# PON BIMONTHLY REPORT

May & June 2016

STOLTHAVEN NEWCASTLE
LOT 2 STEELWORKS ROAD, MAYFIELD, 2304

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## 1 NOISE MONITORING

In accordance with the conditions stipulated in the development approval SSD 6664 MOD1, Noise monitoring (NME) is an annual requirement. Therefore the most recent report (29 October 2015) will be represented within the September/ October bimonthly report.

See Appendix A of the September/ October Report for attached AECOM report.

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## 2 AIR QUALITY ASSESSMENT

The terminal is operated in accordance with the Air Quality Management Plan which was prepared in consultation with PON and DP&E and consistent with the Mayfield Site Air Monitoring Program. The Mayfield Site Air Quality Monitoring Program uses the existing EPA monitoring system as a basis. The need for site specific monitoring to be implemented for projects in the Mayfield Concept Plan area is determined on a case by case basis during the planning and approval of each project. Stolthaven is operating under this framework to date.

Based on the outcomes of the Air Quality Impact Assessments undertaken for successive stages for the terminal, and in consultation with the EPA and DP&E, there has been no specific air quality monitoring requirements placed on Stolthaven. It should be noted that load limits are calculated on annual throughput and do not require regular monitoring to be undertaken.

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# 3 GROUNDWATER MONITORING

## 1.1 MONITORING CONDITIONS

Groundwater quality at the site is managed in accordance with a groundwater monitoring program, adherence to the sites Groundwater Management Plan and conditions of the Environmental Protection Licence (No. 20193). Groundwater beneath the site discharges into the Hunter River via groundwater mitigation. Four groundwater monitoring wells were installed in October 2013 (identified as Monitoring Points 1-4 in the EPL) and are subsequently identified as MW01, MW02, MW03 and MW04 in this report. The groundwater monitoring program consists of quarterly collection of data and samples from the groundwater wells. Monitoring events are scheduled so that groundwater conditions beneath the site are investigated during both 'wet' and 'dry' seasons.

| EPA Identification Number | Type of Monitoring Point |
|---|---|
| 1 | Groundwater |
| 2 | Groundwater |
| 3 | Groundwater |
| 4 | Groundwater |

## 1.2 MONITORING RESULTS

### 1.2.1 MONITORING POINT 1 (MW01)

Table 1: GME Results Summary for MW01

| | LOR | 27/08/2015 | 10/12/15 | 24/02/16 | 18/05/16 |
|---|---|---|---|---|---|
| pH | 0.01 | 9.39 | 9.37 | 9.34 | 9.28 |
| Benzene | 1 | < 1 | < 1 | < 1 | < 1 |
| Ethylbenzene | 2 | < 2 | < 2 | < 2 | < 2 |
| Toluene | 2 | < 2 | < 2 | < 2 | < 2 |
| Xylene | 2 | < 2 | < 2 | < 2 | < 2 |
| C6-C10 | 20 | < 20 | < 20 | < 20 | < 20 |
| C6-C10-BTEX | 20 | < 20 | < 20 | < 20 | < 20 |
| >C10-C16 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C16-C34 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C34-C40 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C10-C16 Fraction –Naphthalene | 100 | < 100 | < 100 | < 100 | < 100 |

MW01 recorded a pH value of 9.28 and is within Site background conditions. Previous pH values at this location ranged from 8.33 to 9.79. Mann-Kendall analysis (MKA) concluded there was statistically

significant evidence of a decreasing trend at the 95% confidence level. This apparent downward trend should be confirmed by further monitoring events.

TRH concentrations at MW01 were below the LOR for this GME and are in line with historical data trends at this location. TRH concentrations at MW01 have been consistently below the laboratory LOR since monitoring records began in October 2013.

Analytical results for all BTEX compounds were below LOR at the above monitoring locations and as such trend analysis was not undertaken. These results are generally consistent with background monitoring data and it appears that BTEX concentrations are typically stable at below LOR concentrations.

