

**Amendment to Table 33 and 34 to incorporate the new fee-based activity of Petroleum exploration, assessment and production**

**7.23 Petroleum exploration, assessment and production (liquid)**

**Table 33: Petroleum exploration, assessment and production (liquid)**

Acceptable load calculation methods and emission factors, where applicable  
(kilogram per tonne of final product refined or manufactured, as applicable)

**Air**

| Component or activity                       | Assessable pollutants—Air              |                          |                         |                               |  |                               |  |
|---|--|--------------------------|-------------------------|-------------------------------|--|-------------------------------|--|
|   | Benzene                                | Benzo(a) pyrene (equiv.) | Fine particulates       | H <sub>2</sub> S              | NO <sub>x</sub> & NO <sub>x</sub> (summer) | SO <sub>x</sub>               | VOCs & VOCs (summer)                   |
| 1. Separation processes                     | SM—PM, CEMS<br>EF—PEMS, SS, G          | SM—PM<br>EF—PEMS, SS, G  | —                       | SM—PM, CEMS<br>EF—PEMS, SS, G | —  | —                             | SM—PM, CEMS<br>EF—PEMS, SS, G          |
| 2. Conversion processes                     | SM—PM, CEMS<br>EF—PEMS, SS, G          | SM—PM<br>EF—PEMS, SS, G  | SM—PM<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G              | SM—PM, CEMS<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G          |
| 3. Treating process                         | SM—PM, CEMS<br>EF—PEMS, SS, G          | SM—PM<br>EF—PEMS, SS, G  | SM—PM<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G              | SM—PM, CEMS<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G          |
| 4. Auxiliary activities                     | —                                      | SM—PM<br>EF—PEMS, SS, G  | SM—PM<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G              | SM—PM, CEMS<br>EF—PEMS, SS, G | SM—PM, CEMS<br>EF—PEMS, SS, G          |
| 5. Transfer of bulk liquids                 | SM—PM, CEMS<br>EF—PEMS, SS, G<br>TANKS | —                        | —                       | —                             | —  | —                             | SM—PM, CEMS<br>EF—PEMS, SS, G<br>TANKS |
| 6. Bulk storage of organic liquids          | SM—PM, CEMS<br>EF—PEMS, SS, G<br>TANKS | —                        | —                       | —                             | —  | —                             | SM—PM, CEMS<br>EF—PEMS, SS, G<br>TANKS |
| 7. Fugitive emissions from leaks and spills | —                                      | —                        | —                       | —                             | —  | —                             | SM—PM, CEMS<br>EF—PEMS, SS, G          |

Addendum to the Load Calculation Protocol ( March 2015) Continued

|  |   |   |   |   |   |   |                               |
|--|---|---|---|---|---|---|-------------------------------|
| 8. Air emissions from wastewater treatment | - | - | - | - | - | - | SM—PM, CEMS<br>EF—PEMS, SS, G |
| 9. Vapour disposal or recovery systems     | - | - | - | - | - | - | SM—PM, CEMS<br>EF—PEMS, SS, G |
| <b>Total actual load (kg)</b>              |   |   |   |   |   |   |                               |

SM—source monitoring (PM—periodic monitoring; CEMS—continuous emission monitoring system); EF—emission factor (G—generic; SS—site specific; PEMS—predictive emission monitoring system)

**Note:** Where EF—G is shown without a numerical value, no adequate data is available for Australian conditions at this time and an EF—PEMS or EF—SS may be developed by the licensee.

**Table 33: Petroleum exploration, assessment and production (liquid) (continued)**

**Water**

| Component or activity         | Assessable pollutants—Water |                |                |                |                 |                |
|-------------------------------|-----------------------------|----------------|----------------|----------------|-----------------|----------------|
|                               | BOD                         | Oil & grease   | TSS            | Total PAHs     | Total phenolics | Salt           |
| 10. Wastewater—point source   | SM—PM<br>EF—SS              | SM—PM<br>EF—SS | SM—PM<br>EF—SS | SM—PM<br>EF—SS | SM—PM<br>EF—SS  | SM—PM<br>EF—SS |
| <b>Total actual load (kg)</b> |                             |                |                |                |                 |                |

SM—source monitoring (PM—periodic monitoring); EF—emission factor (SS—site specific)

## 7.24 Petroleum exploration, assessment and production (gas)

Table 34: Petroleum exploration, assessment and production (gas)

### Acceptable load calculation methods and emission factors, where applicable

(kilogram per tonne of final product refined or manufactured, as applicable)

