 REPAIR** | | | **123,641** | **66,786** | **212,444** | **402,871** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **13** | | | | | | | |
| **1312** | | | | | | | |
| **131210** | | | | | | | |
| | **131210001 Bladder System - Lower Dome** | | | | | | |
| 1 | | 10.00 | md | | 240 | | 240 |
| | Prep 100% barrel surface (grind sharp edges, remove protrusions) | | | 0 | 2,400 | 0 | 2,400 |
| | Subcontractor: S | 1460.00 | m2 | 0.1 | | | 0.1 |
| | Bladder cushion (12 oz/sy) | | | 146 | 0 | 0 | 146 |
| | Subcontractor: S | 1.50 | md | | 240 | | 240 |
| | Transport cushion thru tunnel | | | 0 | 360 | 0 | 360 |
| | Subcontractor: S | 4.00 | md | | 240 | | 240 |
| | Attach cushion to dome | | | 0 | 960 | 0 | 960 |
| | Subcontractor: S | 1460.00 | m2 | 12.9 | | | 12.9 |
| | 30 mil bladder | | | 18,834 | 0 | 0 | 18,834 |
| | | 2.00 | md | | 240 | | 240 |
| | Transport bladder thru tunnel | | | 0 | 480 | 0 | 480 |
| | Subcontractor: S | 1.00 | ls | | | 30000 | 30000 |
| | Install bladder in tank (quote) | | | 0 | 0 | 30,000 | 30,000 |
| | Subcontractor: S | 8.00 | md | | 240 | | 240 |
| | Test field seams | | | 0 | 1,920 | 0 | 1,920 |
| | Subcontractor: S | 3.00 | md | | 240 | | 240 |
| | QA/QC (liner rep. on-site) | | | 0 | 720 | 0 | 720 |
| | Subcontractor: S | 1.00 | ls | 1000 | | | 1000 |
| | Material Freight (Quote) | | | 1,000 | 0 | 0 | 1,000 |
| | Subtotal Direct Costs | | | 19,980 | 6,840 | 30,000 | 56,820 |
| | Subcontractor Markups | | | 4,016 | 796 | 6,029 | 10,841 |
| | Distributions | | | 479 | 3,740 | 3,209 | 7,428 |
| | Prime Contractor P Markups | | | 8,819 | 17,873 | 13,873 | 40,564 |
| | **TOTAL 131210001 Bladder System - Lower Dome** | **1.00** | **LF** | **33,293** | **29,249** | **53,111** | **115,653** |
| | SUBTOTAL 131110 Bladder System - Lower Dome | | | 19,980 | 6,840 | 30,000 | 56,820 |
| | *MARKUP* | | | *1.666* | *4.276* | *1.770* | *2.035* |
| | **TOTAL 131110 Bladder System - Lower Dome** | | | **33,293** | **29,249** | **53,111** | **115,653** |
| | SUBTOTAL 1311 REPAIR | | | 19,980 | 6,840 | 30,000 | 56,820 |
| | *MARKUP* | | | *1.666* | *4.276* | *1.770* | *2.035* |
| | **TOTAL 1311 REPAIR** | | | **33,293** | **29,249** | **53,111** | **115,653** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **14** | | | | | | | |
| **1411** | | | | | | | |
| **141110** | | | | | | | |
| | **141110001 New Tell-tale System - Piping to Sump** | | | | | | |
| 15192 | | 785.00 | m | 17 | 27 | 3 | 47 |
| Pipe, DN 40, Sched 80, including fittings | | | | 13,345 | 21,195 | 2,355 | 36,895 |
| 15192 | | 26.00 | m | 21 | 34 | 4 | 59 |
| Pipe, DN 50, Sched 80, including fittings | | | | 546 | 884 | 104 | 1,534 |
| 15192 | | 17.00 | m | 107 | 102 | 7 | 216 |
| Pipe, DN 150, Sched 80, including fittings | | | | 1,819 | 1,734 | 119 | 3,672 |
| 15192 | | 10.00 | m | 660 | 450 | 31 | 1141 |
| Pipe, DN 450, Sched 40, including fittings | | | | 6,600 | 4,500 | 310 | 11,410 |
| 15192 | | 13.00 | ea | 150 | 55 | 6 | 211 |
| Valve, DN 40, Gate | | | | 1,950 | 715 | 78 | 2,743 |
