

# Water entitlement market price report – May 2019

## *Murray-Darling Basin*

A Final Report prepared for the Department of Agriculture

Wednesday 26 June 2019

# A I T H E R

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# Introduction

This water entitlement market price report has been prepared by Aither on behalf of the Australian Government Department of Agriculture.

This report includes details regarding Murray-Darling Basin water entitlement prices and trade activity. The entitlement types included within this report are detailed below:

## Southern Murray-Darling Basin Entitlements

SA Murray 3A, Vic 6 Murray HRWS, Vic 6 Murray LRWS, Vic 7 Murray HRWS, Vic 7 Murray LRWS, Vic 6B Lower Broken Creek HRWS, Vic 6B Lower Broken Creek LRWS, Vic 1A Greater Goulburn HRWS, Vic 1A Greater Goulburn LRWS, Vic 1B Boort HRWS, Vic 1B Boort LRWS, Vic 3 Lower Goulburn HRWS, Vic 3 Lower Goulburn LRWS, Vic 4C Lower Campaspe HRWS, Vic 4A Campaspe (Eppalock to WWC) HRWS, Vic 4A Campaspe (Eppalock to WWC) LRWS, Vic 5A Loddon HRWS, Vic 5A Loddon LRWS, Vic 5B Bullarook HRWS, Vic 5B Bullarook LRWS, NSW Murray HS, NSW Murray GS, NSW Murray Irrigation Limited GS, NSW Murrumbidgee HS, NSW Murrumbidgee GS, NSW Lower Darling HS, NSW Lower Darling GS.

## Northern Murray-Darling Basin Entitlement types

NSW Macquarie GS, NSW Lower Namoi GS, NSW Upper Namoi GS, NSW Gwydir GS, NSW Border Rivers GS A, NSW Border Rivers GS B, NSW Barwon-Darling Unregulated A, NSW Barwon-Darling Unregulated B, NSW Barwon-Darling Unregulated C, NSW Lachlan GS, QLD Condamine-Balonne (St George) Supplemented, Condamine-Balonne QLD Condamine-Balonne (Lower Balonne) Unsupplemented, QLD Condamine-Balonne (Upper Condamine) Unsupplemented, QLD Central Condamine Alluvium Groundwater (1, 2, 3 and 4), QLD Upper Condamine Alluvium Groundwater (Dalrymple Creek) Groundwater, QLD Upper Condamine Alluvium Groundwater (Oakey Creek) Groundwater, QLD Condamine-Balonne Lower Balonne Overland flow, QLD Border Rivers Supplemented (Macintyre Brook), QLD Border Rivers Unsupplemented.

A brief summary has been provided below:



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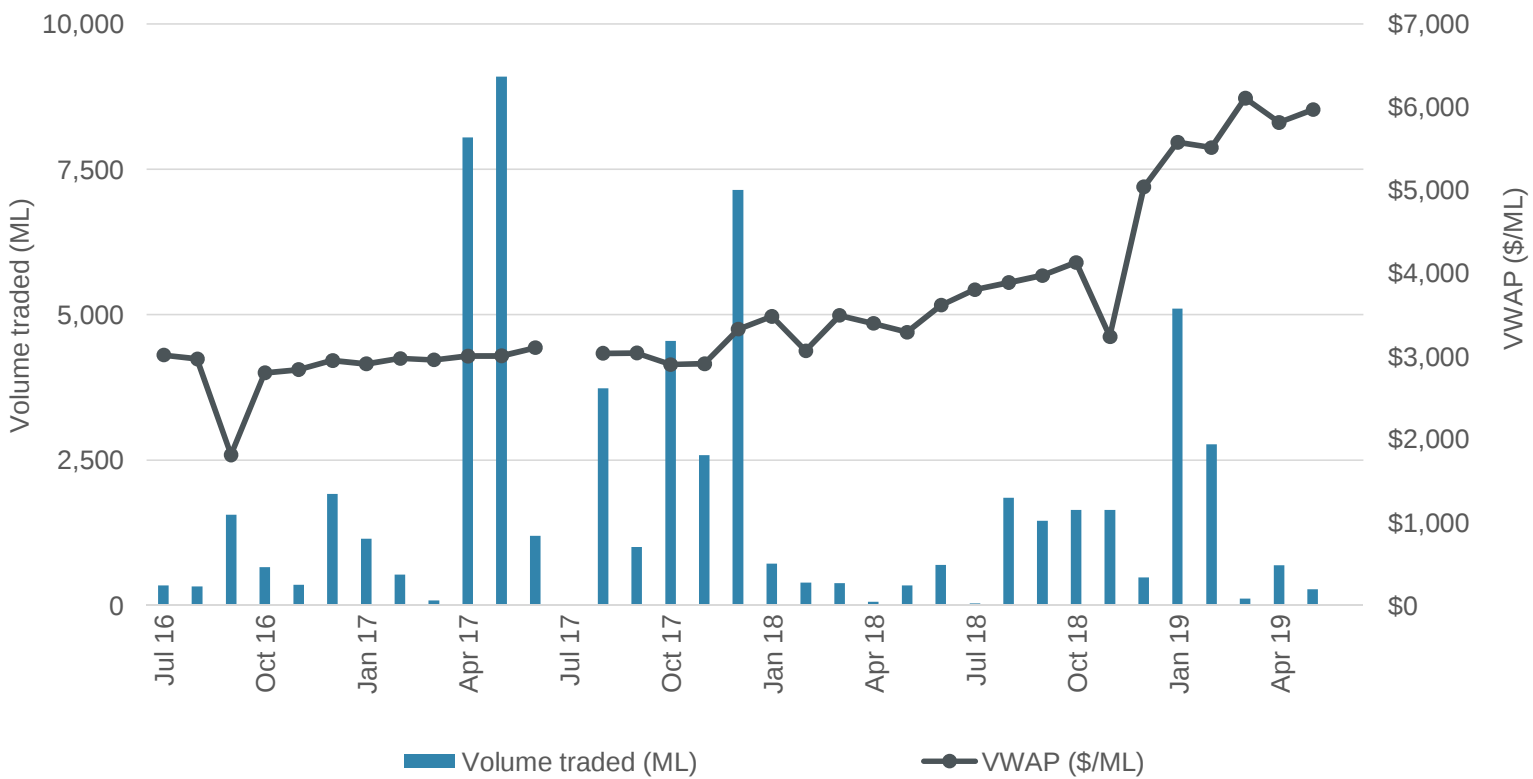
# SA Murray

## Entitlement market overview, May 2019

| Entitlement type | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| SA Murray 3A     | \$5,967                  | \$6,300                       | 12                                              | 277                                              | 23                                      | \$5,800 - \$6,000                            |

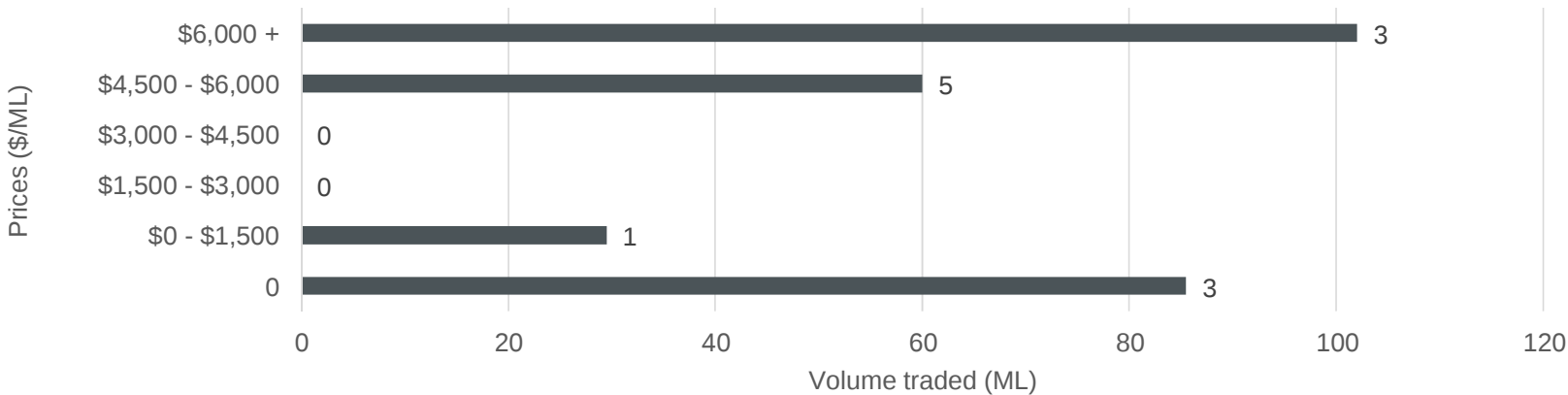
Source: Aither, 2019. Based on the SA Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the SA Water Register.

## Market price range, May 2019



Source: Aither, 2019. Based on the SA Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

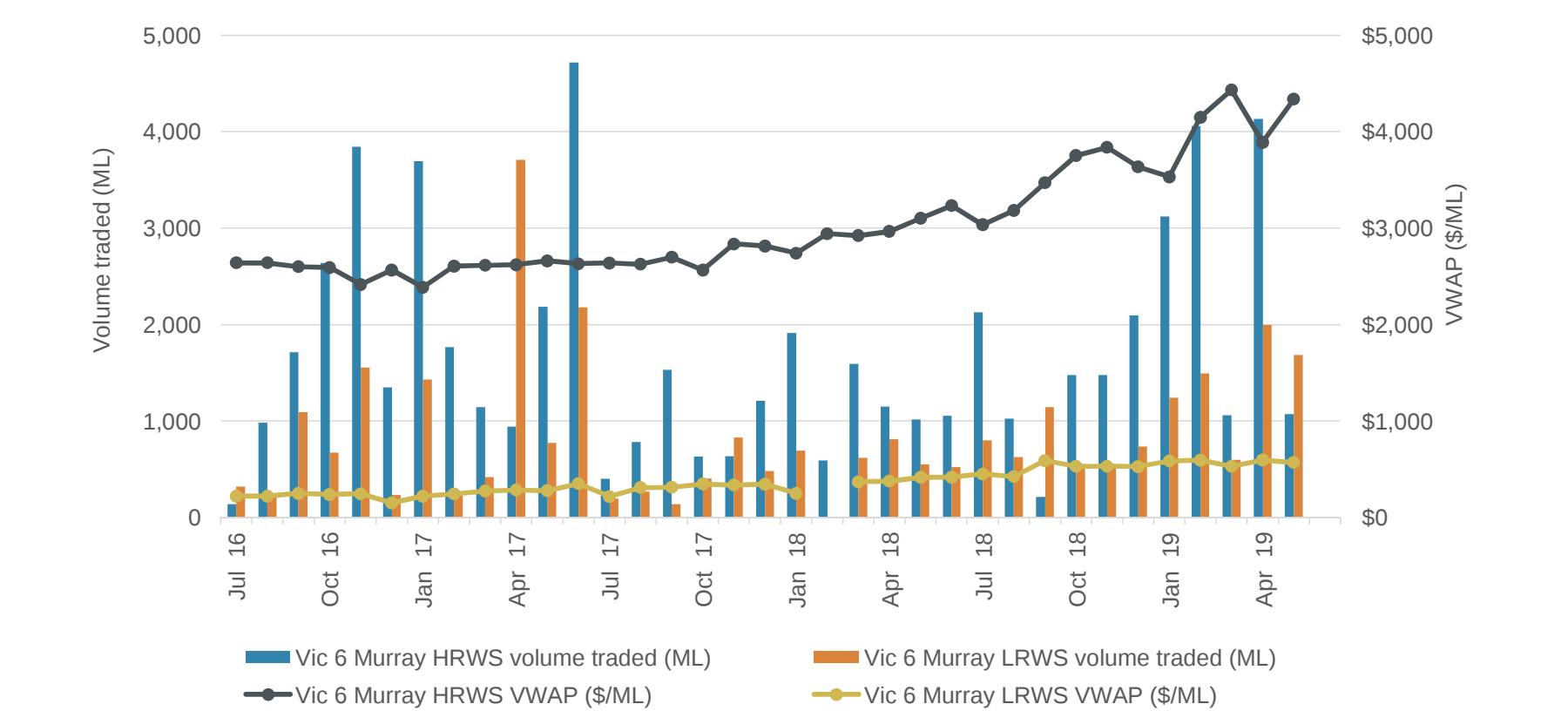
# Vic 6 Murray

## Entitlement market overview, May 2019

| Entitlement type  | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|-------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 6 Murray HRWS | \$4,339                  | \$4,500                       | 16                                              | 1,070                                            | 67                                      | \$4,500 - \$5,000                            |
| Vic 6 Murray LRWS | \$569                    | \$580                         | 14                                              | 1,683                                            | 120                                     | \$500 - \$600                                |

Source: Aither, 2019 Based on the VIC Water Register and quotes sourced from water brokers.

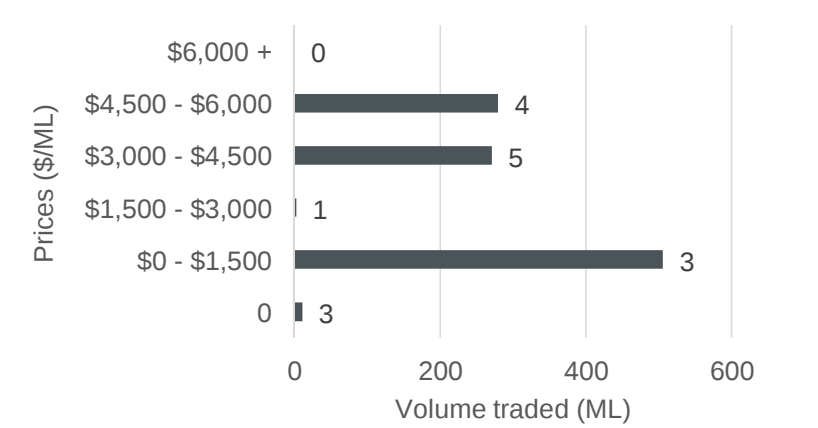
## Market prices and volumes, July 2016 to June 2019



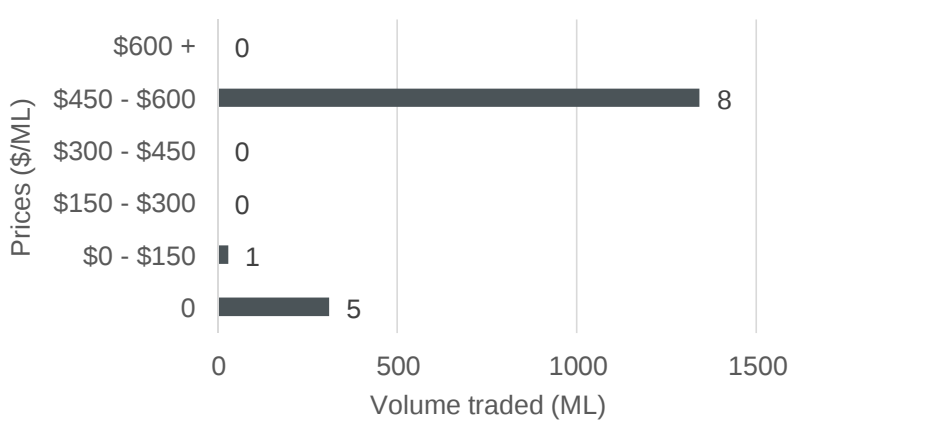
Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