### 1.2.2 MONITORING POINT 2 (MW02)

Table 2: GME Results Summary for MW02

| | LOR | 27/08/2015 | 10/12/15 | 24/02/16 | 18/05/16 |
|---|---|---|---|---|---|
| pH | 0.01 | 7.68 | 7.59 | 7.58 | 7.59 |
| Benzene | 1 | < 1 | < 1 | < 1 | < 1 |
| Ethylbenzene | 2 | < 2 | < 2 | < 2 | < 2 |
| Toluene | 2 | < 2 | < 2 | < 2 | < 2 |
| Xylene | 2 | < 2 | < 2 | < 2 | < 2 |
| C6-C10 | 20 | < 20 | < 20 | < 20 | < 20 |
| C6-C10-BTEX | 20 | < 20 | < 20 | < 20 | < 20 |
| >C10-C16 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C16-C34 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C34-C40 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C10-C16 Fraction –Naphthalene | 100 | < 100 | < 100 | < 100 | < 100 |

A pH value of 7.59 was recorded at MW02 and is within Site background conditions. MKA determined statistically significant evidence of a decreasing trend within the dataset. This apparent downward trend should be confirmed by further monitoring events.

TRH concentrations at MW02 were below the LOR for this GME and are typical of concentrations recorded during background monitoring. TRH fractions have not been recorded at MW02 since records began, apart from one recorded concentration in the >C16-C34 fraction (380µg/L) in an October 2013 background monitoring event. Overall, TRH concentrations appear to be stable at below LOR concentrations.

Consistent with the GMEs undertaken since August 2015, benzene was recorded at below the LOR during this GME for monitoring location MW02. This is below concentrations recorded in previous GMEs (typically 1 to 5µg/L). It is noted that the LOR (1 µg/L) was adopted as a default concentration for this monitoring program and previous GMEs to allow a meaningful statistical interpretation of

the data. MKA determined that statistically significant evidence of a decreasing trend was evident in the dataset.

### 1.2.3 MONITORING POINT 3 (MW03)

Table 3: GME Results Summary for MW03

| | LOR | 27/08/2015 | 10/12/15 | 24/02/16 | 18/05/16 |
|---|---|---|---|---|---|
| pH | 0.01 | 8.57 | 8.71 | 8.04 | 8.00 |
| Benzene | 1 | < 1 | < 1 | < 1 | < 1 |
| Ethylbenzene | 2 | < 2 | < 2 | < 2 | < 2 |
| Toluene | 2 | < 2 | < 2 | < 2 | < 2 |
| Xylene | 2 | < 2 | < 2 | < 2 | < 2 |
| C6-C10 | 20 | < 20 | < 20 | < 20 | < 20 |
| C6-C10-BTEX | 20 | < 20 | < 20 | < 20 | < 20 |
| >C10-C16 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C16-C34 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C34-C40 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C10-C16 Fraction –Naphthalene | 100 | < 100 | < 100 | < 100 | < 100 |

MW03 recorded a pH value of 8.00 which is within the Site background range. The pH values at this location had increased steadily since monitoring began; however, during this monitoring event the pH value had decreased again. There is evidence of an increasing trend in the data. This apparent upward trend should be confirmed by further monitoring events.

TRH concentrations at MW03 were below the LOR for this GME and are typical of concentrations recorded during background monitoring. TRH fractions have not been recorded at MW03 since records began, apart from one recorded concentration in the >C16-C34 fraction (180 ìg/L) in an October 2013 background monitoring event. Overall, TRH concentrations appear to be stable at below LOR since October 2013.

Analytical results for all BTEX compounds were below LOR at the above monitoring locations and as such trend analysis was not undertaken. These results are generally consistent with background monitoring data and it appears that BTEX concentrations are typically stable at below LOR concentrations.

