

Abstraction Volume Estimation Examples

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Pig Farms

Pig Farm – Example 1

A farm with 500 sows and 5,000 weaners. Water for the farm is abstracted from a well or surface water source.

- 500 Sows using 32 litres / day per animal = 16,000 litres/day (16 m³/day)
- 5,000 Weaners using 2.1 litres / day per animal* = 10,500 litres/day (10.5 m³/day)

Estimated maximum volume abstracted = 26,500 litres/day (26.5 m³/day)

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than 25 m³/day.

Pig Farm – Example 2

A farm with 400 sows and 3,500 weaners. Water for the farm is abstracted from a well or surface water source.

- 400 Sows using 32 litres / day per animal = 12,800 litres/day (12.8 m³/day)
- 3,500 Weaners using 2.1 litres / day per animal* = 7,350 litres/day (7.35 m³/day)

Estimated maximum volume abstracted = 20,150 litres/day (20.15 m³/day)

Is registration of the abstraction required? No. Registration is not required as the maximum volume used is estimated to be less than 25 m³/day.

Dairy Farms

Dairy Farm – Example 1

A farm with 170 dairy cows, 80 calves and 50 replacement heifers. Water for the farm is abstracted from a well or surface water source.

- 150 Dairy Cows using 125 litres / day per animal = 18,750 litres / day (18.75 m³ / day)
- 70 calves using 20 litres / day per animal = 1,400 litres / day (1.4 m³ / day)
- 50 replacement heifers using 35 litres / day per animal = 1,750 litres / day (1.75 m³ / day)

Estimated maximum volume abstracted = 21,900 litres / day (21.9 m³ / day)

Is registration of the abstraction required? No. Registration is not required as the maximum

Dairy Farm – Example 2

A farm with 185 dairy cows, 100 calves and 50 replacement heifers. Water for the farm is abstracted from a well or surface water source.

- 185 Dairy Cows using 125 litres / day per animal = 23,125 litres/day (23.125 m³ / day)
- 100 calves using 20 litres / day per animal = 2,000 litres / day (2.0 m³ / day)
- 50 replacement heifers using 35 litres / day per animal = 1,750 litres / day (1.75 m³ / day)

Estimated maximum volume abstracted = 26,875 litres / day (26.875 m³ / day)

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than 25 m³ / day.

Dairy Farm – Example 3

A farm with 220 dairy cows and no calves or replacement heifers. Water for the farm is abstracted from a well or surface water source.

- 220 Dairy Cows using 125 litres / day per animal = 27,500 litres/day (27.5 m³/day)

Estimated maximum volume abstracted = 27,500 litres/day (27.5 m³/day)

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than 25 m³/day.

Mixed Farming including on Farm Enterprise

Mixed Farm and on Farm Enterprise – Example 1

A farm with 50 dairy cows, 30 calves, 10 sows and cheese production enterprise on farm.
Water for the farm is abstracted from a well or surface water source.

- 50 Dairy Cows using 125 litres / day per animal = 6,250 litres / day (6.25 m³ / day)
- 30 calves using 20 litres / day per animal = 600 litres / day (0.6 m³ / day)
- 10 Sows using 32 litres / day per animal = 320 litres/day (0.32 m³/day)
- Cheese production enterprise - water use is metered with maximum use of 5,000 litres / day (5 m³ / day)

Estimated maximum volume abstracted = 12,170 litres / day (12.17 m³ / day)

Is registration of the abstraction required? No. Registration is not required as the maximum volume used is estimated to be less than 25 m³ / day.

Vegetable Growing Farms

Vegetable Growing – Example 1

A vegetable growing farm with 1 hectare of carrots irrigated by trickle tape. Water for the farm is abstracted from a well or surface water source.

- 1 hectare of carrots irrigated by trickle tape using $18 \text{ m}^3/\text{hectare/day} = 18 \text{ m}^3/\text{day}$

Estimated maximum volume abstracted = 18,000 litres / day ($18 \text{ m}^3/\text{day}$)

Is registration of the abstraction required? No. Registration is not required as the maximum volume used is estimated to be less than $25 \text{ m}^3/\text{day}$.

Vegetable Growing – Example 2

A vegetable growing farm with 1 hectare of carrots irrigated by spray boom. Water for the farm is abstracted from a well or surface water source.

- 1 hectare of carrots irrigated by spray boom using $127 \text{ m}^3/\text{hectare/day} = 127 \text{ m}^3/\text{day}$

Estimated maximum volume abstracted = 127,000 litres / day ($127 \text{ m}^3/\text{day}$)

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than $25 \text{ m}^3/\text{day}$.

Vegetable Growing – Example 3

A vegetable growing farm with occasional irrigation by tanker or piped abstraction from a well or surface water source.

- Abstraction estimation based on tanker volumes or flow rate to be a maximum volume of approximately $80 \text{ m}^3/\text{day}$ for a number of days in the dry period each year.

Estimated maximum volume abstracted = 80,000 litres / day ($80 \text{ m}^3/\text{day}$)

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than $25 \text{ m}^3/\text{day}$.

Quarries

Quarry – Example 1

A quarry has a maximum discharge of 50 m³ / day. Of this 20 m³ / day is estimated to be attributable to surface water management leaving an estimated maximum abstraction of 30 m³ / day.

Estimated maximum volume abstracted = 30 m³ / day.

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than 25 m³ / day.

Quarry – Example 2

A quarry has a maximum discharge of 10 m³/day, excluding surface water management. It also has dust suppression measures and concrete production.

- 10 m³ / day discharge (10,000 litres)
- 10 nozzles for dust suppression (un-retrieved) used for 2 hours per day at 1 m³ / hour per 10 nozzles (run 10 minutes per hour) = 2 x 1 m³ per day = 2 m³ / day (2,000 litres)
- 5,000 concrete blocks per day at 500 litres / 1,000 blocks made = 5 x 500 litres / day = 2.5 m³/day (2,500 litres)

Estimated maximum volume abstracted = 14.5 m³ / day.

Is registration of the abstraction required? No. Registration is not required as the maximum

Quarry – Example 3

A quarry has a maximum discharge of 15 m³ / day excluding surface water management. It also has dust suppression measures and concrete production.

- 15 m³ / day discharge (15,000 litres)
- 30 nozzles for dust suppression (un-retrieved) used for 2 hours per day at 1 m³ / hour per 10 nozzles (run 10 minutes per hour) = 3 x 2 x 1 m³ per day = 6 m³ / day (6,000 litres)
- 10,000 concrete blocks per day at 500 litres / 1,000 blocks made = 10 x 500 litres / day = 5 m³ / day (5,000 litres)
- 500 m³ of Ready mix concrete (wet mix) per day at 150 litres / m³ wet mix = 500 x 0.15 m³ / day = 75 m³ / day (75,000 litres)

Estimated maximum volume abstracted = 101 m³ / day.

Is registration of the abstraction required? Yes. Registration is required as the maximum volume used is estimated to be greater than 25 m³ / day.