

**Notes:**

- Area of bunds taken from above diagram
- Bund wall heights taken from measurements conducted on site
- Tank displacements use an estimation based off new tank drawings diameters assuming old tanks similar size

**Bund A**

HL = 1.71 m  
 Bund Area = 220 m<sup>2</sup>  
 Tank Displacement = 72 m<sup>3</sup>

Bund Volume = 376.2 m<sup>3</sup>  
 Reduced Volume = 304.2 m<sup>3</sup>

**Tank Volumes:**

Q1 160,000 L  
 Q2 90,000 L  
 Q3 90,000 L  
 Q6 87,300 L  
 Q7 87,300 L

110% of largest tank  
 1.1\*160,000  
 (in m cubed) 176 m<sup>3</sup>  
 OR

10% of all tanks  
 128,650 L  
 (in m cubed) 128.65 m<sup>3</sup>

Bund Volume Excess: 128.2 m<sup>3</sup>

**Note on Q8**

10% of all tanks + Q8  
 150475 L  
 (in m cubed) 150.475 m<sup>3</sup>  
 Bund Excess vol ~ = 116.2 m<sup>3</sup> (still 110% but 12m<sup>3</sup> removed as Q8 has roughly this displacement)  
 Still viable to place Q8 in bund A with plenty of excess



**Bund B**

**Section 8&5 Joined**

|                     |                     |
|---------------------|---------------------|
| HL =                | 1.1 m               |
| Bund Area8 =        | 89 m <sup>2</sup>   |
| Bund Area5 =        | 168 m <sup>2</sup>  |
| Tank Displacement = | 79.2 m <sup>3</sup> |

|                 |                      |
|-----------------|----------------------|
| Bund Volume =   | 282.7 m <sup>3</sup> |
| Reduced Volume= | 203.5 m <sup>3</sup> |

**Tank Volumes:**

|     |           |
|-----|-----------|
| Q9  | 122,245 L |
| Q10 | 122,245 L |
| F4  | 120,000 L |
| F5  | 120,000 L |
| F6  | 120,000 L |
| E4  | 49,000 L  |
| E5  | 49,000 L  |

|                      |                         |
|----------------------|-------------------------|
| 110% of largest tank |                         |
| 1.1*120,000          | 132000 L                |
| (in m cubed)         | 132 m <sup>3</sup>      |
| OR                   |                         |
| 25% of all tanks     | 175622.5 L              |
| (in m cubed)         | 175.6225 m <sup>3</sup> |

Bund Volume Excess: 27.8775

**Section 2,3&4 Joined**

|                     |                       |
|---------------------|-----------------------|
| HL (area 2)=        | 0.95 m                |
| HL (area 3) =       | 0.74 m                |
| HL (area 4)=        | 1.1 m                 |
| Bund Area2 =        | 83 m <sup>2</sup>     |
| Bund Area3 =        | 62 m <sup>2</sup>     |
| Bund Area4 =        | 62 m <sup>2</sup>     |
| Tank Displacement = | 53.856 m <sup>3</sup> |
|                     | 192.93 m <sup>3</sup> |

|                 |                        |
|-----------------|------------------------|
| Bund Volume =   | 192.93 m <sup>3</sup>  |
| Reduced Volume= | 139.074 m <sup>3</sup> |

**Tank Volumes:**

|     |           |
|-----|-----------|
| W1  | 20,000 L  |
| Q11 | 122,245 L |
| F3  | 80,000 L  |
| Q4  | 115,000 L |
| Q5  | 115,000 L |

|                      |                         |
|----------------------|-------------------------|
| 110% of largest tank |                         |
| 1.1*120,000          | 134469.5 L              |
| (in m cubed)         | 134.4695 m <sup>3</sup> |
| OR                   |                         |
| 25% of all tanks     | 113061.3 L              |
| (in m cubed)         | 113.0613 m <sup>3</sup> |

Bund Volume Excess: 4.6045

Create tab for Extended bund case for bunds 2,3,4 and complete drawing  
 Recommendations