| 15192 | | 1.00 | ea | 190 | 70 | 8 | 268 |
| Valve, DN 50, Gate | | | | 190 | 70 | 8 | 268 |
| 09000 | Subcontractor: S | 30.00 | md | | 240 | | 240 |
| NDE welds | | | | 0 | 7,200 | 0 | 7,200 |
| 09000 | Subcontractor: S | 8.00 | md | | 240 | | 240 |
| Hydrotest telltale | | | | 0 | 1,920 | 0 | 1,920 |
| Subtotal Direct Costs | | | | 24,450 | 38,218 | 2,974 | 65,642 |
| Subcontractor Markups | | | | 0 | 1,833 | 0 | 1,833 |
| Distributions | | | | 488 | 19,619 | 265 | 20,371 |
| Prime Contractor P Markups | | | | 8,986 | 93,746 | 1,145 | 103,876 |
| **TOTAL 141110001 New Tell-tale System - Piping to Sump** | | **1.00** | **LS** | **33,923** | **153,415** | **4,384** | **191,722** |
| | **141110002 New Tell-tale System - Piping to Sump - Structural** | | | | | | |
| 03000 | | 1.00 | LS | 500 | 400 | | 900 |
| Grout | | | | 500 | 400 | 0 | 900 |
| 02220 | Subcontractor: S | 17.00 | M | 125 | 250 | 40 | 415 |
| Drill concrete, 254 mm dia. | | | | 2,125 | 4,250 | 680 | 7,055 |
| 02220 | Subcontractor: S | 10.00 | M | 570 | 1600 | 260 | 2430 |
| Drill concrete, 610 mm dia | | | | 5,700 | 16,000 | 2,600 | 24,300 |
| Subtotal Direct Costs | | | | 8,325 | 20,650 | 3,280 | 32,255 |
| Subcontractor Markups | | | | 1,573 | 4,070 | 659 | 6,302 |
| Distributions | | | | 197 | 12,109 | 351 | 12,657 |
| Prime Contractor P Markups | | | | 3,637 | 57,861 | 1,517 | 63,015 |
| **TOTAL 141110002 New Tell-tale System - Piping to Sump - Structural** | | **1.00** | **LS** | **13,733** | **94,689** | **5,807** | **114,229** |
| SUBTOTAL 141110 New Tell-tale System | | | | 32,775 | 58,868 | 6,254 | 97,897 |
| *MARKUP* | | | | *1.454* | *4.215* | *1.629* | *3.125* |
| **TOTAL 141110 New Tell-tale System** | | | | **47,656** | **248,105** | **10,191** | **305,951** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| 141110 | | | | | | | |
| | **141110002 New Tell-tale System - Piping to Sump - Structural** | | | | | | |
| SUBTOTAL 1411 REPAIR | | | | 32,775 | 58,868 | 6,254 | 97,897 |
| *MARKUP* | | | | *1.454* | *4.215* | *1.629* | *3.125* |
| **TOTAL 1411 REPAIR** | | | | **47,656** | **248,105** | **10,191** | **305,951** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **15** | | | | | | | |
| **1510** | | | | | | | |
| **151010** | | | | | | | |
| | **151010001 Upper Dome Repairs** | | | | | | |
| | Subcontractor: S | 5.00 | days | | | 2821 | 2821 |
| | UTscan 10% Dome | | | 0 | 0 | 14,105 | 14,105 |
| | | 250.00 | ea | 10 | 60 | | 70 |
| | Patch plate thin spots/holes | | | 2,500 | 15,000 | 0 | 17,500 |
| | Subcontractor: S | 75.00 | m2 | 51.45 | 43 | | 94.45 |
| | Spot coating repai (5% dome surface area) | | | 3,859 | 3,225 | 0 | 7,084 |
| | Subtotal Direct Costs | | | 6,359 | 18,225 | 14,105 | 38,689 |
| | Subcontractor Markups | | | 776 | 648 | 2,835 | 4,259 |
| | Distributions | | | 142 | 9,245 | 1,509 | 10,896 |
| | Prime Contractor P Markups | | | 2,622 | 44,176 | 6,523 | 53,320 |
| | **TOTAL 151010001 Upper Dome Repairs** | | | **9,898** | **72,294** | **24,971** | **107,163** |
| | 1.00 LF | | | | | | |