#### Air

| Component or activity                                  | Assessable pollutants—Air     |                               |                               |                         |  |                               |                               |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------|--|-------------------------------|-------------------------------|
|  | Benzene                       | Benzo(a) pyrene (equiv.)      | Fine particulates             | H <sub>2</sub> S        | NO <sub>x</sub> & NO <sub>x</sub> (summer) | SO <sub>x</sub>               | VOCs & VOCs (summer)          |
| 1. Separation processes (excluding combustion)         | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | SM—PM, CEMS<br>EF—G, SS | —  | —                             | SM—PM, CEMS<br>EF—G, SS,      |
| 2. Conversion processes (excluding combustion)         | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | SM—PM, CEMS<br>EF—G, SS | —  | —                             | SM—PM, CEMS<br>EF—G, SS,      |
| 3. Treating process (excluding combustion)             | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | SM—PM, CEMS<br>EF—G, SS | —  | —                             | SM—PM, CEMS<br>EF—G, SS,      |
| 4. Auxiliary activities                                |                               |                               |                               |                         |  |                               |                               |
| 4(a) Emissions from gas leaks                          | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | SM—PM, CEMS<br>EF—G, SS | —  | —                             | SM—PM, CEMS<br>EF—G, SS       |
| 4(b) Emissions from gas venting                        | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | SM—PM, CEMS<br>EF—G, SS | —  | —                             | SM—PM, CEMS<br>EF—G, SS       |
| 4(c) Other auxiliary activities (excluding combustion) | —                             | —                             | —                             | SM—PM, CEMS<br>EF—G, SS | —  | —                             | SM—PM, CEMS<br>EF—G, SS       |
| 5. Combustion  |                               |                               |                               |                         |  |                               |                               |
| 5(a) Engines and turbines                              | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS | —                       | SM—PM, CEMS<br>EF—G, SS, PEMS              | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS |
| 5(b) Flares<br>5(b) Flares (cont.)                     | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS | —                       | SM—PM, CEMS<br>EF—G, SS, PEMS              | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS |
| 5(c) Other combustion                                  | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS | —                       | SM—PM, CEMS<br>EF—G, SS, PEMS              | SM—PM, CEMS<br>EF—G, SS, PEMS | SM—PM, CEMS<br>EF—G, SS, PEMS |
| 6. Transfer of bulk organic liquids                    | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | —                       | —  | —                             | SM—PM, CEMS<br>EF—G, SS       |
| 7. Storage of bulk organic liquids                     | SM—PM, CEMS<br>EF—G, SS       | —                             | —                             | —                       | —  | —                             | SM—PM, CEMS<br>EF—G, SS       |

| Component or activity   | Assessable pollutants—Air |                          |                   |                  |  |                 |                         |
|---|---------------------------|--------------------------|-------------------|------------------|--|-----------------|-------------------------|
|   | Benzene                   | Benzo(a) pyrene (equiv.) | Fine particulates | H <sub>2</sub> S | NO <sub>x</sub> & NO <sub>x</sub> (summer) | SO <sub>x</sub> | VOCs & VOCs (summer)    |
| 8. Air emissions from wastewater treatment                    | —                         | —                        | —                 | —                | —  | —               | SM—PM, CEMS<br>EF—G, SS |
| 9. Vapour disposal or recovery systems (excluding combustion) | —                         | —                        | —                 | —                | —  | —               | SM—PM, CEMS<br>EF—G, SS |
| <b>Total actual load (kg)</b>                                 |                           |                          |                   |                  |  |                 |                         |

SM—source monitoring (PM—periodic monitoring; CEMS—continuous emission monitoring system); EF—emission factor (G—generic; SS—site specific; PEMS—predictive emission monitoring system)

**Note:** Where EF—G is shown without a numerical value, no adequate data is available for Australian conditions at this time and an EF—PEMS or EF—SS may be developed by the licensee.

**Table 34: Petroleum exploration, assessment and production (gas) (continued)**

**Water**

| Component or activity         | Assessable pollutants—Water |                      |                      |                      |                      |                      |
|-------------------------------|-----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                               | BOD                         | Oil & grease         | TSS                  | Total PAHs           | Total phenolics      | Salt                 |
| 10. Wastewater                | SM—PM, CEMS<br>EF—SS        | SM—PM, CEMS<br>EF—SS | SM—PM, CEMS<br>EF—SS | SM—PM, CEMS<br>EF—SS | SM—PM, CEMS<br>EF—SS | SM—PM, CEMS<br>EF—SS |
| <b>Total actual load (kg)</b> |                             |                      |                      |                      |                      |                      |

SM—source monitoring (PM—periodic monitoring; CEMS—continuous emission monitoring system); EF—emission factor (SS—site specific)

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