### Vic 6 Murray HRWS



### Vic 6 Murray LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

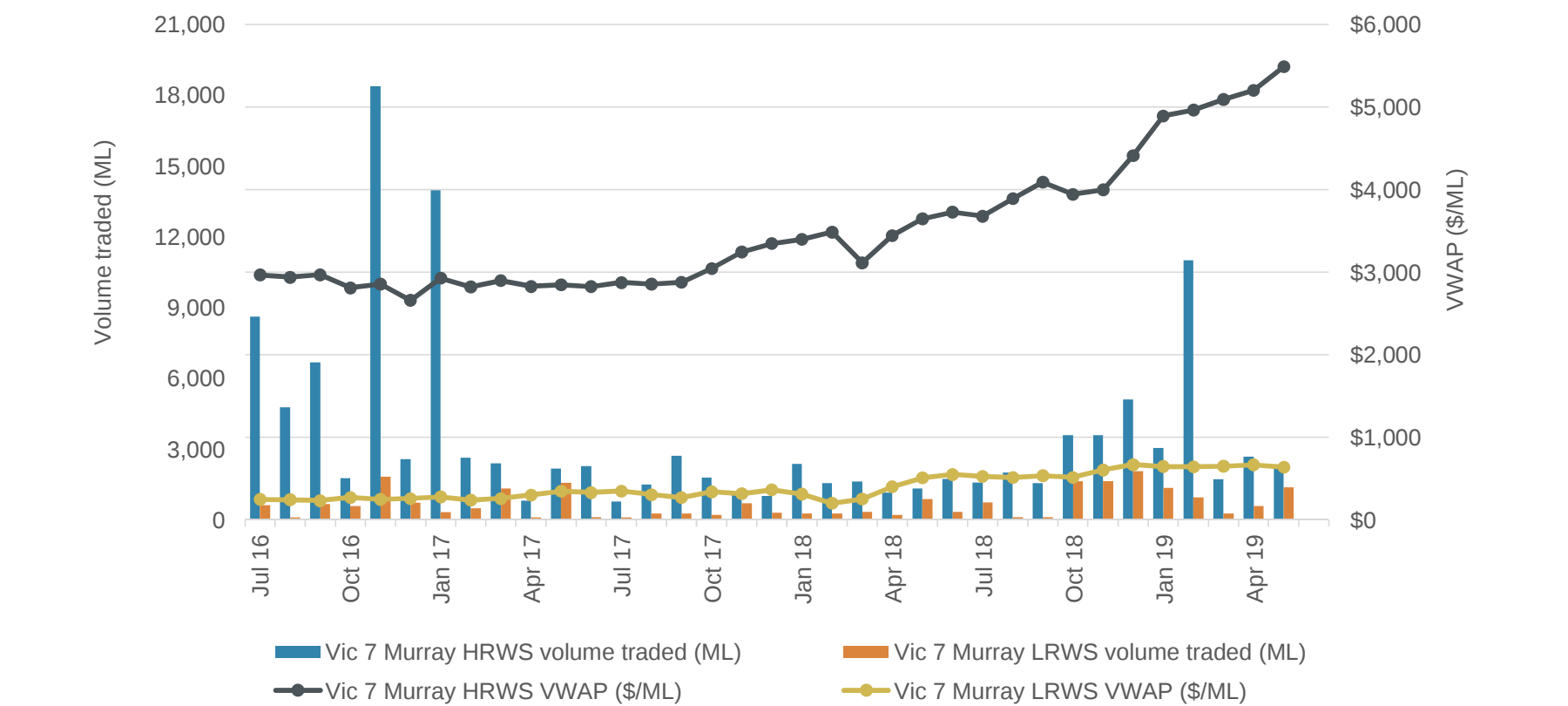
# Vic 7 Murray

## Entitlement market overview, May 2019

| Entitlement type  | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|-------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| Vic 7 Murray HRWS | \$5,489                  | \$5,995                       | 59                                        | 2,323                                            | 39                                | \$5,400 - \$5,650                      |
| Vic 7 Murray LRWS | \$635                    | \$660                         | 20                                        | 1,362                                            | 68                                | \$500 - \$650                          |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

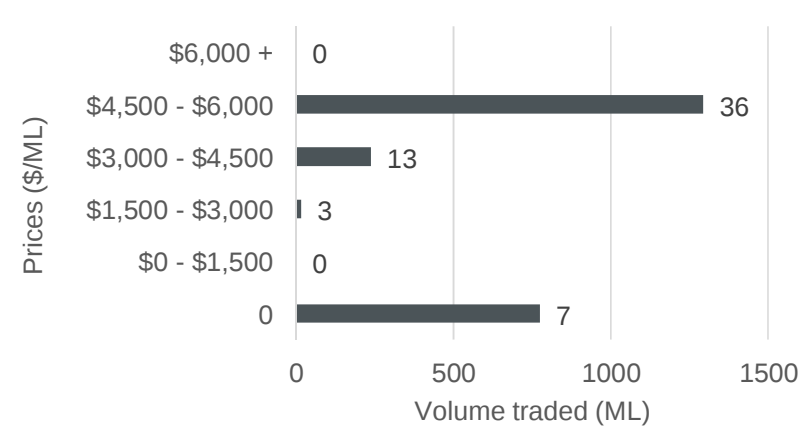
## Market prices and volumes, July 2016 to June 2019



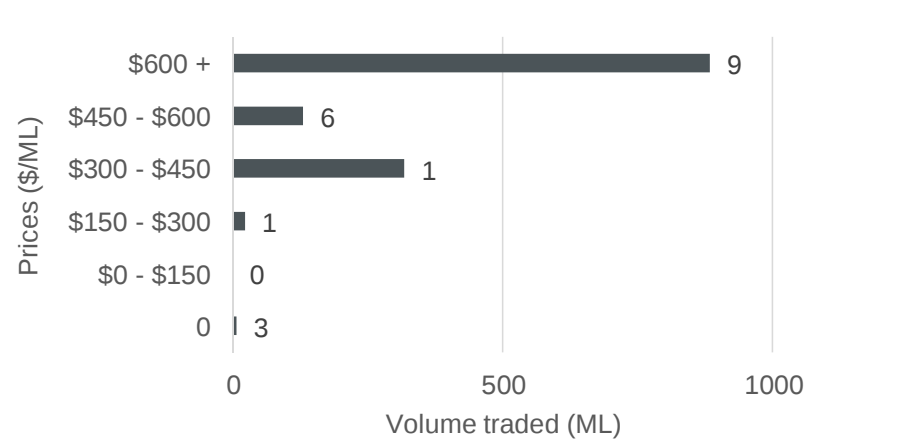
Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

### Vic 7 Murray HRWS



### Vic 7 Murray LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

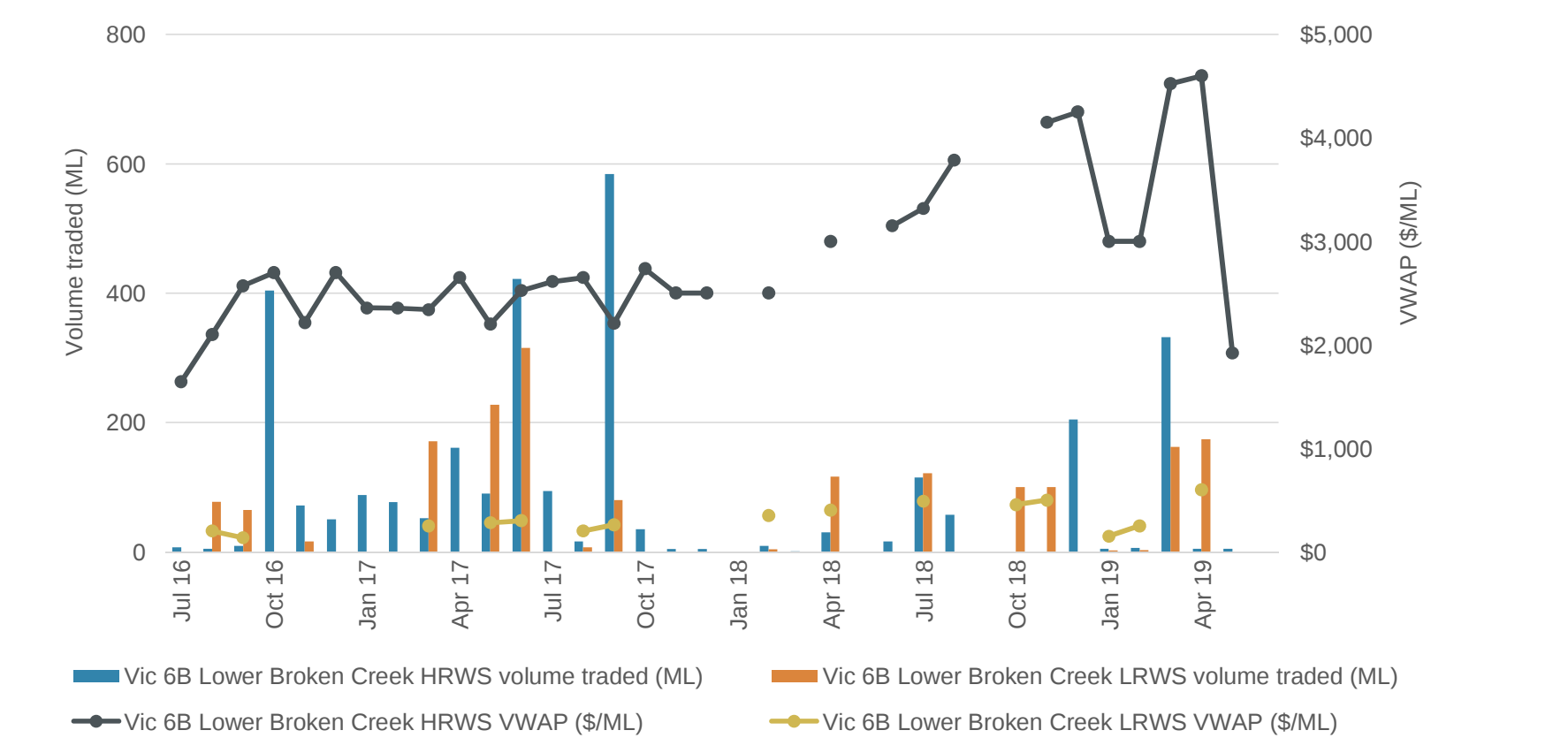
# Vic 6B Lower Broken Creek

## Entitlement market overview, May 2019

| Entitlement type                  | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|-----------------------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 6B Lower Broken Creek<br>HRWS | \$1,920                  | \$2,100                       | 2                                               | 5                                                | 3                                       | -                                            |
| Vic 6B Lower Broken Creek<br>LRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

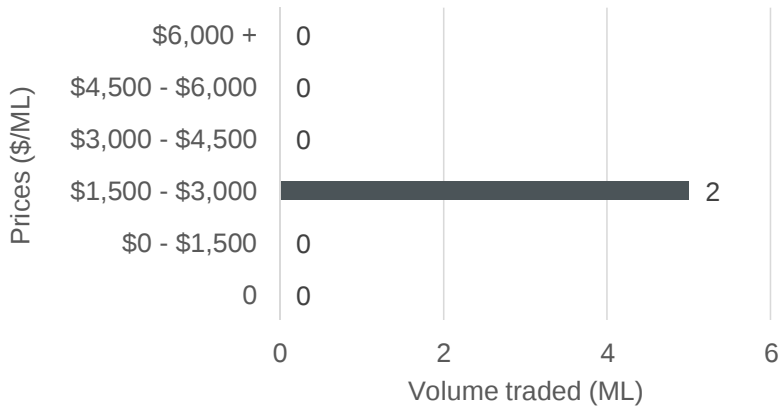
## Market prices and volumes, July 2016 to June 2019



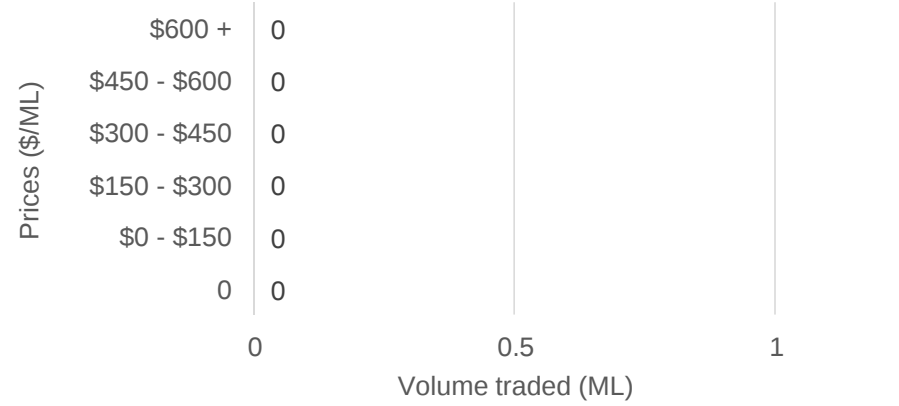
Source: Aither, 2019. Based on the VIC Water Registers.

## Market price range, May 2019

### Vic 6B Lower Broken Creek HRWS



### Vic 6B Lower Broken Creek LRWS



Source: Aither, 2019. Based on the VIC Water Registers.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

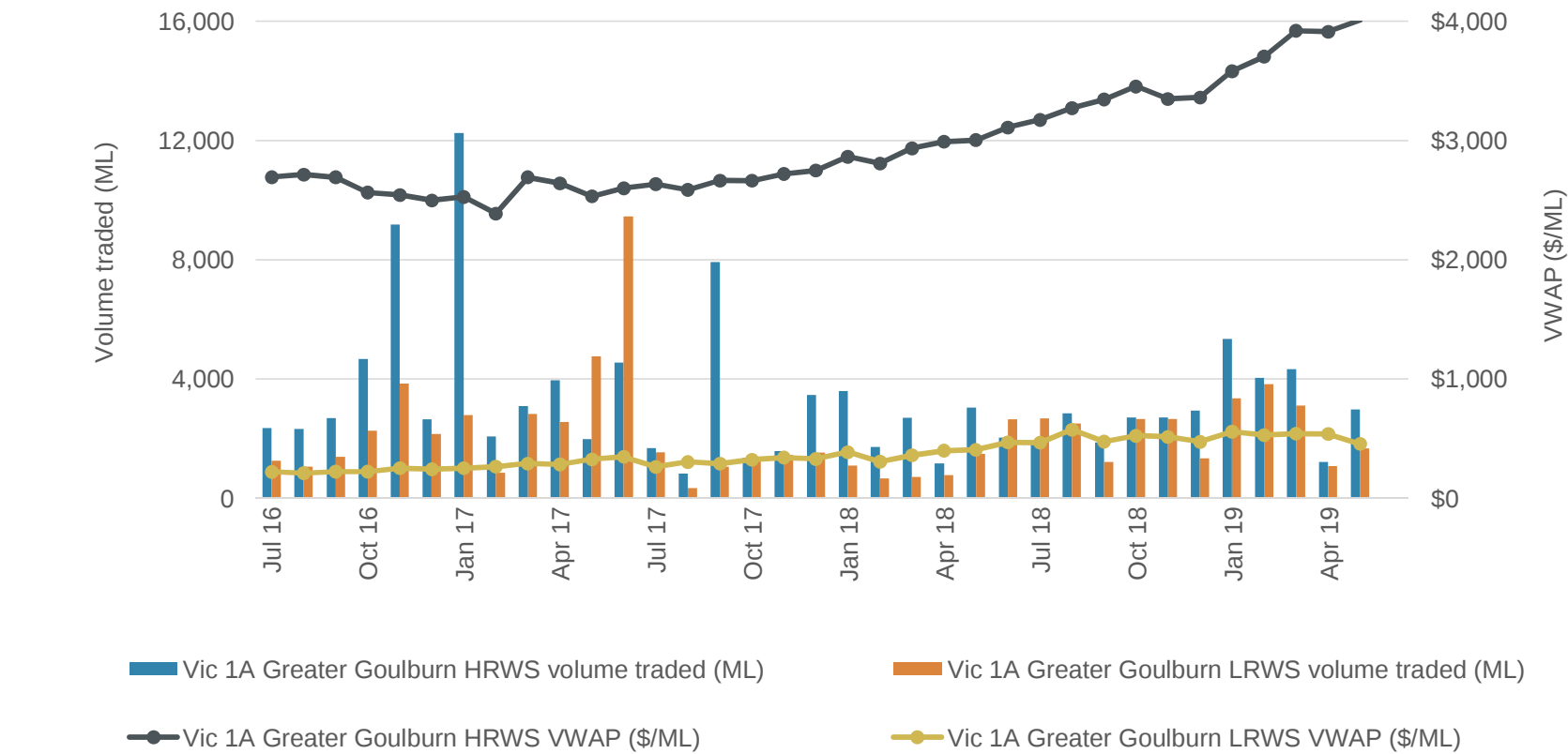
# Vic 1A Greater Goulburn

## Entitlement market overview, May 2019

| Entitlement type             | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|------------------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| Vic 1A Greater Goulburn HRWS | \$4,009                  | \$5,250                       | 59                                        | 2,978                                            | 50                                | \$3,800 - \$4,200                      |
| Vic 1A Greater Goulburn LRWS | \$455                    | \$1,100                       | 26                                        | 1,668                                            | 64                                | \$380 - \$420                          |

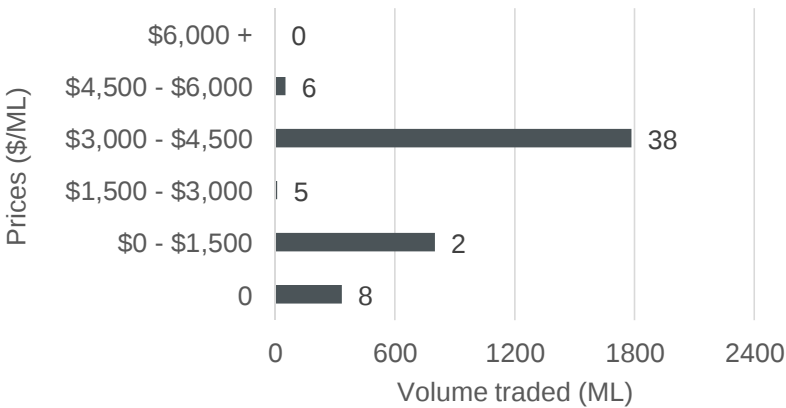
Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019

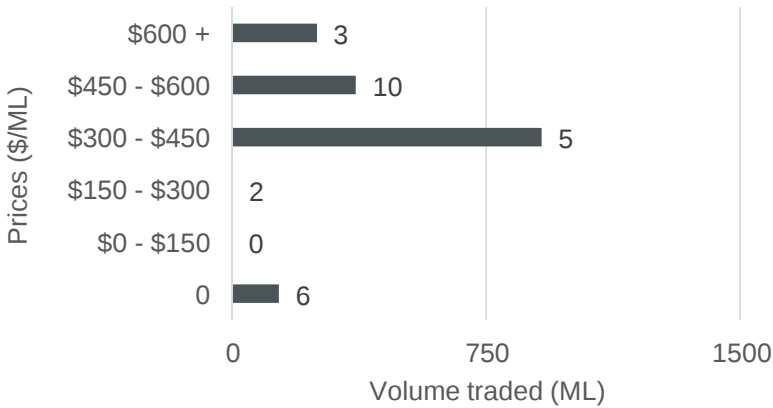


Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019 Vic 1A Greater Goulburn HRWS