| | SUBTOTAL 151010 Upper Dome Repairs | | | 6,359 | 18,225 | 14,105 | 38,689 |
| | *MARKUP* | | | *1.557* | *3.967* | *1.770* | *2.770* |
| | **TOTAL 151010 Upper Dome Repairs** | | | **9,898** | **72,294** | **24,971** | **107,163** |
| | SUBTOTAL 1510 MAINTENANCE | | | 6,359 | 18,225 | 14,105 | 38,689 |
| | *MARKUP* | | | *1.557* | *3.967* | *1.770* | *2.770* |
| | **TOTAL 1510 MAINTENANCE** | | | **9,898** | **72,294** | **24,971** | **107,163** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **16** | | | | | | | |
| **1610** | | | | | | | |
| **161010** | | | | | | | |
| | **161010001 Existing Tank Inspection** | | | | | | |
| | | 3.00 | md | | 1410 | | 1410 |
| | UTscan exist. shell pl. at batten pl. (subcontractor quote) | | | 0 | 4,230 | 0 | 4,230 |
| | Subtotal Direct Costs | | | 0 | 4,230 | 0 | 4,230 |
| | Distributions | | | 0 | 2,072 | 0 | 2,072 |
| | Prime Contractor P Markups | | | 0 | 9,901 | 0 | 9,901 |
| | **TOTAL 161010001 Existing Tank Inspection** 1.00 LF | | | **0** | **16,203** | **0** | **16,203** |
| | SUBTOTAL 161010 Existing Tank Inspection | | | 0 | 4,230 | 0 | 4,230 |
| | *MARKUP* | | | | *3.831* | | *3.831* |
| | **TOTAL 161010 Existing Tank Inspection** | | | **0** | **16,203** | **0** | **16,203** |
| | SUBTOTAL 1610 MAINTENANCE | | | 0 | 4,230 | 0 | 4,230 |
| | *MARKUP* | | | | *3.831* | | *3.831* |
| | **TOTAL 1610 MAINTENANCE** | | | **0** | **16,203** | **0** | **16,203** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **17** | | | | | | | |
| **1710** | | | | | | | |
| **171010** | | | | | | | |
| | **171010001 Tank Piping - Lining** | | | | | | |
| 15192 | Subcontractor: S | 17.00 | m | 2300 | 1050 | 440 | 3790 |
| | Tank Piping - Fuel, Pipe Lining - DN 800 | | | 39,100 | 17,850 | 7,480 | 64,430 |
| 15192 | Subcontractor: S | 17.00 | m | 583 | 262 | 110 | 955 |
| | Tank Piping - Fuel, Pipe Lining - DN 400 | | | 9,911 | 4,454 | 1,870 | 16,235 |
| 15192 | Subcontractor: S | 17.00 | m | 146 | 66 | 28 | 240 |
| | Tank Piping - Fuel, Pipe Lining - DN 200 | | | 2,482 | 1,122 | 476 | 4,080 |
| | Subcontractor: S | 1.00 | ls | 2000 | 2400 | | 4400 |
| | Tank Piping - Hydrotest | | | 2,000 | 2,400 | 0 | 4,400 |
| | Subtotal Direct Costs | | | 53,493 | 25,826 | 9,826 | 89,145 |
| | Subcontractor Markups | | | 10,751 | 5,191 | 1,975 | 17,916 |
| | Distributions | | | 1,281 | 15,193 | 1,051 | 17,526 |
| | Prime Contractor P Markups | | | 23,610 | 72,599 | 4,544 | 100,753 |
| | **TOTAL 171010001 Tank Piping - Lining** 1.00 LF | | | **89,135** | **118,809** | **17,396** | **225,340** |
| | SUBTOTAL 171010 Tank Piping - Lining | | | 53,493 | 25,826 | 9,826 | 89,145 |
| | *MARKUP* | | | *1.666* | *4.600* | *1.770* | *2.528* |
| | **TOTAL 171010 Tank Piping - Lining** | | | **89,135** | **118,809** | **17,396** | **225,340** |
| | SUBTOTAL 1710 MAINTENANCE | | | 53,493 | 25,826 | 9,826 | 89,145 |
| | *MARKUP* | | | *1.666* | *4.600* | *1.770* | *2.528* |
| | **TOTAL 1710 MAINTENANCE** | | | **89,135** | **118,809** | **17,396** | **225,340** |