### 1.2.4 MONITORING POINT 4 (MW04)

Table 4: GME Results Summary for MW04

| | LOR | 27/08/2015 | 10/12/15 | 24/02/16 | 18/05/16 |
|---|---|---|---|---|---|
| pH | 0.01 | 8.29 | 8.62 | 8.39 | 8.08 |
| Benzene | 1 | < 1 | < 1 | < 1 | < 1 |
| Ethylbenzene | 2 | < 2 | < 2 | < 2 | < 2 |
| Toluene | 2 | < 2 | < 2 | < 2 | < 2 |
| Xylene | 2 | < 2 | < 2 | < 2 | < 2 |
| C6-C10 | 20 | < 20 | < 20 | < 20 | < 20 |
| C6-C10-BTEX | 20 | < 20 | < 20 | < 20 | < 20 |
| >C10-C16 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C16-C34 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C34-C40 Fraction | 100 | < 100 | < 100 | < 100 | < 100 |
| >C10-C16 Fraction –Naphthalene | 100 | < 100 | < 100 | < 100 | < 100 |

A pH value of 8.08 was recorded at MW04, which is within the Site background range. The pH at MW04 has decreased overall, showing a downward trend since monitoring began in October 2013. Trend analysis conducted on this data indicates there is statistical evidence of a decreasing trend in pH at this location. This apparent downward trend should be confirmed by further monitoring events.

TRH concentrations at MW04 were below the LOR for this GME and are typical of historic concentrations at this location.

Analytical results for all BTEX compounds were below LOR at the above monitoring locations and as such trend analysis was not undertaken. These results are generally consistent with background monitoring data and it appears that BTEX concentrations are typically stable at below LOR concentrations.

## 1.3 SUMMARY

The results of the quarterly groundwater monitoring undertaken across the Site confirm that there were no exceedances of the GAC for the parameters analysed. Where GAC have not been adopted, the analytical results were recorded to be within their relevant background concentration range.

Where appropriate, statistical trend analysis was undertaken on analytes using the MKA trend test with an upper confidence level of 95% at selected monitoring well locations. Trends in BTEX and TRH concentrations were largely non-calculable given the high proportion of Non-Detect values in the data (caused by data points with results below LOR concentrations).

Some preliminary trends were identified for pH at MW01 - MW04, and Benzene at MW02. These will continue to be assessed throughout the monitoring program. While statistically significant trends were not available for TRH and BTEX results for MW01 - MW04 (with exception of benzene at MW02), it is noted that all results for these analytes are well below the GAC (where adopted) and in most cases, below the LOR. These results are also consistent with historic TRH and BTEX data recorded by AECOM at the Site.

1. Groundwater level monitoring and groundwater sampling was conducted at the Site by AECOM on 18 May 2016. The analytical results of the groundwater quality monitoring indicate that there were no exceedances of the adopted GAC, or breaches of EPL conditions, relating to groundwater monitoring at Points MW01 to MW04;
2. Corrective action was therefore not required during this GME indicating that the operational facility has not had an impact on the quality of groundwater beneath the Site;
3. MW02 recorded a Benzene concentration below the LOR. In previous quarterly monitoring events, and during background monitoring, higher concentrations of Benzene were recorded at MW02. While Benzene has been identified in groundwater at MW02 prior to this GME, the concentrations recorded were appreciably low and below the GAC (500 µg/L);
4. Some preliminary trends were recorded in the dataset, however further monitoring data is required before reliable statistical trends in most analyte concentrations can be reported with sufficient confidence;
5. Comparison to historical analytical data confirmed that groundwater quality from this GME is comparable to pre-operational background conditions; and
6. On the whole it is considered that Stolthaven has complied with the groundwater monitoring requirements of their EPL and GMP. The next quarterly groundwater monitoring event is scheduled for August 2016.

It is noted that Stolthaven carry out routine monitoring of surface water discharges emanating from the Site for compliance against the EPL.