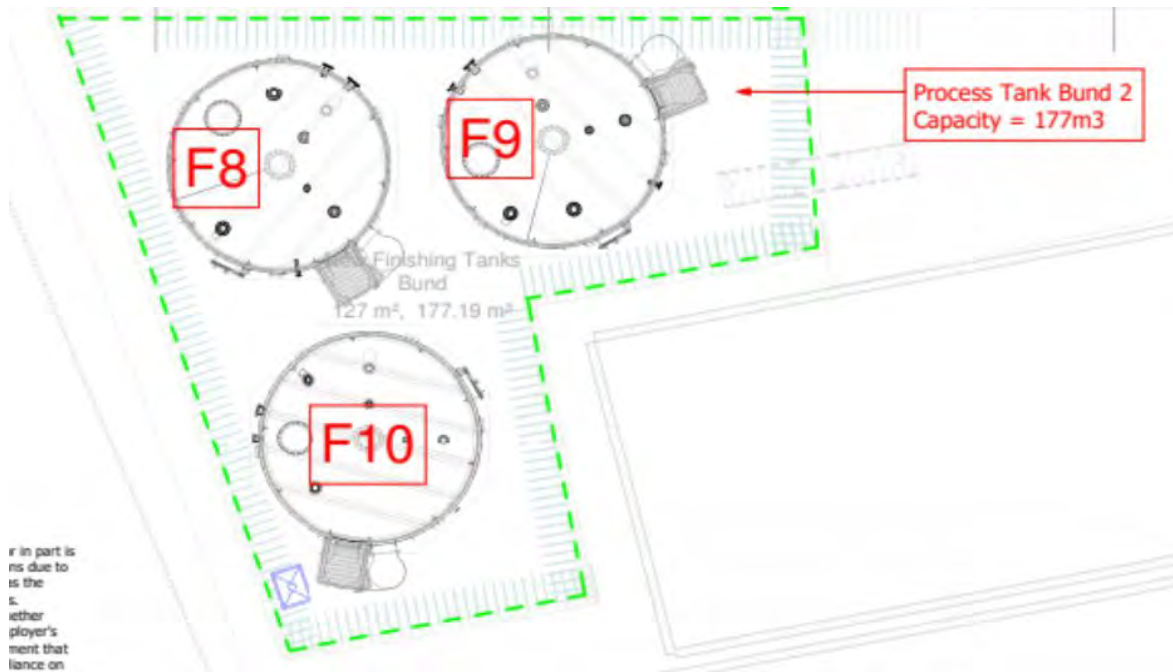
Re-instate hole in bund 3 wall

**Notes:**

- Area of bunds taken from above diagram
- Bund wall heights taken from measurements conducted on site
- Tank displacements use an estimation based off new tank drawings assuming old tanks similar size
- Tank displacement of tanks on "legs" assumed to be minimal (~0m<sup>3</sup>)

Tank area 14.4m<sup>2</sup>

Tank Volume taken up = 14.4 \* height of shortest bund wall



**Bund C**

HL = 1.36 m  
 Bund Area = 126.25 m<sup>2</sup>  
 Tank Displacement = 24.70765 m<sup>3</sup> recalc this  
 Volume of Hex bases = 6.049724

Bund Volume = 171.7 m<sup>3</sup>  
 Reduced Volume = 140.9426 m<sup>3</sup>

**Tank Volumes:**

F8 120,000 L  
 F9 120,000 L  
 F10 120,000 L

110% of largest tank  
 1.1\*120,000 132000 L  
 (in m cubed) 132 m<sup>3</sup>  
 OR  
 25% of all tanks  
 120,000\*3\*0.25 90000 L  
 (in m cubed) 90 m<sup>3</sup>

Bund Volume Excess: 8.942624 m<sup>3</sup>

**Hexagonal Bases for tanks**

|               |                         |                                    |
|---------------|-------------------------|------------------------------------|
| h             | 0.2 m                   | height of hex                      |
| L             | 1.97 m                  | length of one hex side             |
| Volume of Hex | 2.016575 m <sup>3</sup> | (3*rt(3) (s <sup>2</sup> ) / 2 * L |
| 3 hex         | 6.049724                |                                    |

**Tank Volumes**

|       |                       |                      |
|-------|-----------------------|----------------------|
| h     | 1.16 m                |                      |
| area  | 7.0999 m <sup>2</sup> | pi*2.26 <sup>2</sup> |
| vol   | 8.235884              |                      |
| 3*vol | 24.70765              |                      |

**Notes:**

Area of bunds calculated based off site measurements of bund perimeter  
 Bund wall heights taken from measurements conducted on site