# INTERNAL BLADDER TYPE LINER
# COST ESTIMATE - ADDITIVE BID ITEMS

SYSTEM REPORT
SUBMITTAL: FACD
SOFTWARE VERSION: SUCCESS 2.21
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACT: PRL 98-9
DATABASE USED: EEI
PRINTING DATE: 05/27/1998
Page No. 1
ESTIMATE NAME:T19-Blad

PROJECT: Red Hill Tank 19 - Bladder - Additive Bid Items
LOCATION: FISC Pearl Harbor, HI
ESTIMATOR: EEI
PROJECT SIZE: 1 PRL 98
CONSTRUCTION FUNDS AVAILABLE:

CAT CODE: N/A
UIC:
PROJECT #: PRL 98-9
DATE OF ESTIMATE: 5/26/98
BID DATE: 4/99

| WBS CODE | DESCRIPTION | COST/WBS BASED ON 1 PRL 98 | SYSTEM UNITS/ U/M | COST/WBS UNIT | TOTAL MARKED UP COSTS MATL | LABOR | EQUIP | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | **TOTAL ESTIMATED CONTRACT (ROUNDED)** | | | | | | | **747,000** |
| | | | *****PROJECT SUBTOTALS**** | | 97,880 | 560,490 | 88,985 | 747,356 |
| | ***ADDITIVE BID ITEMS*** | **747355.80/PRL** | **1 LS** | | **97,880** | **560,490** | **88,985** | **747,356** |
| **35** | **-Cathodic Protection** | **550955.13/PRL** | **1 LS** | | **77,020** | **473,925** | **11** | **550,955** |
| 3510 | MAINTENANCE | 550955.13/PRL | 1 LS | | 77,020 | 473,925 | 11 | 550,955 |
| **40** | **-Under Tank Leak Detection** | **85311.61/PRL** | **1 LS** | | **0** | **0** | **85,312** | **85,312** |
| 4010 | MINOR CONSTRUCTION | 85311.61/PRL | 1 LS | | 0 | 0 | 85,312 | 85,312 |
| **45** | **-New Tell-tale System - Piping T** | **111089.06/PRL** | **1 LS** | | **20,861** | **86,565** | **3,663** | **111,089** |
| 4510 | MAINTENANCE | 111089.06/PRL | 1 LS | | 20,861 | 86,565 | 3,663 | 111,089 |

SUMMARY REPORT
SUBMITTAL: FACD
SOFTWARE VERSION: SUCCESS 2.21
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACT: PRL 98-9
DATABASE USED: EEI
PRINTING DATE: 05/27/1998
Page No. 1
ESTIMATE NAMET19-Blad

PROJECT: Red Hill Tank 19 - Bladder - Additive Bid Items
LOCATION:FISC Pearl Harbor, HI
ESTIMATOR:EEI
PROJECT SIZE: 1 PRL 98
CONSTRUCTION FUNDS AVAILABLE:

CAT CODE: N/A
UIC:
PROJECT #: PRL 98-9
DATE OF ESTIMATE: 5/26/98
BID DATE: 4/99

| WBS CODE | DESCRIPTION | COST/WBS BASED ON 1 PRL 98 | SYSTEM UNITS/ U/M | COST/WBS UNIT | TOTAL MARKED UP COSTS MATL | LABOR | EQUIP | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | **TOTAL ESTIMATED CONTRACT (ROUNDED)** | | | | | | | **747,000** |
| | | | *****PROJECT SUBTOTALS**** | | 97,880 | 560,490 | 88,985 | 747,356 |
| | *ADDITIVE BID ITEMS* | 747355.80/PRL | 1 LS | | 97,880 | 560,490 | 88,985 | 747,356 |
| 35 | ---Cathodic Protection | 550955.13/PRL | 1 LS | | 77,020 | 473,925 | 11 | 550,955 |
| 40 | ---Under Tank Leak Detection | 85311.61/PRL | 1 LS | | 0 | 0 | 85,312 | 85,312 |
| 45 | ---New Tell-tale System - Pipi | 111089.06/PRL | 1 LS | | 20,861 | 86,565 | 3,663 | 111,089 |