## Vic 1A Greater Goulburn LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

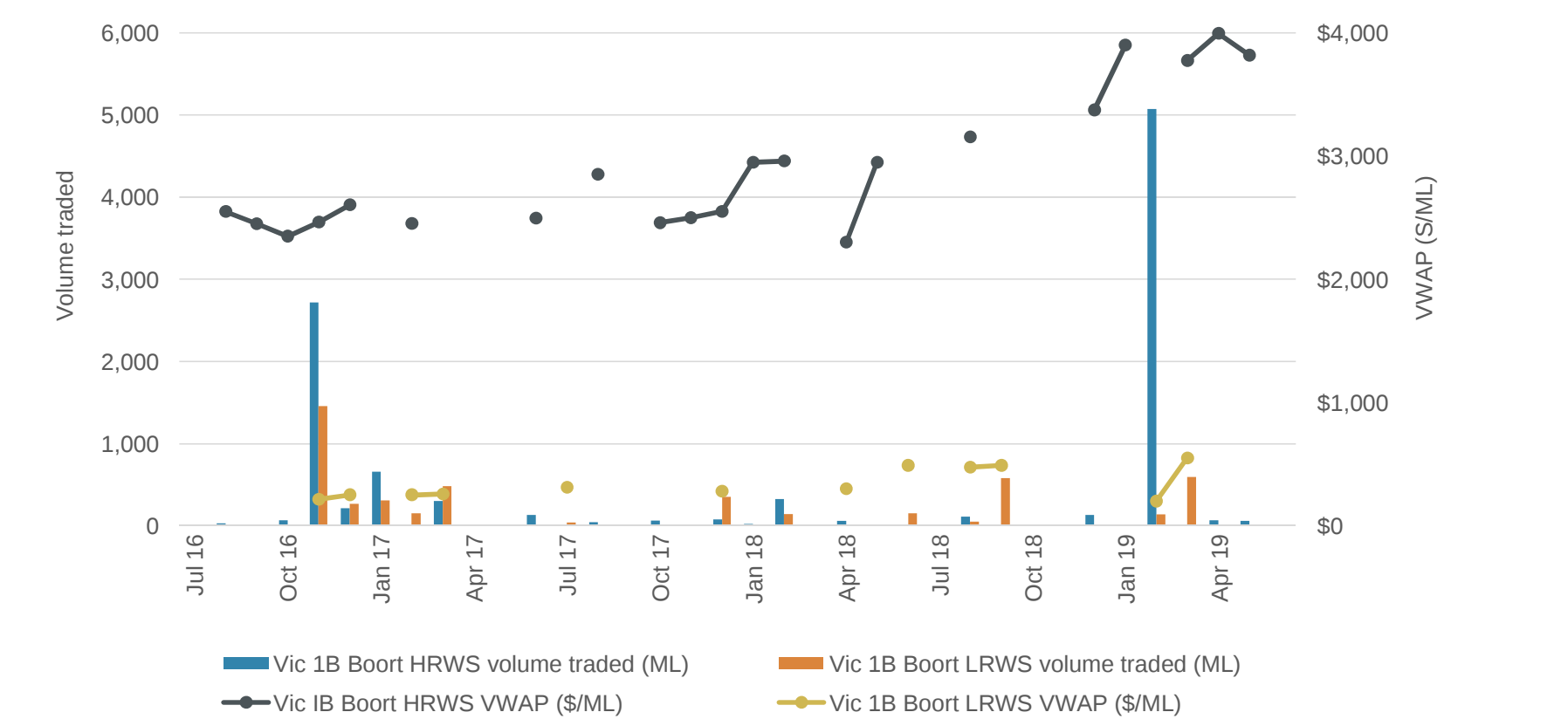
# Vic 1B Boort

## Entitlement market overview, May 2019

| Entitlement type  | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|-------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| Vic 1B Boort HRWS | \$3,818                  | \$4,243                       | 4                                         | 61                                               | 15                                | -                                      |
| Vic 1B Boort LRWS | -                        | -                             | -                                         | -                                                | -                                 | -                                      |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

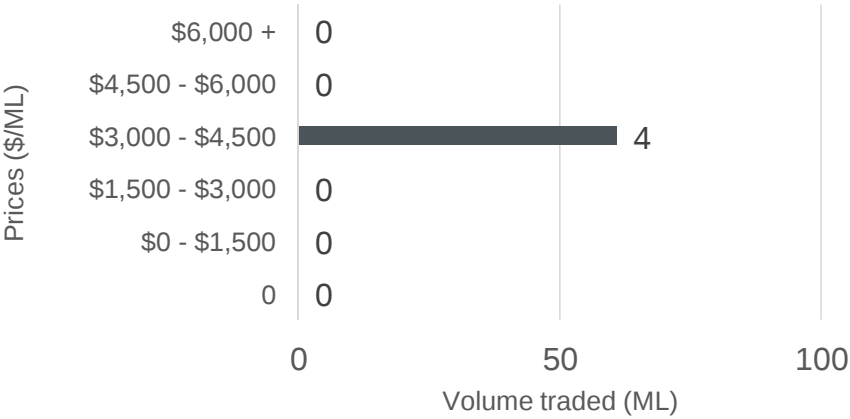
## Market prices and volumes, July 2016 to June 2019



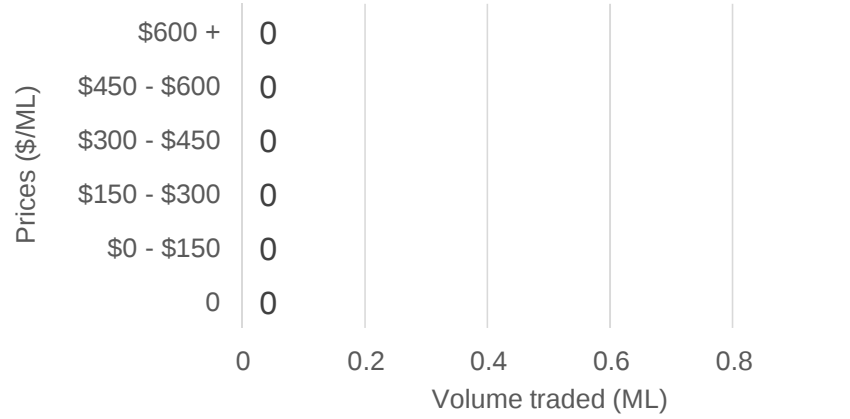
Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

### Vic 1B Boort HRWS



### Vic 1B Boort LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

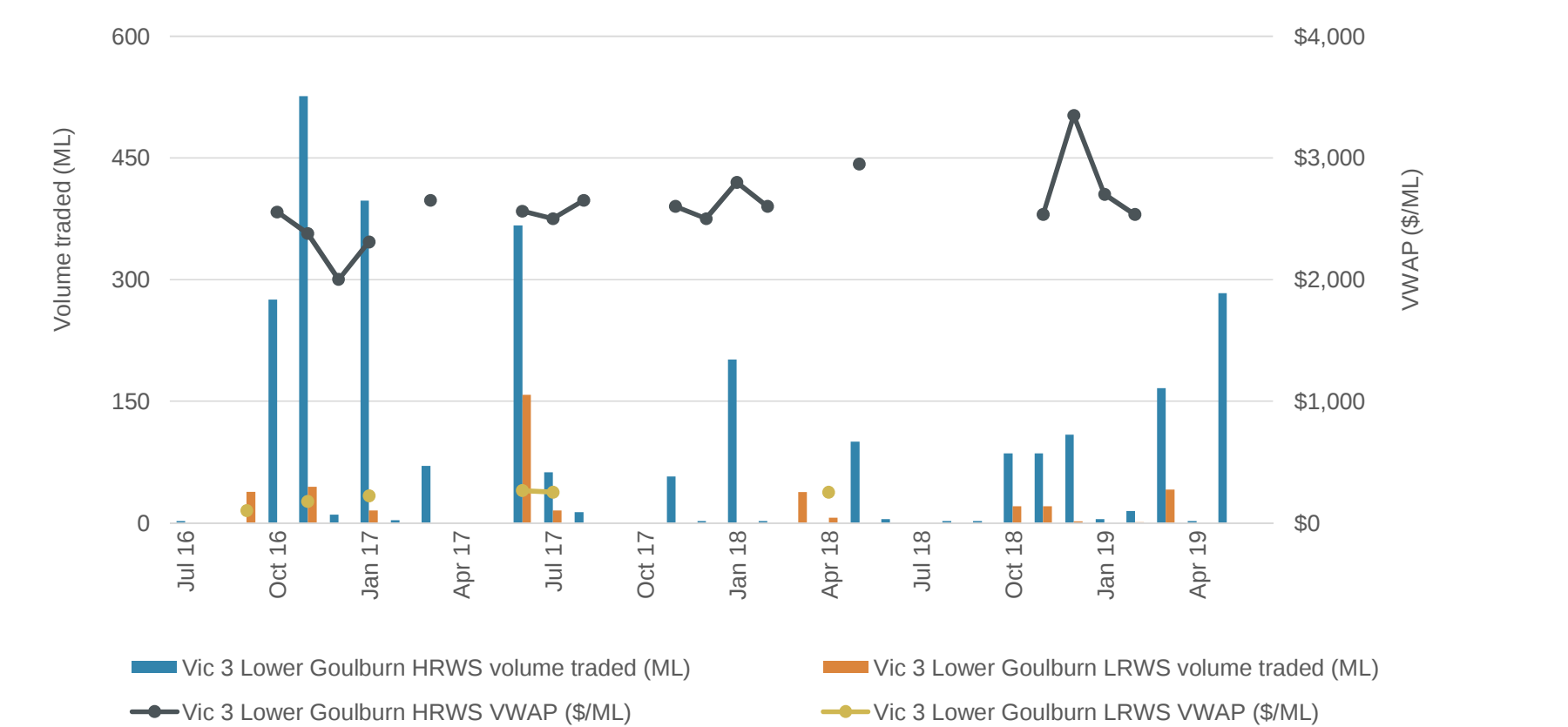
# Vic 3 Lower Goulburn

## Entitlement market overview, May 2019

| Entitlement type          | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|---------------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 3 Lower Goulburn HRWS | \$4,094                  | \$4,500                       | 4                                               | 283                                              | 71                                      | -                                            |
| Vic 3 Lower Goulburn LRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

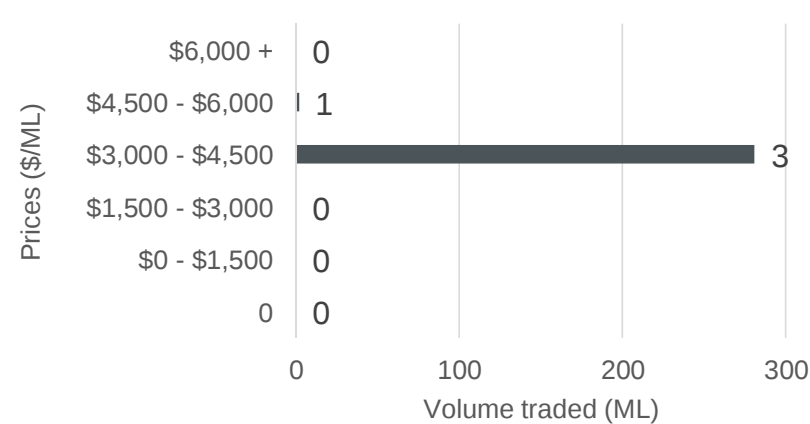
## Market prices and volumes, July 2016 to June 2019



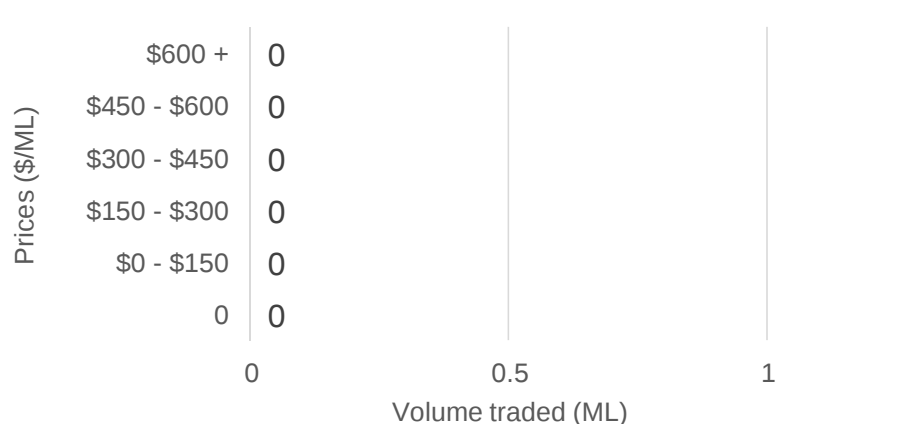
Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

### Vic 3 Lower Goulburn HRWS



### Vic 3 Lower Goulburn LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

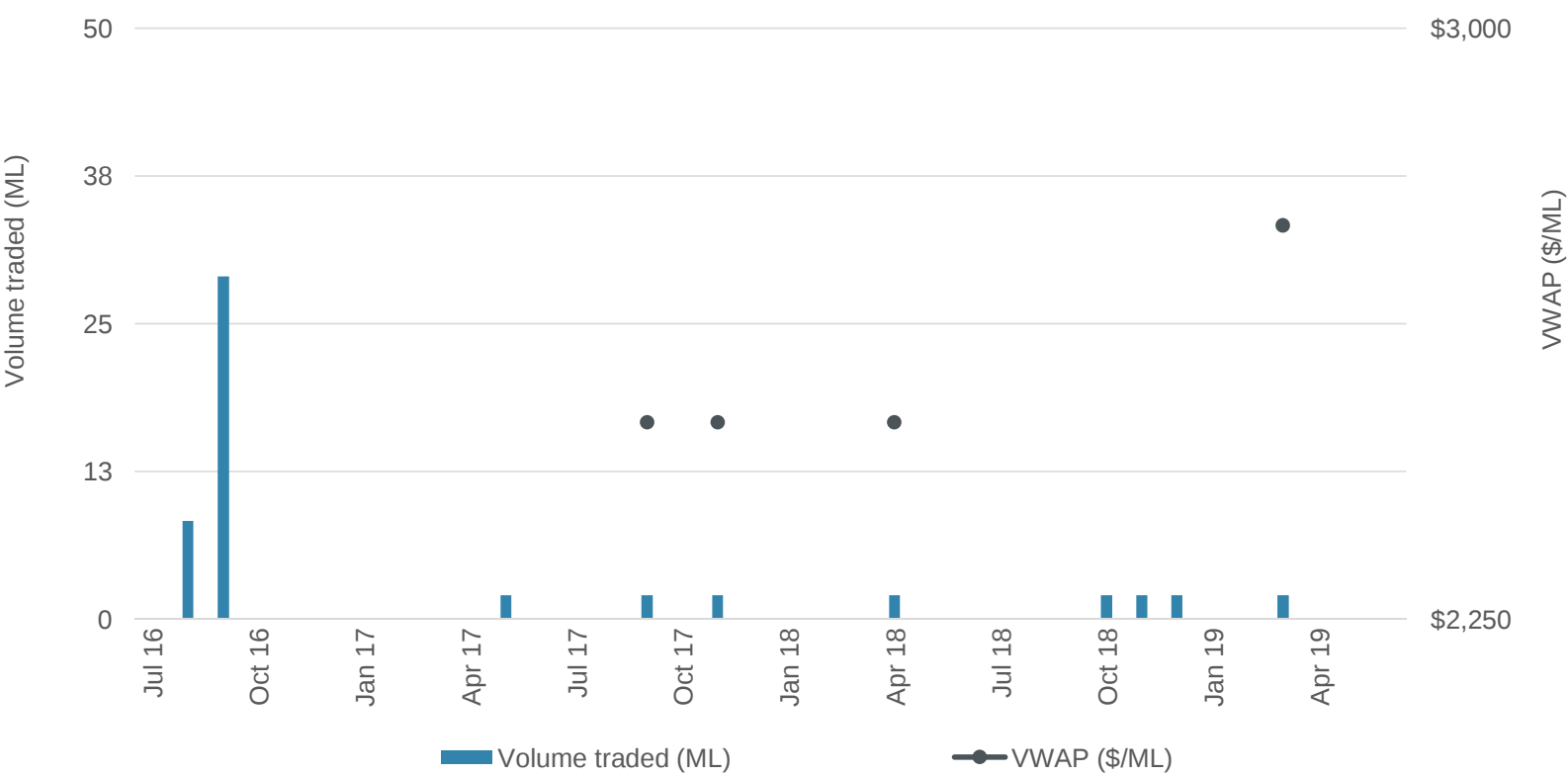
# Vic 4C Lower Campaspe

## Entitlement market overview, May 2019

| Entitlement type           | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|----------------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 4C Lower Campaspe HRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