### 3.1.1 NEXT MONITORING EVENT

The next Groundwater Monitoring Event is scheduled for: August/September 2016

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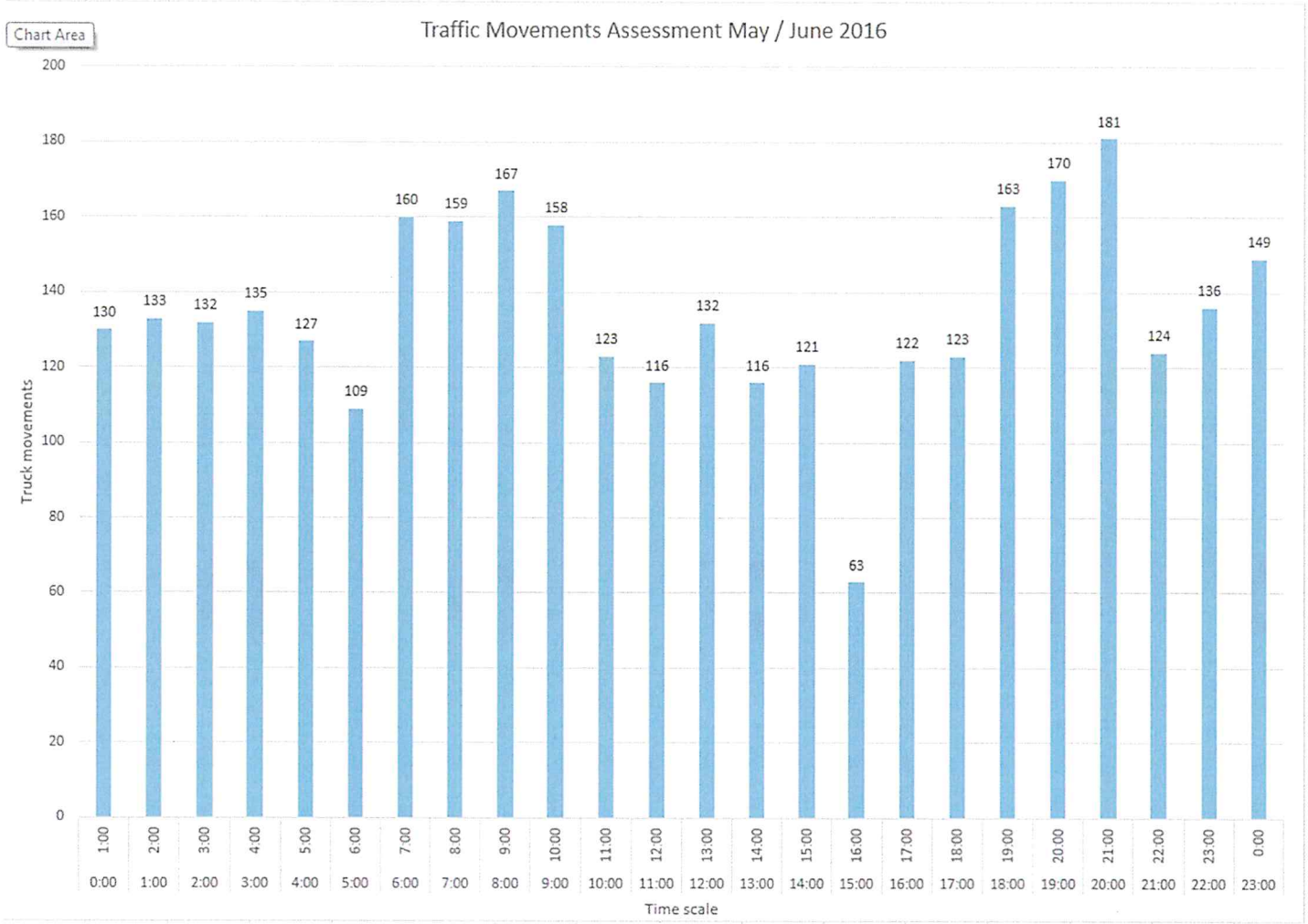
## 4 TRAFFIC MOVEMENT ASSESSMENT

The traffic movement assessment is the collation of all the transactions made at Stolthaven Newcastle during the reporting period. This is displayed in hourly intervals shown in the bar chart below.




In accordance with Schedule 3, Condition 2.3 of the Mayfield Concept Plan, the following table details truck movements against the prescribed criteria.

| | Total Truck Movements per annum | Total Truck Movements per day | Total Hourly Truck Movements in peak periods |
|---|---|---|---|
| MCP Criteria | 462,104 | 1,268 | 95 |
| Stolthaven | 40,790† | 112* | 5* |

† Rolling cumulative total truck movements over 12 month period
* Based on an average over an actual 12 month period