CONTRACTOR MARKUP REPORT
SUBMITTAL: FACD
SOFTWARE VERSION: SUCCESS 2.1
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACT: PRL 98-9
DATABASE USED :EEI
PRINTING DATE :05/27/98
PAGE NUMBER :1
ESTIMATE NAME : T19-Bladder

PROJECT: Red Hill Tank 19 - Bladder - Additive Bid Items
LOCATION: FISC Pearl Harbor, HI
ESTIMATOR: EEI
PROJECT SIZE: 1.00 PRL 98-9
AUTHORIZED CONSTRUCTION FUNDS:

CAT CODE:N/A
UIC:
PROJECT #:
DATE OF ESTIMATE:5/26/98
BID DATE: 4/99

| CONTRACTOR | DESCRIPTION | MATERIAL | LABOR | EQUIPMENT |
|---|---|---|---|---|
| P | **Prime Contractor** | | | |
| | WORKER'S COMPENSATION/UNEMPL/SOC. SEC TAXES | 0.00 | 32.00 | 0.00 |
| | Hawaii cost adjustment compared to AK | 0.00 | 31.00 | 0.00 |
| | PRIME OVERHEAD | 10.00 | 10.00 | 10.00 |
| | PRIME PROFIT | 6.00 | 6.00 | 6.00 |
| | PRIME HOME OFFICE | 3.00 | 3.00 | 3.00 |
| | BOND | 1.00 | 1.00 | 1.00 |
| | ESCALATION | 1.02 | 1.02 | 1.02 |
| | ESTIMATING CONTINGENCY | 5.00 | 5.00 | 5.00 |
| | HI GET | 4.17 | 4.17 | 4.17 |
| | SALES TAX | 0.50 | 0.00 | 0.50 |
| | **COMPOSITE MARKUPS FOR P** | | | |
| | **MATERIAL COMPOSITE MARKUP** | **1.347** | | |
| | **LABOR COMPOSITE MARKUP** | **2.318** | | |
| | **EQUIPMENT COMPOSITE MARKUP** | **1.347** | | |
| S | **Subcontractors** | | | |
| | SUBCONTRACTOR OVERHEAD | 10.00 | 10.00 | 10.00 |
| | SUBCONTRACTOR PROFIT | 6.00 | 6.00 | 6.00 |
| | SUBCONTRACTOR HOME OFFICE | 3.00 | 3.00 | 3.00 |
| | **COMPOSITE MARKUPS FOR S** | | | |
| | **MATERIAL COMPOSITE MARKUP** | **1.201** | | |
| | **LABOR COMPOSITE MARKUP** | **1.201** | | |
| | **EQUIPMENT COMPOSITE MARKUP** | **1.201** | | |

PROJECT: Red Hill Tank 19 - Bladder - Additive Bi
LOCATION: FISC Pearl Harbor, HI
ESTIMATOR: EEI
PROJECT SIZE: 1 PRL 98
AUTHORIZED CONSTRUCTION FUNDS:

CAT CODE: N/A
UIC:
PROJECT #: PRL 98-9
DATE OF ESTIMATE: 5/26/98
BID DATE: 4/99

DETAIL REPORT
UNBURDENED LINE ITEMS
FACD
SOFTWARE VERSION: SUCCESS 3.0
REPORT WRITER VERSION: R&R 6.0

CONSTRUCTION CONTRACTPRL 98-9

DATABASE USED: EEI
PRINTING DATE:05/27/1998



| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **35** | | | | | | | |
| **3510** | | | | | | | |
| **351010** | | | | | | | |
| | **351010001 Cathodic Protection** | | | | | | |
| | | 48.00 | ea | 150 | 8 | | 158 |
| | Anodes (MMO 19.1 mm x 1219 mm) | | | 7,200 | 384 | 0 | 7,584 |
| | | 48.00 | ea | 28 | 8 | | 36 |
| | Anode Ventralizer Assembly | | | 1,344 | 384 | 0 | 1,728 |
| | | 869.00 | m | 1.27 | | | 1.27 |
| | Anode Lead Wire, No 4 AWG, HMWPE | | | 1,104 | 0 | 0 | 1,104 |
| | Subcontractor: S | 580.00 | m | | 255 | | 255 |
| | Anode Hole Drilling & Backfilling Complete | | | 0 | 147,900 | 0 | 147,900 |
| | Subcontractor: S | 13581.00 | kg | 1.5 | | | 1.5 |
| | Coke Backfill | | | 20,372 | 0 | 0 | 20,372 |
| | Subcontractor: S | 6.67 | m3 | 140 | | 1 | 141 |
| | Cement Grout | | | 934 | 0 | 7 | 940 |
| | | 580.00 | m | 3.56 | | | 3.56 |
| | Anode Vent Pipe | | | 2,065 | 0 | 0 | 2,065 |
| | | 4.00 | ea | 280 | 295 | | 575 |
| | Custom Anode Junction Box (NEMA 4X) | | | 1,120 | 1,180 | 0 | 2,300 |
| | | 1.00 | ea | 3100 | 1500 | | 4600 |
| | Oil-Cooled Rectifier, 50 Volt, 200 DC Amp | | | 3,100 | 1,500 | 0 | 4,600 |
| | | 322.00 | liters | 1.58 | 7 | | 8.58 |
| | Rectifier Oil | | | 509 | 2,254 | 0 | 2,763 |
| | Subcontractor: S | 1.00 | ea | 760 | 1100 | | 1860 |
| | 240 Volt, 20 Amp AC power for rectifier | | | 760 | 1,100 | 0 | 1,860 |
| | Subcontractor: S | 1.00 | ea | 220 | 120 | | 340 |
| | AC Disconnect Switch, Fused 3P-40 Amp | | | 220 | 120 | 0 | 340 |
| | | 3.00 | ea | 32 | 110 | | 142 |
| | Rectifier Pipe Bollards complete | | | 96 | 330 | 0 | 426 |
| | Subcontractor: S | 60.00 | m | | 32 | | 32 |
| | Micro Directional Drill for 5 Ref Electrodes | | | 0 | 1,920 | 0 | 1,920 |
| | | 10.00 | ea | 245 | | | 245 |
| | Reference Electrodes (2 per hole) | | | 2,450 | 0 | 0 | 2,450 |
| | | 4.00 | ea | 190 | 32 | | 222 |
| | Concrete Electrical Pull Box | | | 760 | 128 | 0 | 888 |
| | | 0.72 | m3 | 155 | 616 | | 771 |
| | Concrete Pads (inc rebar & forms) | | | 112 | 444 | 0 | 555 |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| 351010 | | | | | | | |
| | **351010001 Cathodic Protection** | | | | | | |
| | | 50.00 | m | 5.04 | 7 | | 12.04 |
| | Cathode Header Cable, # 2/0 AWG HMP/PE | | | 252 | 350 | 0 | 602 |
| | | 320.00 | m | 5.04 | 2.12 | | 7.16 |
| | Anode Header Cable, #2/0 AWG HMP/PE | | | 1,613 | 678 | 0 | 2,291 |
| | | 320.00 | m | 5 | 2.12 | | 7.12 |
| | 50 mm PVC conduit (anode cables) | | | 1,600 | 678 | 0 | 2,278 |
| | Subcontractor: S | 150.00 | m | | 5.5 | | 5.5 |
| | Trenching (Min. 0.1 m wide x 0.68 m deep) | | | 0 | 825 | 0 | 825 |
| | Subcontractor: S | 150.00 | m | | 5.5 | | 5.5 |
| | Trench Backfilling & Compaction | | | 0 | 825 | 0 | 825 |
| | Subcontractor: S | 2.40 | m3 | 120 | | | 120 |
| | Bedding Sand (Min. 0.1 m wide x 0.16 m deep) | | | 288 | 0 | 0 | 288 |
| | | 256.00 | hrs | | 20 | | 20 |
| | Cathodic Protection construction foreman | | | 0 | 5,120 | 0 | 5,120 |
| | | 256.00 | hrs | 26.35 | 30 | | 56.35 |
| | QC Specialist, Corrosion Engineer | | | 6,746 | 7,680 | 0 | 14,426 |
| | Subtotal Direct Costs | | | 52,642 | 173,800 | 7 | 226,449 |
| | Subcontractor Markups | | | 4,537 | 30,688 | 1 | 35,226 |
| | Prime Contractor P Markups | | | 19,840 | 269,437 | 3 | 289,280 |
| | **TOTAL 351010001 Cathodic Protection** | **1.00** | **LS** | **77,020** | **473,925** | **11** | **550,955** |
| | SUBTOTAL 351010 Cathodic Protection | | | 52,642 | 173,800 | 7 | 226,449 |
| | *MARKUP* | | | *1.463* | *2.727* | *1.610* | *2.433* |
| | **TOTAL 351010 Cathodic Protection** | | | **77,020** | **473,925** | **11** | **550,955** |
| | SUBTOTAL 3510 MAINTENANCE | | | 52,642 | 173,800 | 7 | 226,449 |
| | *MARKUP* | | | *1.463* | *2.727* | *1.610* | *2.433* |
| | **TOTAL 3510 MAINTENANCE** | | | **77,020** | **473,925** | **11** | **550,955** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **40** | | | | | | | |
| **4010** | | | | | | | |
| **401010** | | | | | | | |
| | **401010001 Under Tank Leak Detection** | | | | | | |
| | Subcontractor: S | 10.00 | day | | | 3500 | 3500 |
| | Drill Rig (10) 38 to 50 DN Directional Boring x 46 long ea | | | 0 | 0 | 35,000 | 35,000 |
| | Subcontractor: S | 1.00 | ls | | | 18000 | 18000 |
| | Mob/Demob | | | 0 | 0 | 18,000 | 18,000 |
| | Subtotal Direct Costs | | | 0 | 0 | 53,000 | 53,000 |
| | Subcontractor Markups | | | 0 | 0 | 10,652 | 10,652 |
| | Prime Contractor P Markups | | | 0 | 0 | 21,660 | 21,660 |
| | **TOTAL 401010001 Under Tank Leak Detection** | **1.00** | **LS** | **0** | **0** | **85,312** | **85,312** |
| | SUBTOTAL 401010 Under Tank Leak Detection | | | 0 | 0 | 53,000 | 53,000 |
| | *MARKUP* | | | | | *1.610* | *1.610* |
| | **TOTAL 401010 Under Tank Leak Detection** | | | **0** | **0** | **85,312** | **85,312** |
| | SUBTOTAL 4010 MINOR CONSTRUCTION | | | 0 | 0 | 53,000 | 53,000 |
| | *MARKUP* | | | | | *1.610* | *1.610* |
| | **TOTAL 4010 MINOR CONSTRUCTION** | | | **0** | **0** | **85,312** | **85,312** |