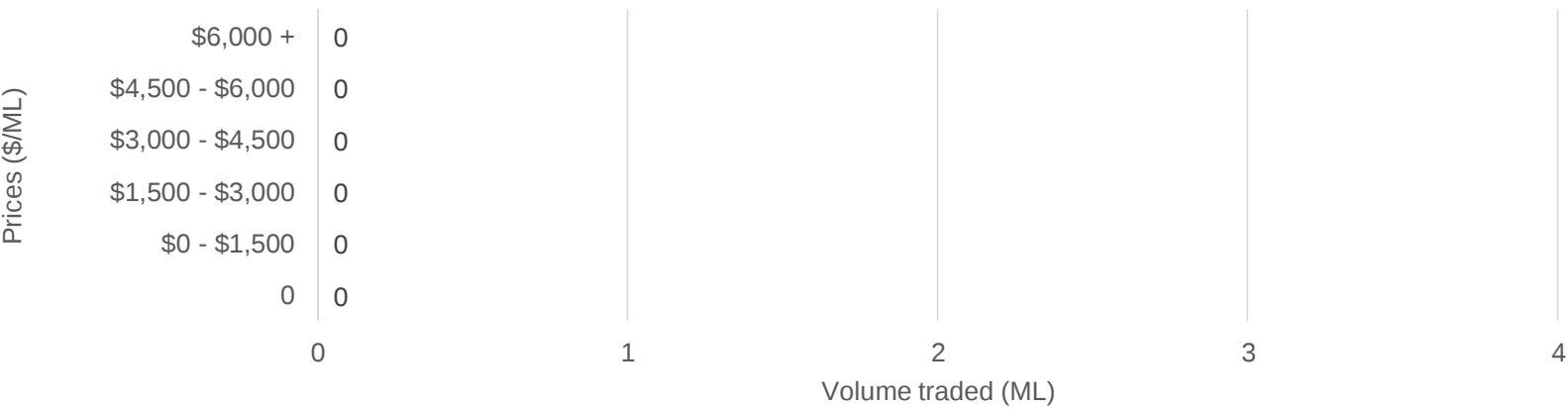
Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

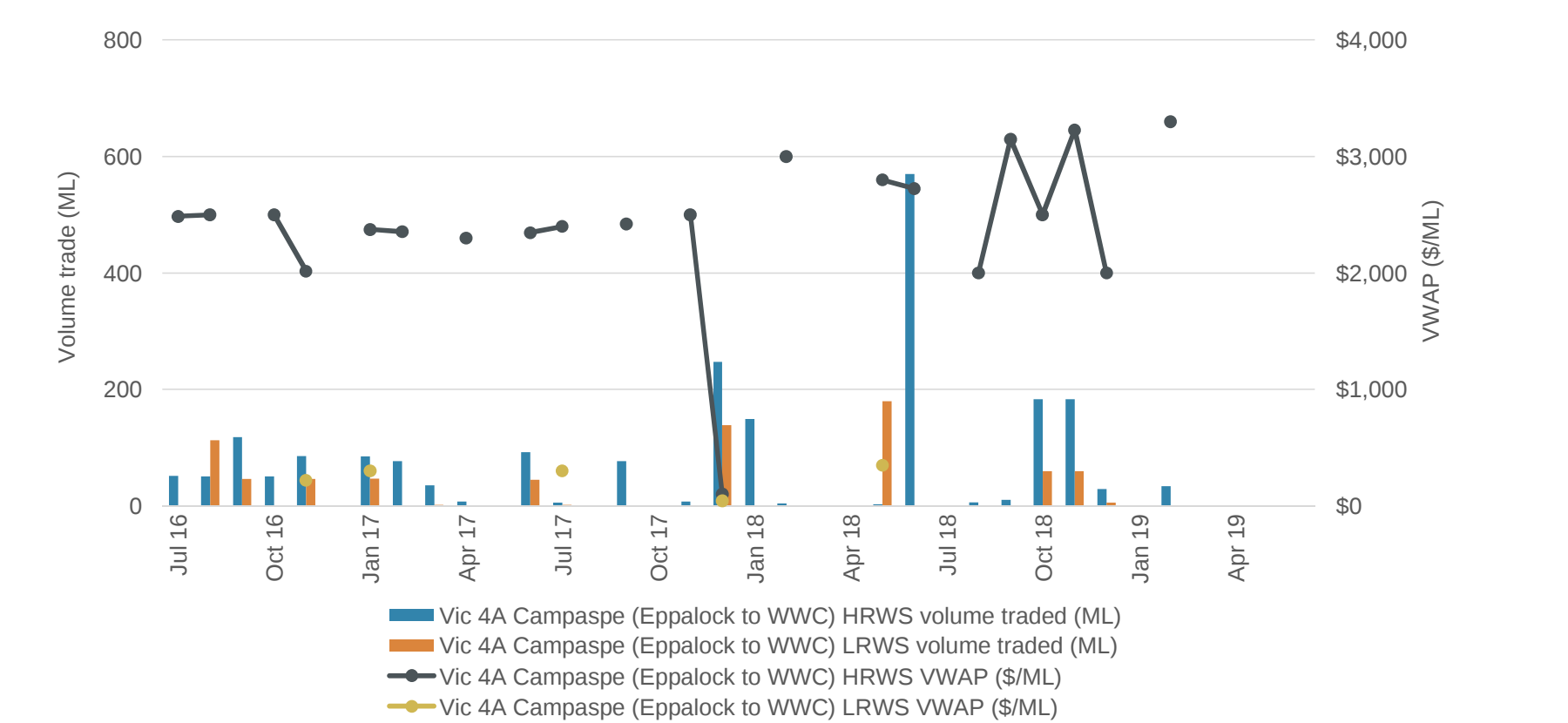
# Vic 4A Campaspe (Eppalock to WWC)

## Entitlement market overview, May 2019

| Entitlement type                       | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|----------------------------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 4A Campaspe (Eppalock to WWC) HRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |
| Vic 4A Campaspe (Eppalock to WWC) LRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

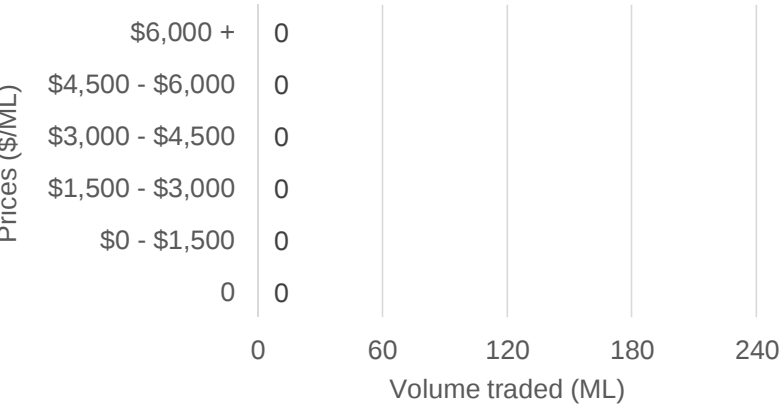
## Market prices and volumes, July 2016 to June 2019



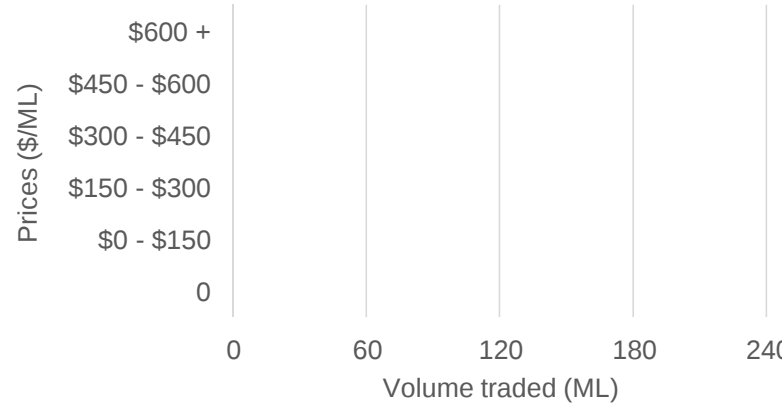
Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

### Vic 4A Campaspe (Eppalock to WWC) HRWS



### Vic 4A Campaspe (Eppalock to WWC) LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

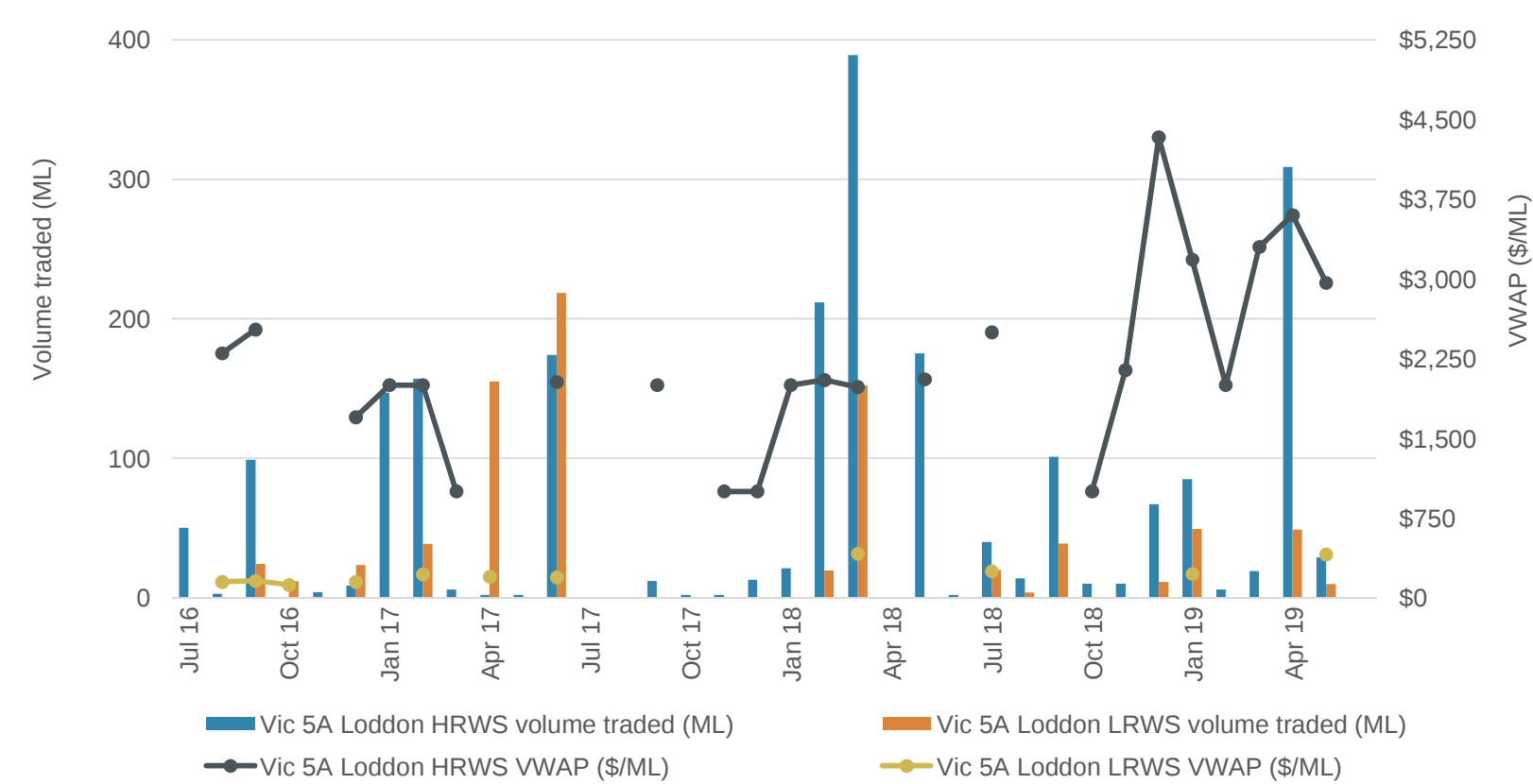
# Vic 5A Loddon

## Entitlement market overview, May 2019

| Entitlement type   | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|--------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 5A Loddon HRWS | \$2,963                  | \$3,000                       | 3                                               | 29                                               | 10                                      | -                                            |
| Vic 5A Loddon LRWS | \$408                    | \$408                         | 1                                               | 10                                               | 10                                      | -                                            |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

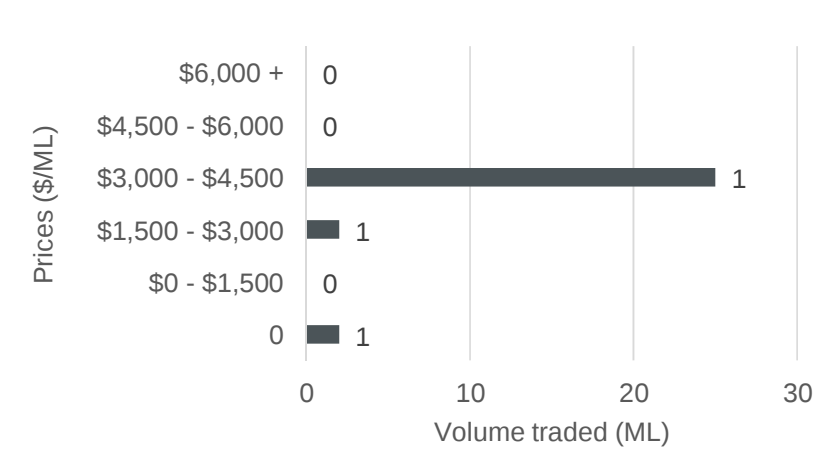
## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

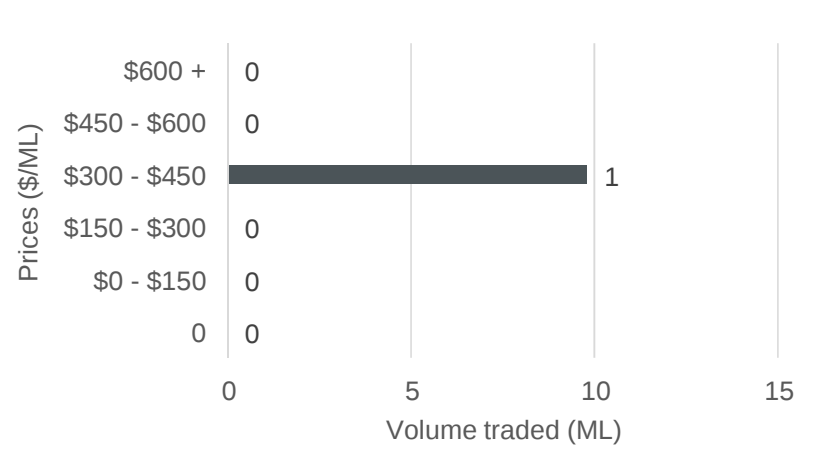
### Vic 5A Loddon HRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

### Vic 5A Loddon LRWS



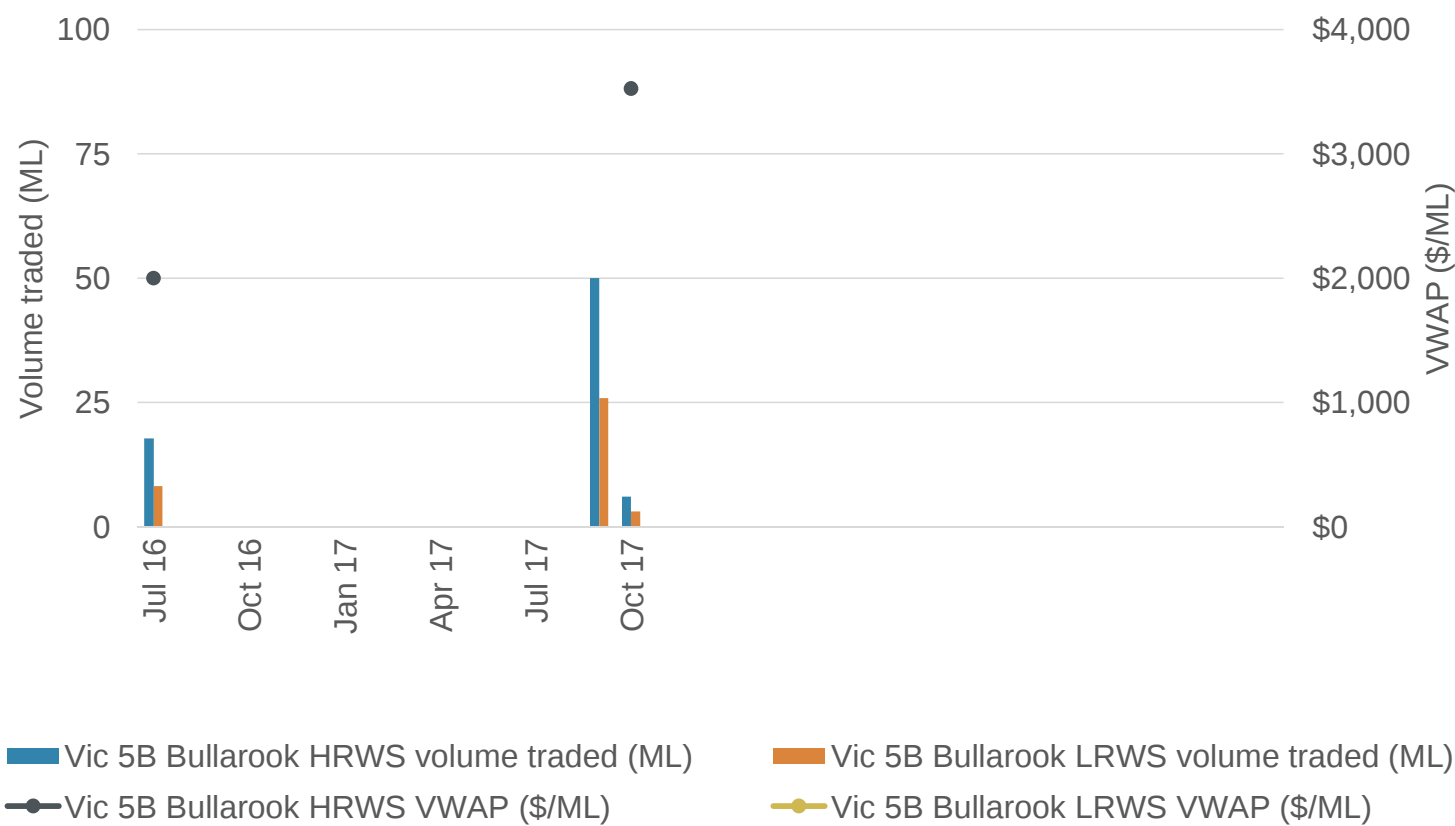
# Vic 5B Bullarook

## Entitlement market overview, May 2019

| Entitlement type      | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|-----------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| Vic 5B Bullarook HRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |
| Vic 5B Bullarook LRWS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

Source: Aither, 2019. Based on the VIC Water Register and quotes sourced from water brokers.

