**Table 6:** Checklist for groundwater monitoring wells

| **Groundwater monitoring components (section 20 of the *UPSS Regulation*)** | **What exactly?**  **(Requirements of the *UPSS Regulation* or the *UPSS Guidelines*, where available)** | **Included (Y/N)** | **Adequate (Y/N)** | **Comments and remedy (why ‘no’? how is compliance reached?)** |
| --- | --- | --- | --- | --- |
| Installation of groundwater wells | Are the monitoring wells designed/installed by a duly qualified person, such as an environmental consultant and licensed driller?  Is the person responsible for the UPSS able to present well design documents upon request by Council officers?  Are there minimum of 3 groundwater wells installed on the site – one up-gradient and 2 down-gradient of the UPSS?  If a leak is detected in the UPSS, are the groundwater wells located and screened in such a way that the leak will be captured?  Is the monitoring well construction and design in accordance with industry standards and guidelines?[[1]](#footnote-1)  Is the monitoring well construction, location and designated numbering of groundwater wells included in FSOP? |  |  |  |
| Checking of wells | Are the groundwater wells monitored every 6 months?  Are the bi-annual groundwater monitoring records/reports maintained and available upon request?  Are the monitoring wells monitored for the presence of hydrocarbons visually or by using an interface probe? A visual assessment procedure is detailed below.  Is the monitoring conducted by a duly qualified person and/or is a detailed written instruction on how to check the wells for contamination available onsite or in the FSOP? |  |  |  |
| Sampling of wells | If well checking indicated the presence of hydrocarbons in groundwater, is sampling and analysis of groundwater conducted by a duly qualified person?  Is sampling conducted when a new UPSS or well is installed and/or upon the discovery of a leak through loss monitoring?  Has a duly qualified person performed sampling?  Are the groundwater samples analysed in a laboratory accredited by NATA?  Is the person responsible for the UPSS onsite able to present sampling/analysis reports upon request by Council officers? **Note:**   * + The results must be included in the site’s FSOP and kept for at least 7 years or be made available within 3 days of being requested by an authorised officer.   + If the test results confirm that hydrocarbons are present in the groundwater monitoring well, the appropriate regulatory authority (that is, Council) must be advised using a leak notification form.   + Groundwater parameters and criteria indicating the presence of contamination are listed below in Table 7. |  |  |  |
| Groundwater testing records | Do the field sampling records include the following?  the date and time of the sampling event.  any observations, such as evidence of an odour or sheen or an indication of the presence of free-phase hydrocarbons?  the name and signature of the person who conducted the tests. For electronically stored records, the name of the person who conducted the tests will suffice. |  |  |  |

Note: *UPSS Regulation* = *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*; *UPSS Guidelines* = *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*; UPSS = underground petroleum storage system; FSOP = fuel system operation plan; NATA = National Association of Testing Authorities.

1. https://www.industry.nsw.gov.au/\_\_data/assets/pdf\_file/0004/329971/minimum-construction-requirements-for-water-bores-fourth-edition.pdf [↑](#footnote-ref-1)