| WBS CODE | DESCRIPTION | QTY | UM | MATERIAL | LABOR | EQUIPMENT | TOTAL |
|---|---|---|---|---|---|---|---|
| **45** | | | | | | | |
| **4510** | | | | | | | |
| **451000** | | | | | | | |
| | **4510001 New Tell-tale System - Piping to top of tank** | 911.00 | m | 17 | 41 | 3 | 61 |
| | Pipe, DN 40, Sched 80 | | | 15,487 | 37,351 | 2,733 | 55,571 |
| | Subtotal Direct Costs | | | 15,487 | 37,351 | 2,733 | 55,571 |
| | Prime Contractor P Markups | | | 5,374 | 49,214 | 930 | 55,518 |
| | **TOTAL 4510001 New Tell-tale System - Piping to top of tank** | **1.00** | **LS** | **20,861** | **86,565** | **3,663** | **111,089** |
| | SUBTOTAL 451010 New Tell-tale System - Piping to top of tank | | | 15,487 | 37,351 | 2,733 | 55,571 |
| | *MARKUP* | | | *1.347* | *2.318* | *1.340* | *1.999* |
| | **TOTAL 451010 New Tell-tale System - Piping to top of tank** | | | **20,861** | **86,565** | **3,663** | **111,089** |
| | SUBTOTAL 4510 MAINTENANCE | | | 15,487 | 37,351 | 2,733 | 55,571 |
| | *MARKUP* | | | *1.347* | *2.318* | *1.340* | *1.999* |
| | **TOTAL 4510 MAINTENANCE** | | | **20,861** | **86,565** | **3,663** | **111,089** |