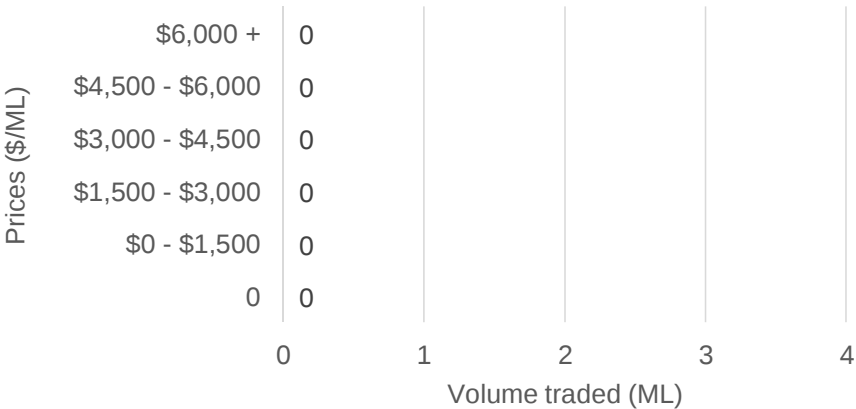
## Market prices and volumes, July 2016 to June 2019



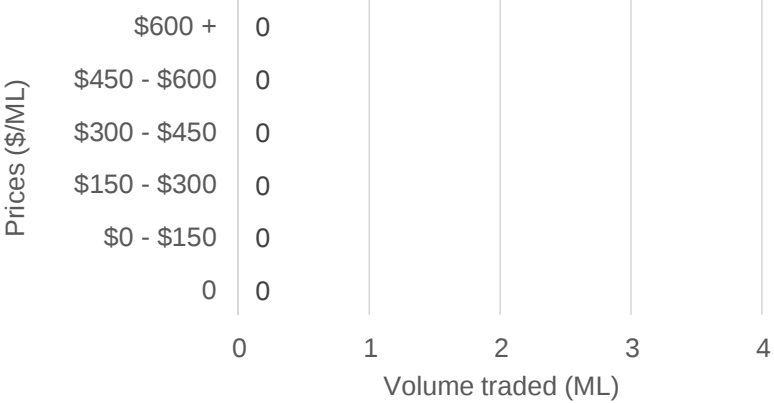
Source: Aither, 2019. Based on the VIC Water Register.

## Market price range, May 2019

### Vic 5B Bullarook HRWS



### Vic 5B Bullarook LRWS



Source: Aither, 2019. Based on the VIC Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

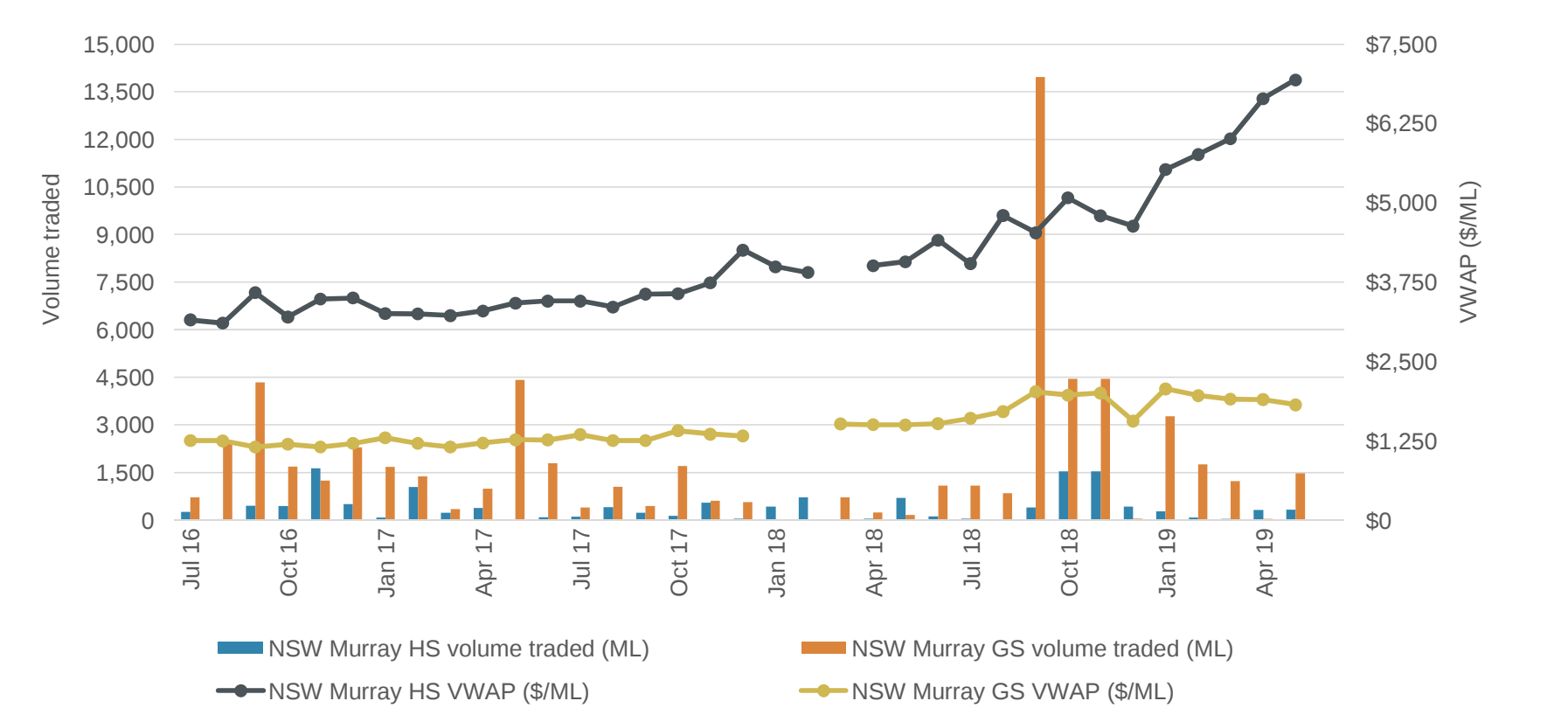
# NSW Murray

## Entitlement market overview, May 2019

| Entitlement type | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Murray HS    | \$6,939                  | \$7,055                       | 7                                         | 325                                              | 46                                | \$6,450 - \$6,750                      |
| NSW Murray GS    | \$1,819                  | \$1,825                       | 6                                         | 1,471                                            | 245                               | \$1,500 - \$1,750                      |

Source: Aither, 2019. Based on the NSW Water Register, and quotes sourced from water brokers.

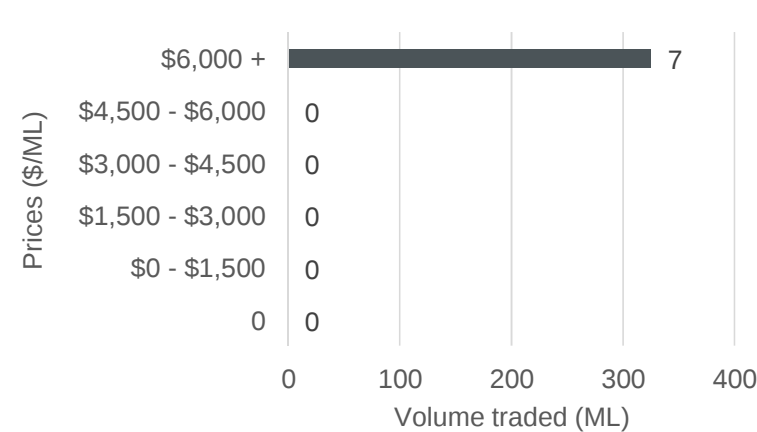
## Market prices and volumes, July 2016 to June 2019



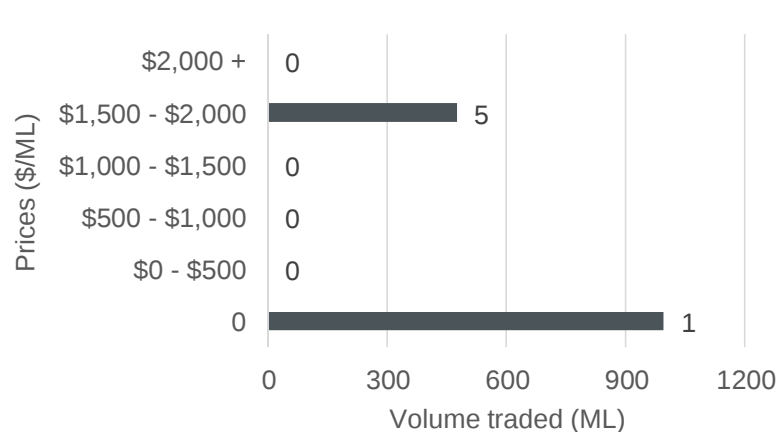
Source: Aither, 2019. Based on the NSW Water Registers.

## Market price range, May 2019

### NSW Murray HS



### NSW Murray GS



Source: Aither, 2019. Based on the NSW Water Registers.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

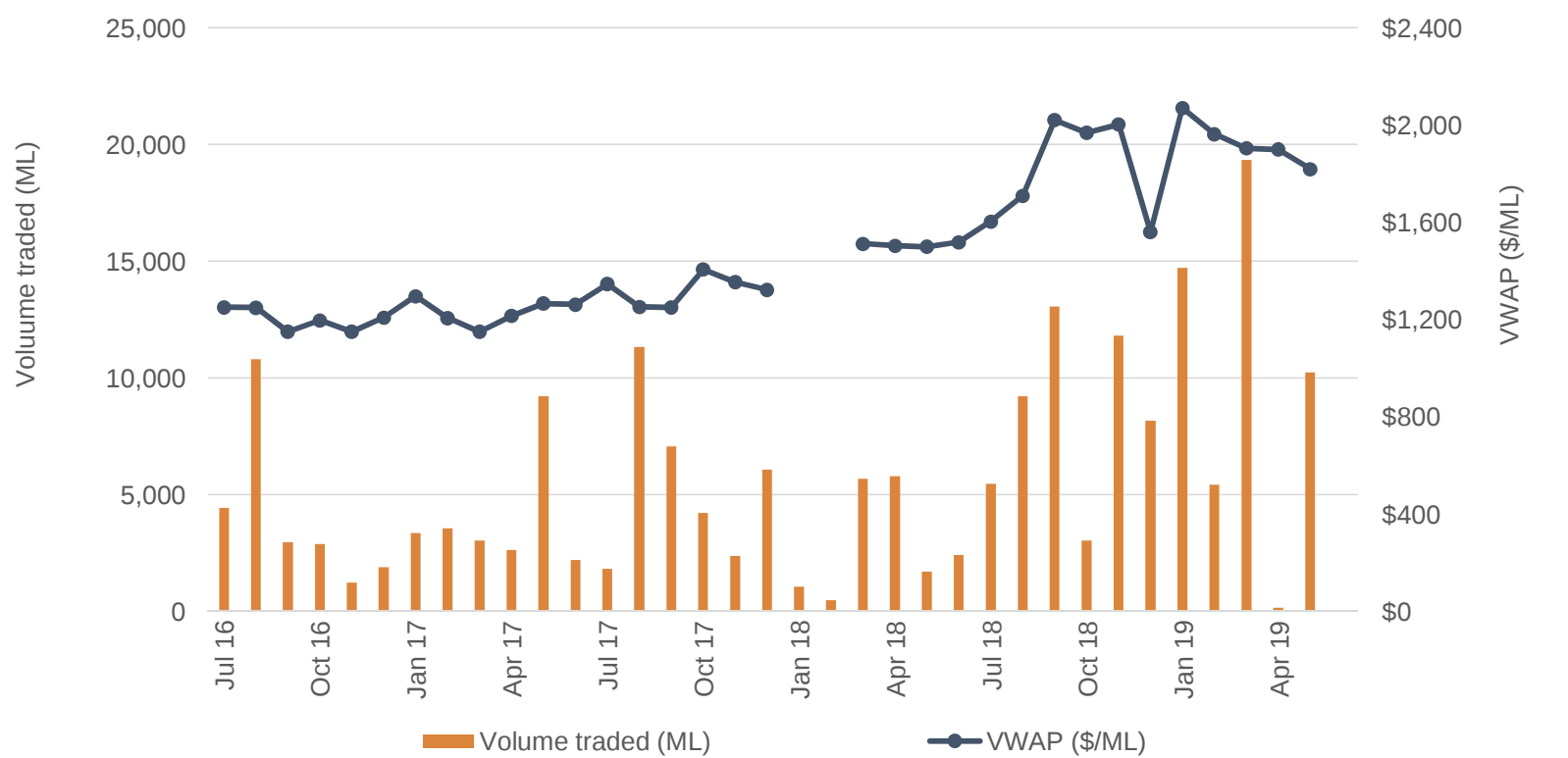
# NSW Murray Irrigation Limited

## Entitlement market overview, May 2019

| Entitlement type                 | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML) May 2019 | Number of trades (unfiltered) May 2019 | Volume of trade (unfiltered) (ML) May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|----------------------------------|--------------------------|----------------------------|----------------------------------------|--------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Murray Irrigation Limited GS | \$1,819                  | \$1,825                    | 26                                     | 10,244                                     | 394                               | \$1,500 - \$1,750                      |

Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.  
Note: As trade prices within NSW Murray Irrigation GS are not reported Aither has presented NSW Murray GS on river prices instead given the common characteristics that these entitlements share.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the NSW Water Register.

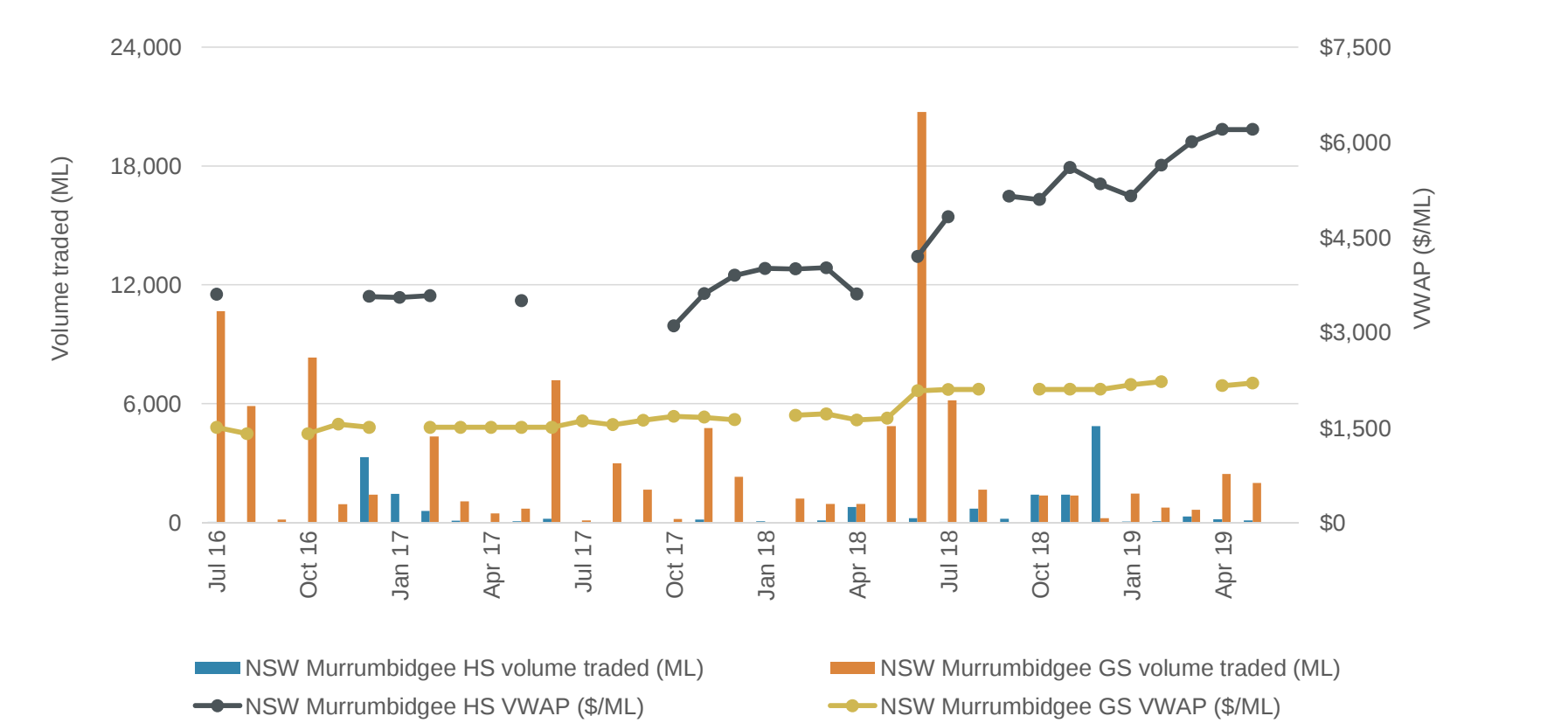
# NSW Murrumbidgee

## Entitlement market overview, May 2019

| Entitlement type    | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|---------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Murrumbidgee HS | \$6,200                  | \$6,200                       | 1                                         | 100                                              | 100                               | \$6,800 - \$7,000                      |
| NSW Murrumbidgee GS | \$2,200                  | \$2,200                       | 1                                         | 2,000                                            | 2,000                             | \$1,850 - \$2,000                      |

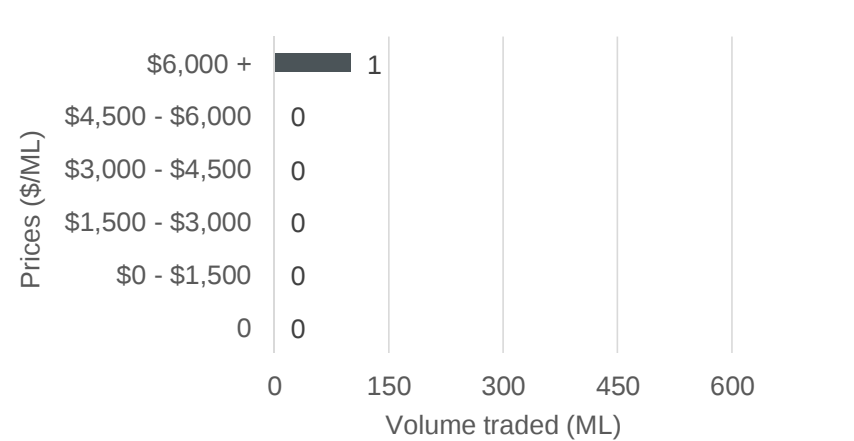
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019

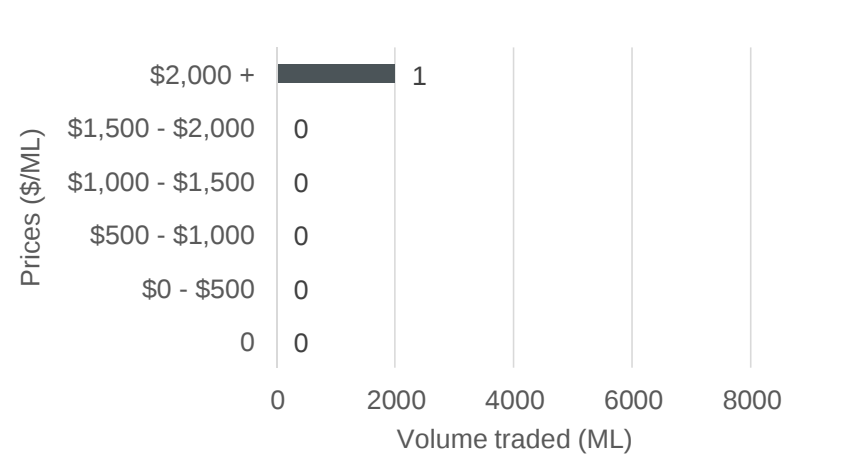


Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019 NSW Murrumbidgee HS



## NSW Murrumbidgee GS



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

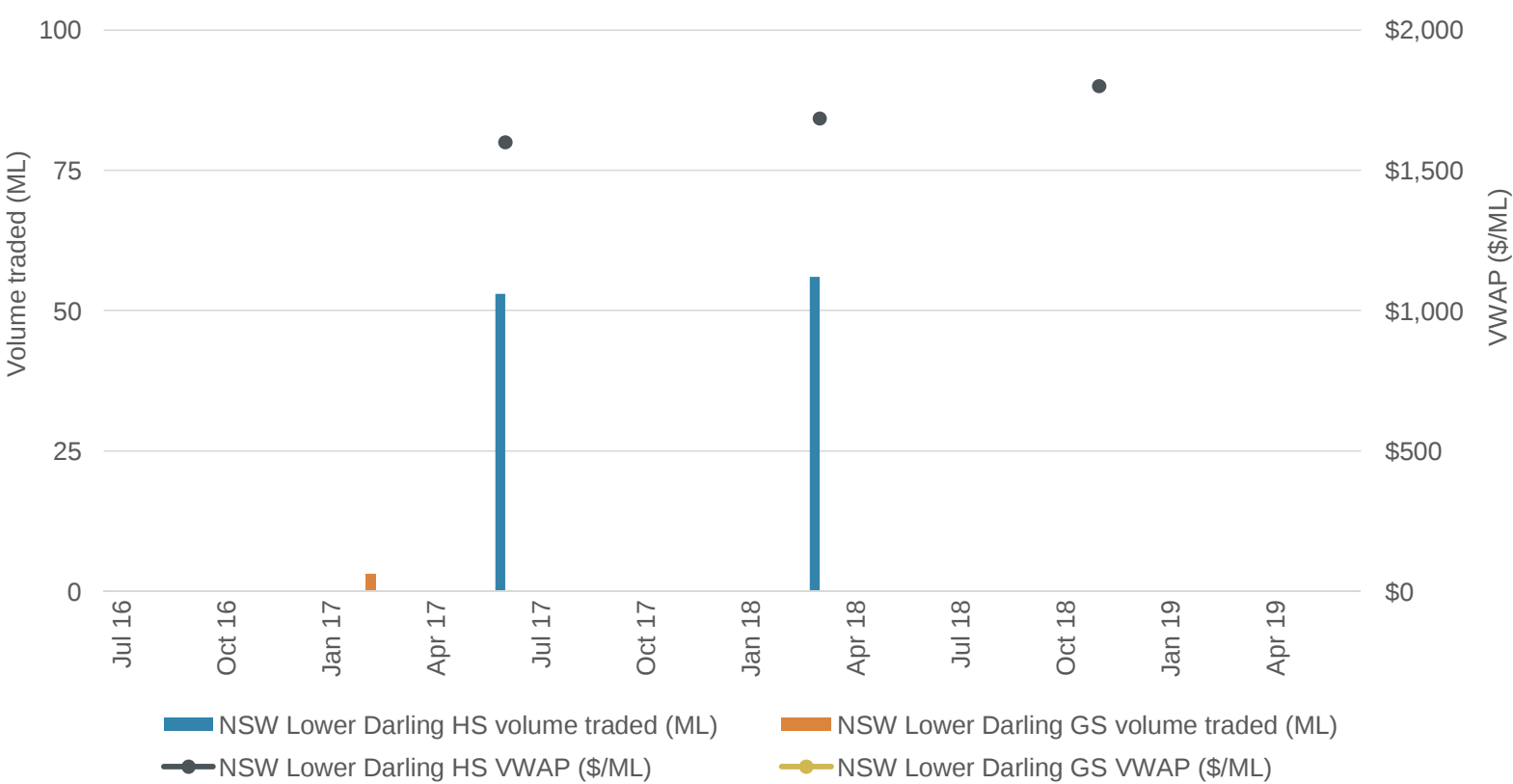
# NSW Lower Darling

## Entitlement market overview, May 2019

| Entitlement type     | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|----------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Lower Darling HS | -                        | -                             | -                                         | -                                                | -                                 | -                                      |
| NSW Lower Darling GS | -                        | -                             | -                                         | -                                                | -                                 | -                                      |

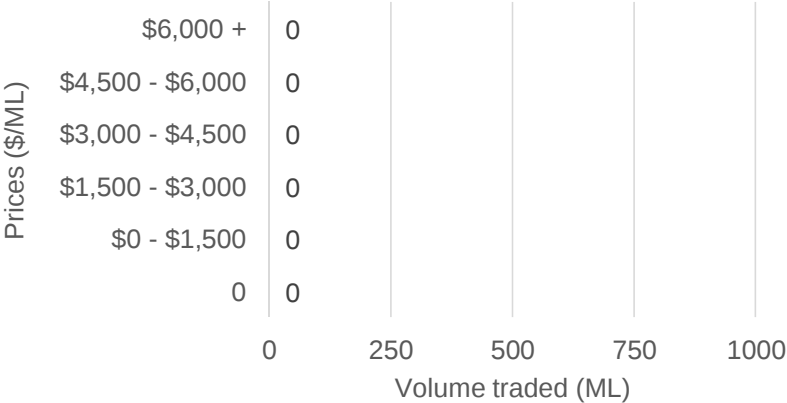
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019

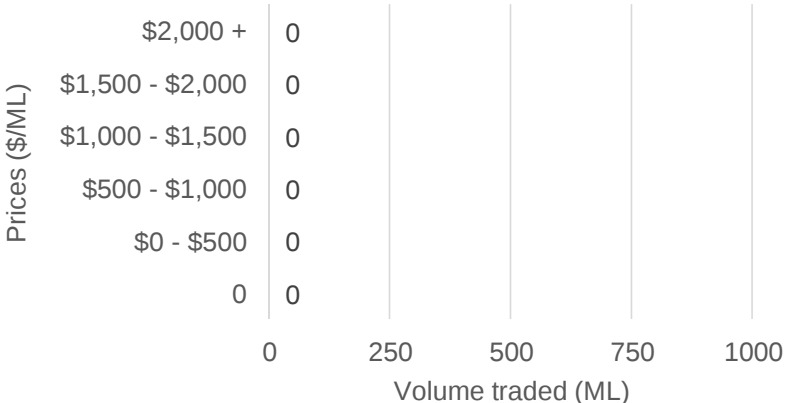


Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019 NSW Lower Darling HS



## NSW Lower Darling GS



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

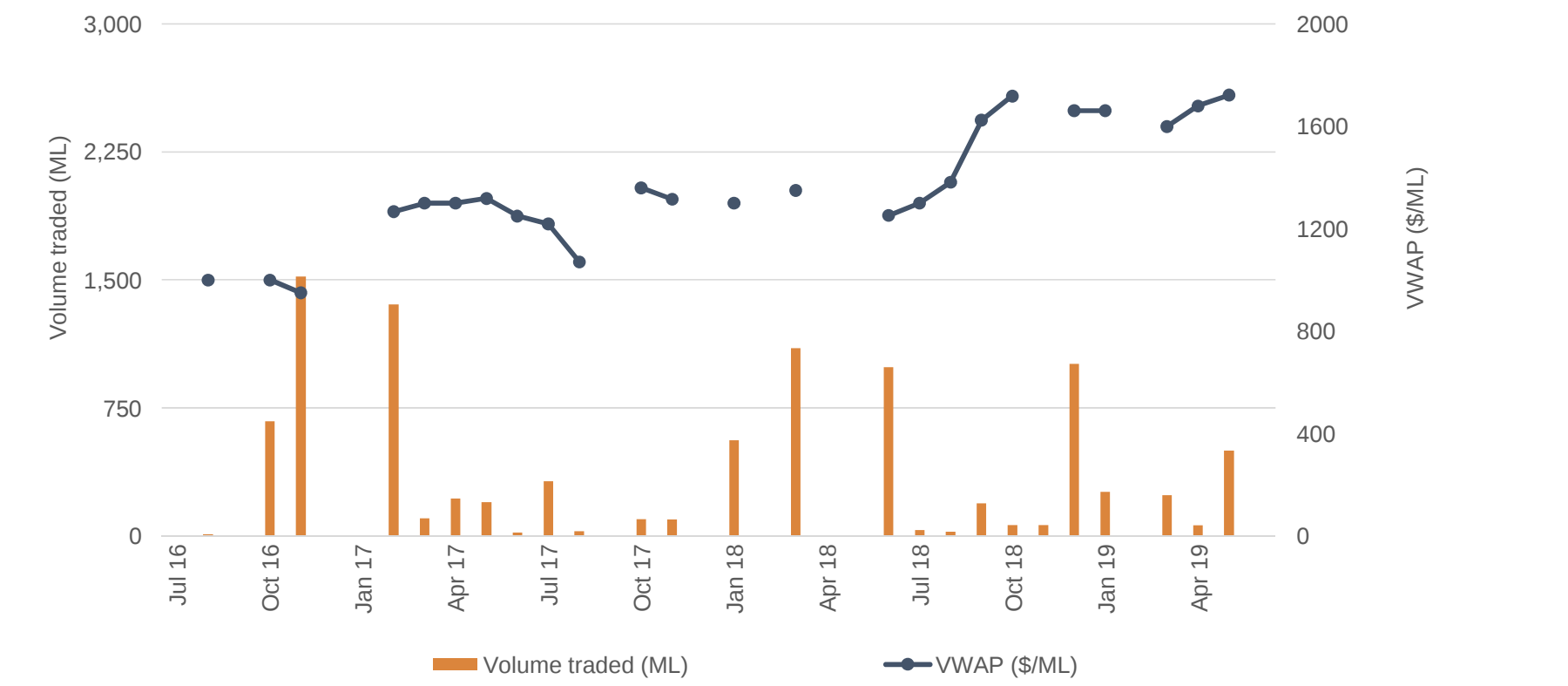
# NSW Macquarie

## Entitlement market overview, May 2019

| Entitlement type | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Macquarie GS | \$1,722                  | \$1,722                       | 1                                         | 500                                              | 500                               | -                                      |

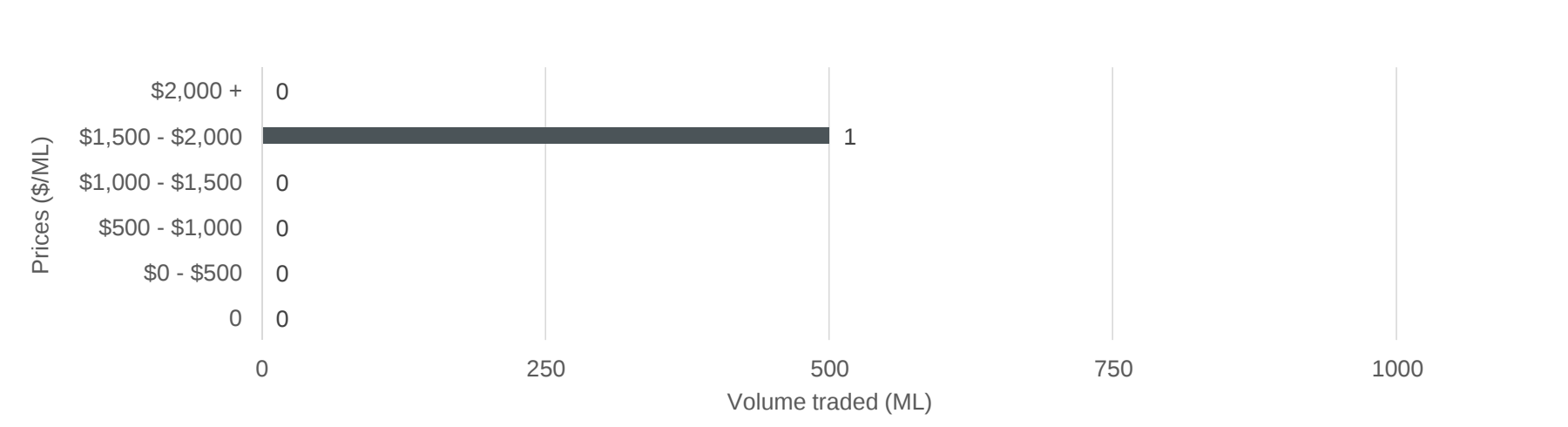
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

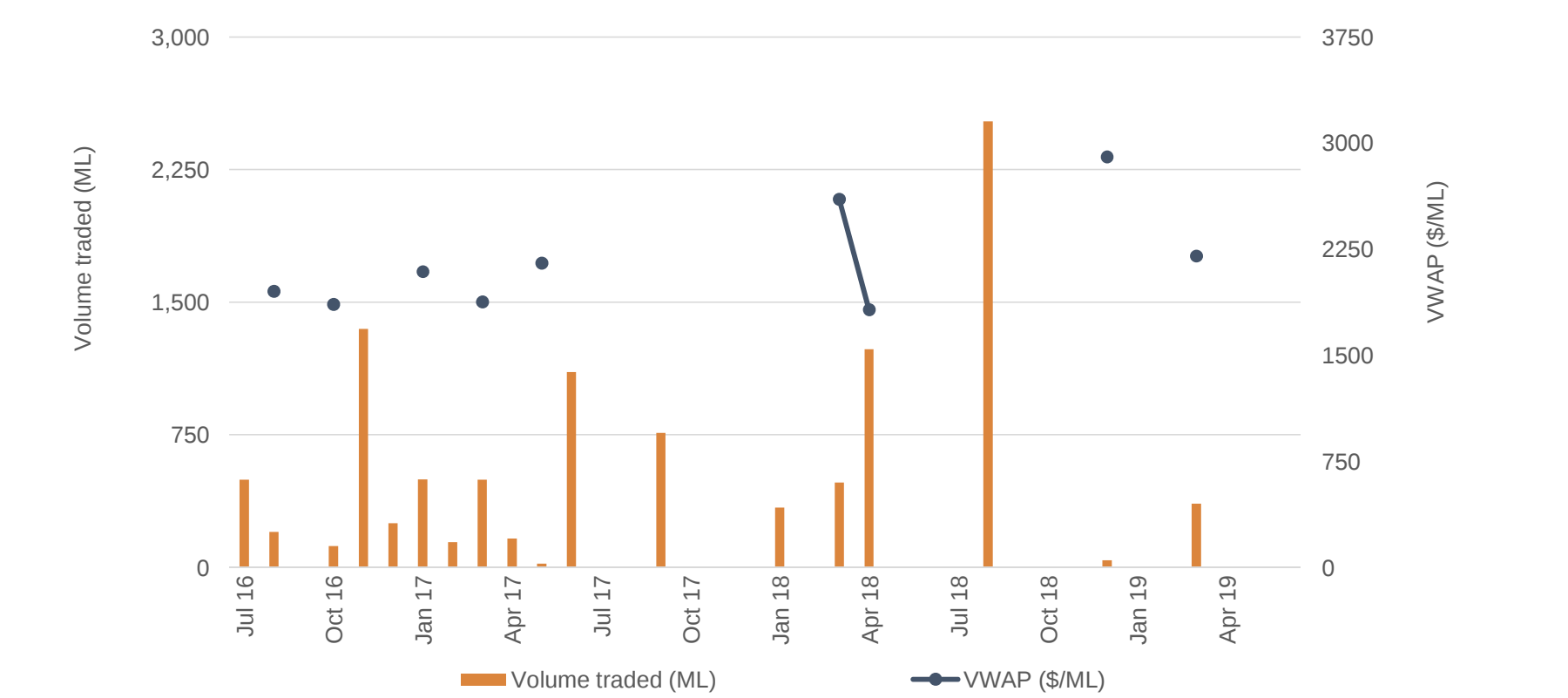
# NSW Lower Namoi

## Entitlement market overview, May 2019

| Entitlement type   | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|--------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Lower Namoi GS | -                        | -                             | -                                         | -                                                | -                                 | -                                      |

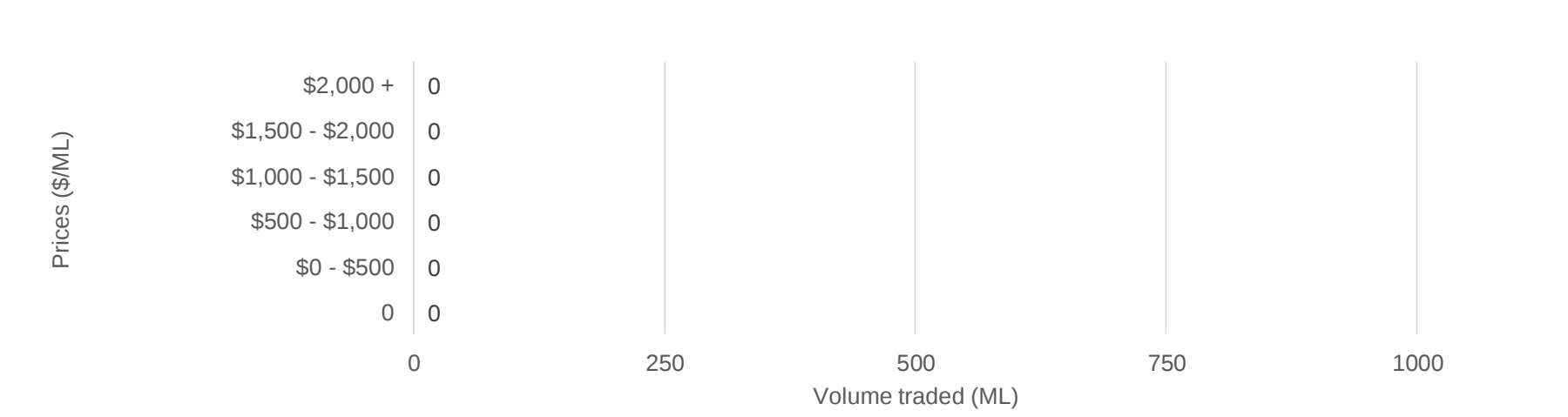
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the NSW Water Registers.

## Market price range, May 2019



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

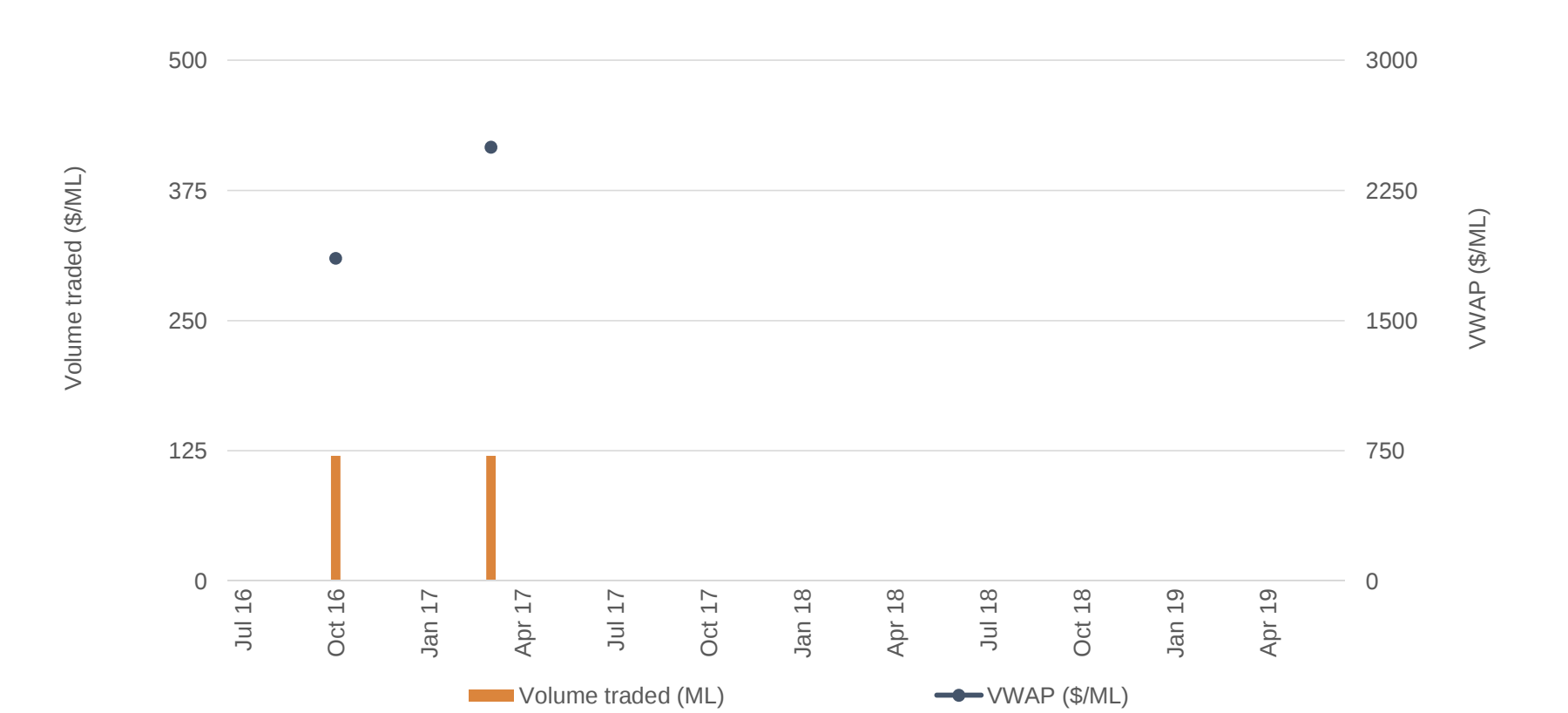
# NSW Upper Namoi

## Entitlement market overview, May 2019

| Entitlement type   | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|--------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| NSW Upper Namoi GS | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

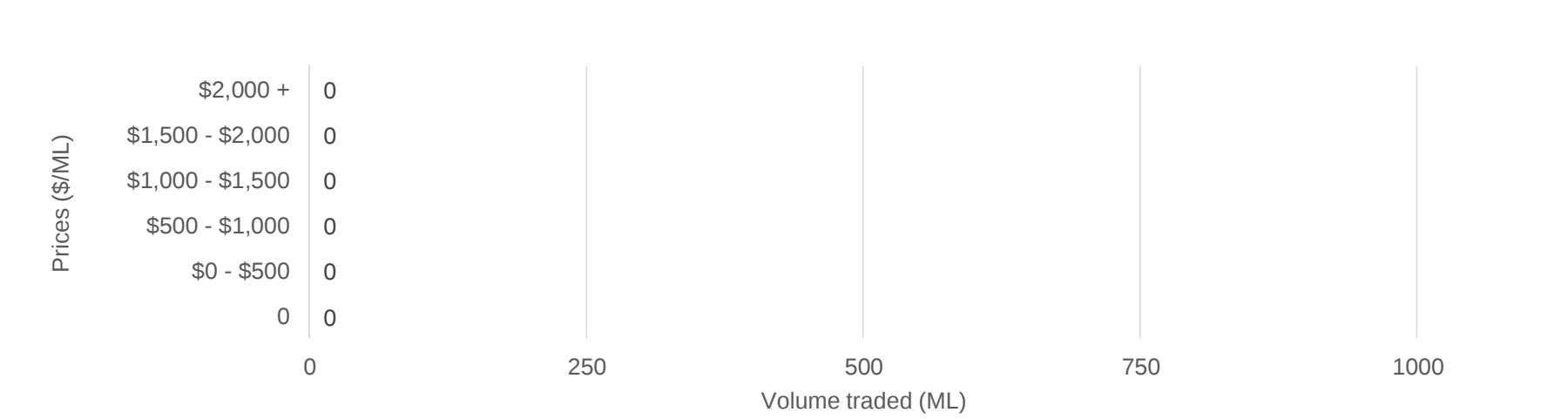
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

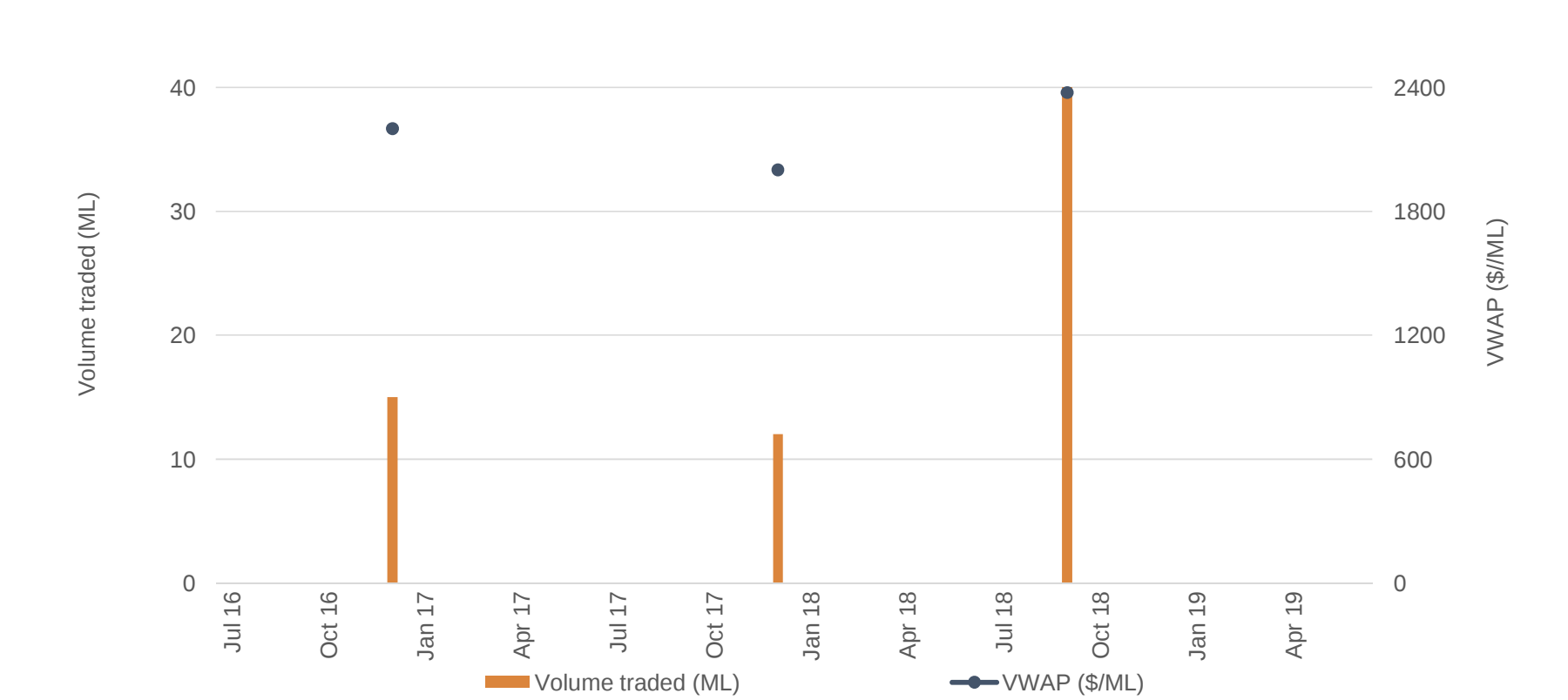
# NSW Gwydir

## Entitlement market overview, May 2019

| Entitlement type | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| NSW Gwydir GS    | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

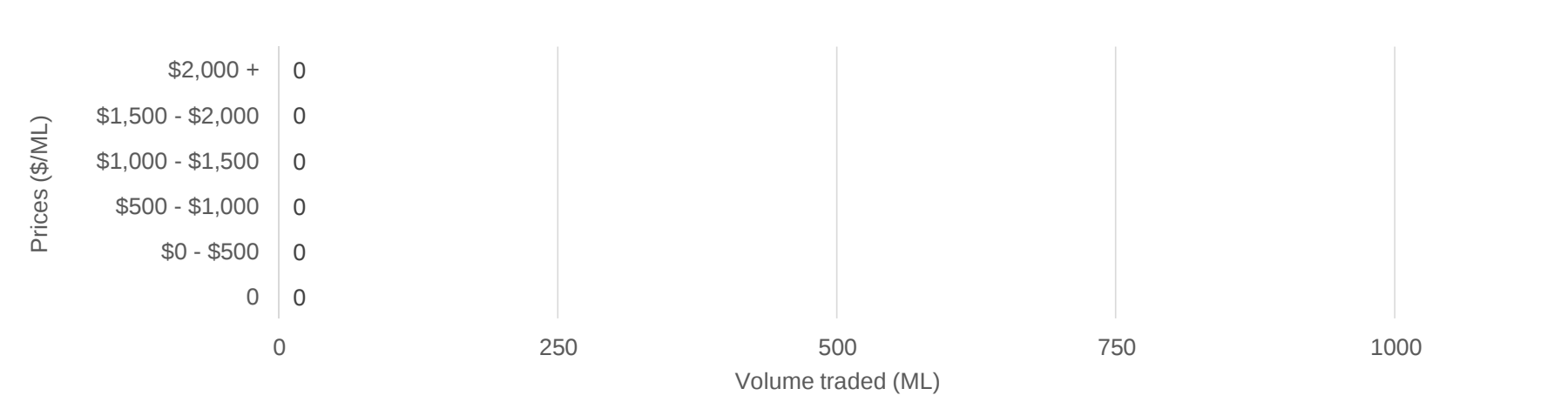
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

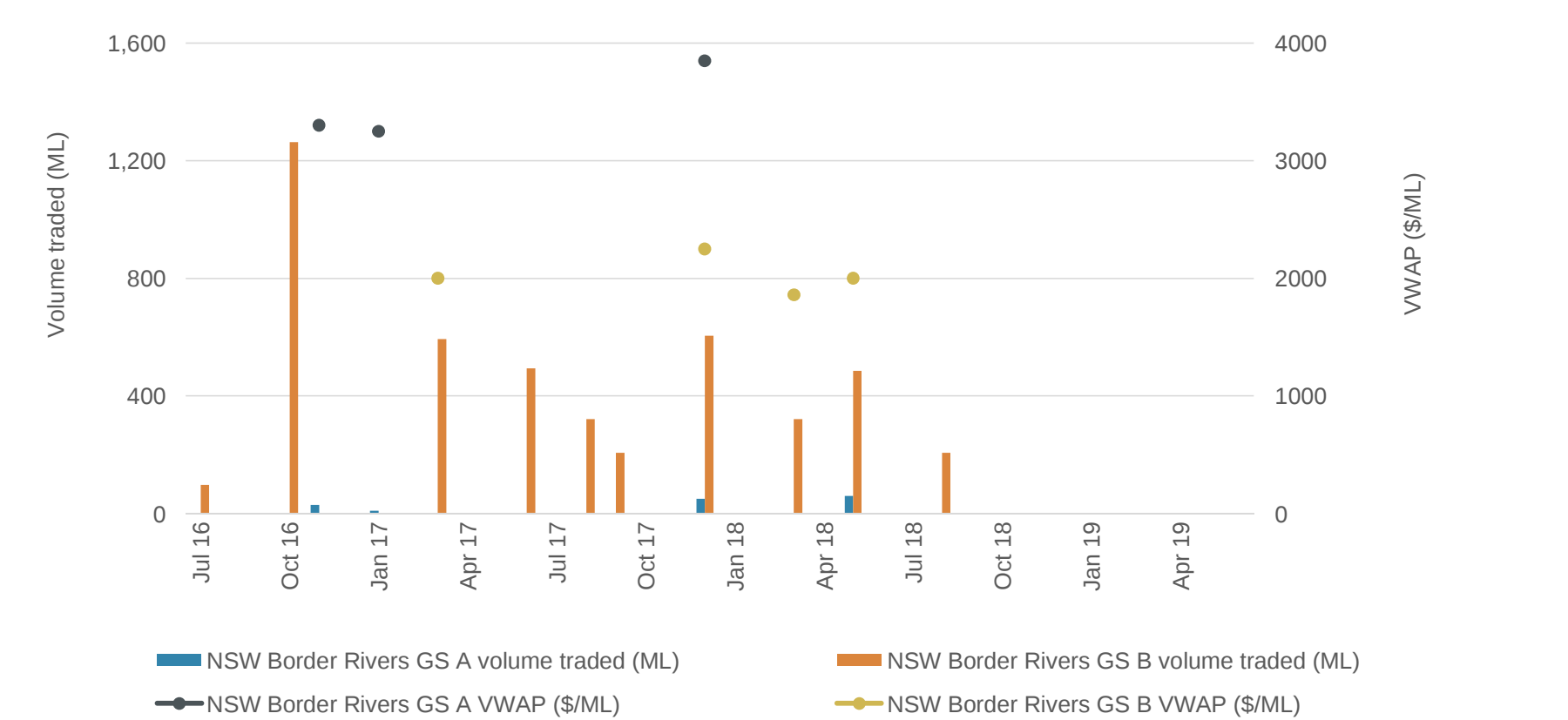
# NSW Border Rivers

## Entitlement market overview, May 2019

| Entitlement type       | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|------------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Border Rivers GS A | -                        | -                             | -                                         | -                                                | -                                 | -                                      |
| NSW Border Rivers GS B | -                        | -                             | -                                         | -                                                | -                                 | -                                      |

Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

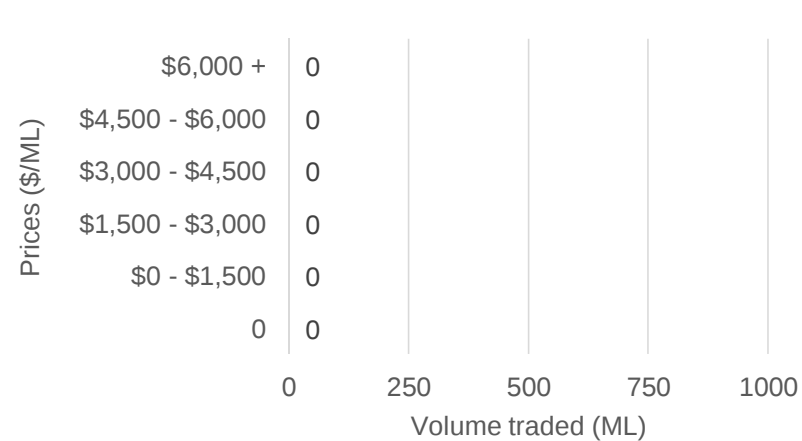
## Market prices and volumes, July 2016 to June 2019



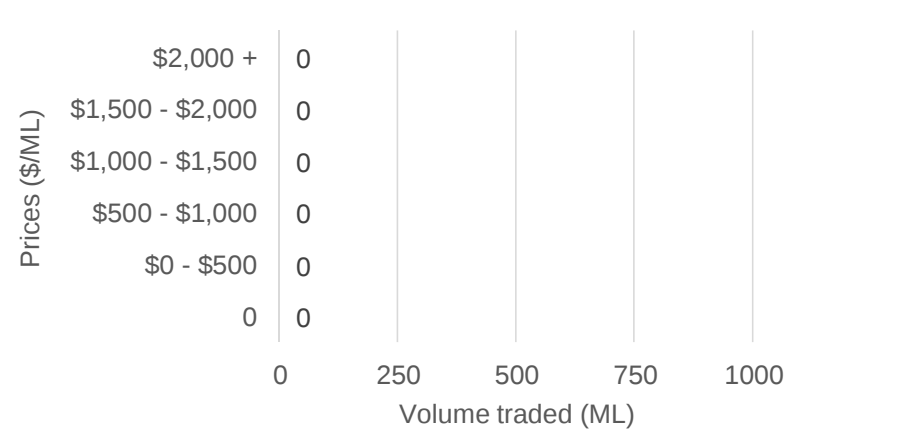
Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019

### NSW Border Rivers GS A



### NSW Border Rivers GS B



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

# NSW Barwon-Darling Unregulated

Entitlement market overview, May 2019

| Entitlement type                 | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of<br>trades<br>(unfiltered) May<br>2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel<br>size (ML) May<br>2019 | Broker spread<br>(Bid/Ask) \$/ML<br>May 2019 |
|----------------------------------|--------------------------|-------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------|----------------------------------------------|
| NSW Barwon-Darling Unregulated A | -                        | -                             | -                                               | -                                                | -                                       | -                                            |
| NSW Barwon-Darling Unregulated B | -                        | -                             | -                                               | -                                                | -                                       | -                                            |
| NSW Barwon-Darling Unregulated C | -                        | -                             | -                                               | -                                                | -                                       | -                                            |

Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

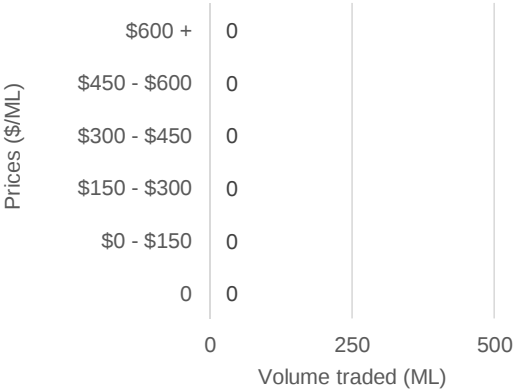
Market prices and volumes, July 2016 to June 2019



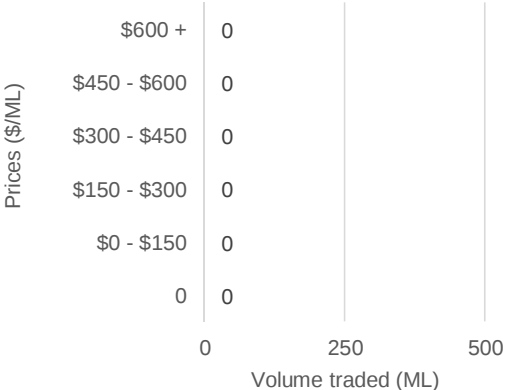
Source: Aither, 2019. Based on the NSW Water Register.

Market price range, May 2019

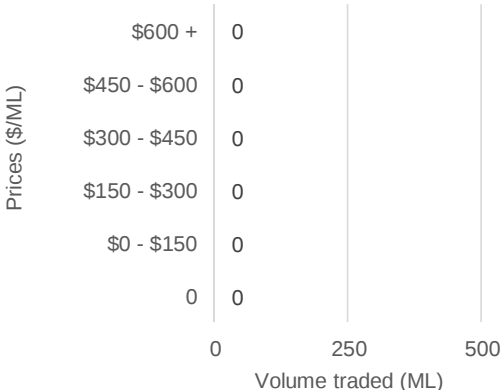
NSW Barwon-Darling Unregulated A



NSW Barwon-Darling Unregulated B



NSW Barwon-Darling Unregulated C



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

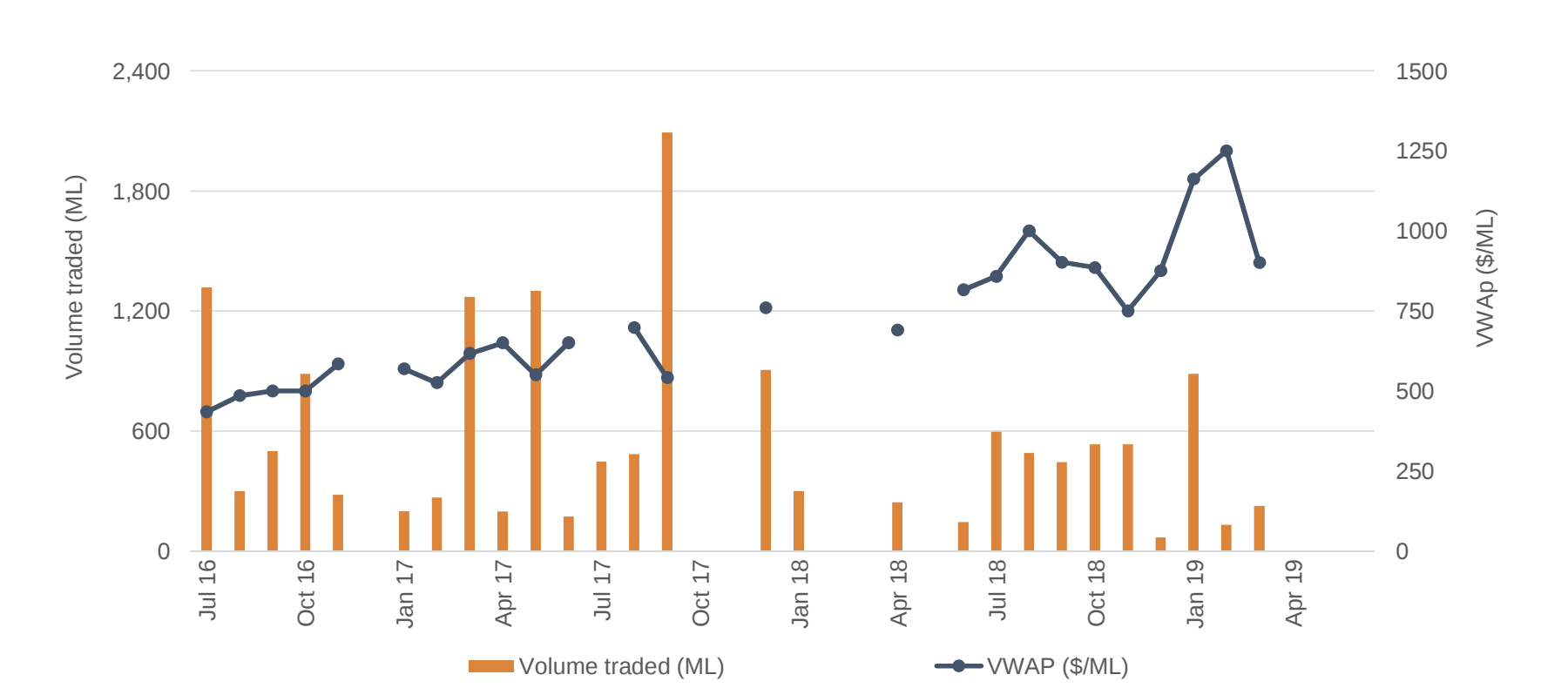
# NSW Lachlan

## Entitlement market overview, May 2019

| Entitlement type | VWAP (\$/ML)<br>May 2019 | Max Price (\$/ML)<br>May 2019 | Number of trades<br>(unfiltered) May 2019 | Volume of trade<br>(unfiltered) (ML)<br>May 2019 | Average parcel size (ML) May 2019 | Broker spread (Bid/Ask) \$/ML May 2019 |
|------------------|--------------------------|-------------------------------|-------------------------------------------|--------------------------------------------------|-----------------------------------|----------------------------------------|
| NSW Lachlan GS   | -                        | -                             | -                                         | -                                                | -                                 | -                                      |

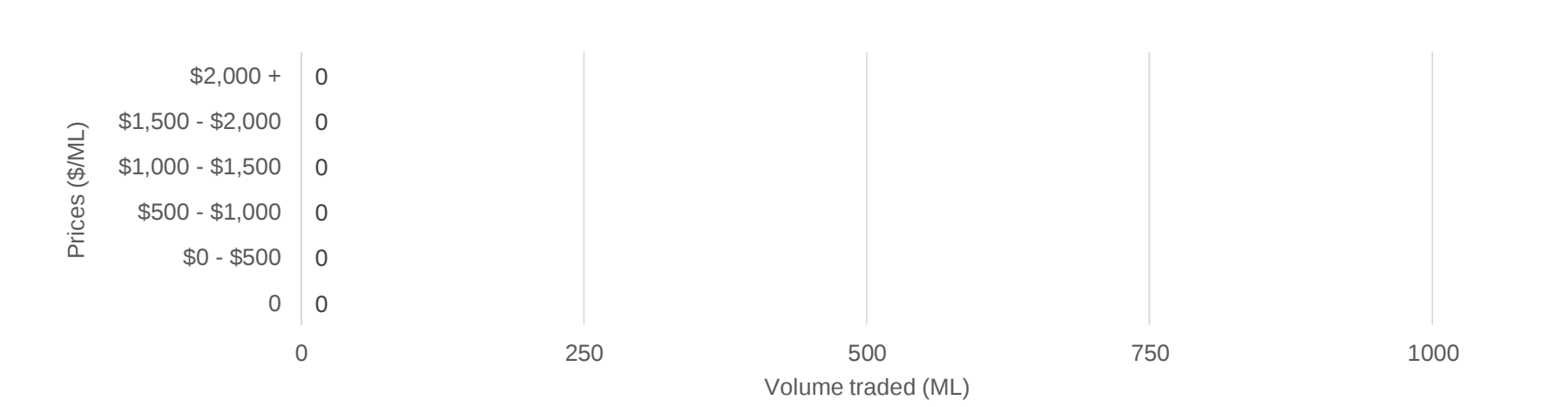
Source: Aither, 2019. Based on the NSW Water Register and quotes sourced from water brokers.

## Market prices and volumes, July 2016 to June 2019



Source: Aither, 2019. Based on the NSW Water Register.

## Market price range, May 2019



Source: Aither, 2019. Based on the NSW Water Register.

Note: Data labels are indicative of number of trades in each price bracket. Price bracket intervals do not include the upper bound price of the interval.

# Queensland Entitlements

## Entitlement Market Overview, April 2019

**Note: No recent market data available at the time of writing.**

| Entitlement                                      | April 2019<br>VWAP (\$/ML) | April 2019<br>Number of<br>Trades | April 2019<br>Volume of<br>trade (ML) | April 2019<br>Average<br>Parcel Size<br>(ML) |
|--------------------------------------------------|----------------------------|-----------------------------------|---------------------------------------|----------------------------------------------|
| QLD Condamine-Balonne Supplemented               | -                          | -                                 | -                                     | -                                            |
| QLD Condamine-Balonne Overland flow              | -                          | -                                 | -                                     | -                                            |
| QLD Condamine-Balonne Unsupplemented             | -                          | -                                 | -                                     | -                                            |
| QLD Condamine-Balonne Groundwater Unsupplemented | -                          | -                                 | -                                     | -                                            |
| QLD Border Rivers Supplemented                   | -                          | -                                 | -                                     | -                                            |
| QLD Border Rivers Unsupplemented                 | -                          | -                                 | -                                     | -                                            |

Notes: Disaggregated entitlement trade data in QLD is not publicly available therefore Aither has been unable to provide data in the same format as SA, Vic and NSW entitlement types. No recent trade data was available at the time of publication. In instances where there has been more than one trade for a given month it has not been possible to determine a maximum price due to the nature of the data made available.

Note: All Queensland entitlements are denoted by "Water Plan (Water Management Area/Water Supply Scheme) entitlement type"

Source: Aither, 2019. Based on the QLD Water Register.

# Notes

VWAPs are based on estimates of commercial trades as outlined in Aither's methodology excluding \$0 values. Aither's methodology is available on request.

Only trades reported in May 2019 are included in the monthly Volume Weighted Average Price (VWAP) and Maximum Monthly Price (\$/ML) reported in the entitlement summary tables.

The 'Number of Transfers and 'Volume of Transfers' (ML) are calculated based on all trades from state water market registers, including \$0 value trades. This is in line with Aither's calculation methodology which is available on request.

The average parcel size reported in the entitlement summary tables has been determined by taking the total monthly volume of transfers and dividing by the total number of transfers of the given entitlement during the month in question.

As trade prices for NSW Murray GS within Murray Irrigation are not reported, Aither has used NSW Murray GS on river prices as a substitute given the common characteristics that these entitlements share.

Aither's analysis was conducted on 5 June 2019 and only includes trade data available as of this date.

# Document history

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Approved: Chris Olszak

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