

Advisory clauses

- (a) to note the comments of the the District Lands Officer/Sai Kung, Lands Department (DLO/SK, LandsD) that the proposed public utility installation and excavation works fall on unleased government land. As the project limits of PWP Item No. 4272DS – ‘Port Shelter Sewerage, Stage 2, Package K, Sewerage at Wo Mei, Heung Chung and Mok Tse Che’ is affected, the applicant is required to consult Drainage Services Department prior to commencement of works;
- (b) to note the comments of the Commissioner of Transport (C for T) that the access road to the Site is not managed by Transport Department, the applicant should seek comments/agreement of the owner or relevant management/maintenance authorities;
- (c) to note the comments of the Director of Agriculture, Fisheries and Conservation (DAFC) that the applicant is reminded to avoid impacts to trees on government land;
- (d) to note the comments of the Chief Engineer/Construction, Water Supplies Department (CE/Construction, WSD) that the applicant is required to observe the “Conditions of Working in the Vicinity of Waterworks Installations” and “Flow Chart on Procedures for Safe Working near Water Mains” (**Annex A**);
- (e) to note the comments of the Director of Electrical and Mechanical Services (DEMS) that the applicant is reminded to observe the Electricity Supply Lines (Protection) Regulation and the “Code of Practice on Working near Electricity Supply Lines” when carrying out works in the vicinity of the electricity supply lines; and
- (f) to note the comments of the Director of Health (D of Health) that according to the World Health Organisation (WHO), with compliance with the relevant International Commission on Non-Ionising Radiation Protection (ICNIRP) guidelines, exposure to extremely low frequency electromagnetic fields, such as those generated by electrical facilities would not pose any significant adverse effects to workers and the public. As such, the project proponent must ensure that the installation complies with the relevant ICNIRP guidelines or other established international standards. WHO also encourages effective and open communication with stakeholders in the planning of new electricity facilities.

Conditions for Working in the Vicinity of Waterworks Installations

Water Mains

1. No water mains or their support shall be interfered with or buried without the prior approval of WSD.
2. The Contractor shall check the location of water mains and cables and other services by hand dug trial holes and take precautionary measures to protect them.
3. Free access shall be maintained at all times for the staff of WSD, their contractors and vehicles to go into and/or through the site to carry out installation, inspection, operation, maintenance or repair works.
4. No additional filling material is to be deposited over a water main without the approval of WSD.
5. No structures shall be erected or materials stored within 3 metres from the centre line of mains of 900mm diameter or under, and 5 metres for mains exceeding 900mm in diameter.
6. Full details of any proposed temporary works affecting waterworks installations and of any temporary support or protective measure to mains shall be submitted to the Client Department where appropriate for approval and to WSD for information. Work shall not commence until approval is given by the Client Department.
7. Diversion of WSD mains, other than those already shown on the contract drawings, shall only be considered when all other options such as protection of the mains or modification of design have been considered and found to be impracticable.
8. The programme for laying or diversion of all WSD mains shall be agreed with WSD in advance. A 14-day notice shall be served to WSD to confirm site availability for the commencement of any agreed diversion. WSD shall also be notified of any change required in the agreed programme as soon as possible.
9. All excavation works within 1.5m of water mains exceeding 900 mm in diameter shall be carried out by hand. No excavation shall be carried out within lines 45° below the centre line of such mains or 45° below the edges of the foundation of their supports without approved ground support. If the support is in the form of steel sheets, they shall be left in place after works. Removal of support from underneath the mains is not permitted.
10. No earth fill ramps are to be used to form temporary crossings of the large diameter mains. Temporary ramps/bridges in steel, timber, or concrete shall be used with the deck and support piers clear of the mains so that no loading is imposed on the mains.
11. All temporary works near the large diameter water mains shall be kept to at least 1 metre away from the edge of the mains and the length of mains affected shall be well protected by a temporary timber cover raised 250 mm clear of the mains to ensure no impact damage.

Blasting, Drilling and Piling near Waterworks Installations

12. No blasting, drilling, or pile driving (including sheet piling) within a distance of 60m from waterworks tunnels shall be carried out. Furthermore, blasting within 50m from any water retaining structure other than watermains; 6m from watermains of 600mm diameter and above; and 6m from any non-water-retaining structure shall not be carried out without the prior approval of WSD.
13. The maximum particle velocity and amplitude of ground movements due to blasting or pile driving as measured at the nearest waterworks tunnel or other water retaining structures shall not exceed 13mm/sec. and 0.1mm respectively.
14. The maximum particle velocity and amplitude of ground movements due to blasting or pile driving as measured at the nearest water mains shall not exceed 25mm/sec. and 0.2mm respectively.
15. The size of charge, pattern and timing of detonation etc. will be decided by the Commissioner of Mincs after carrying out test firing at site.
16. The movement of mains and structures shall be monitored by surveys jointly attended by WSD, the project Department and the Contractor. One week's notice shall be given to WSD for any survey request.
17. Vibration from blasting, piling or other causing activities shall be monitored by means of agreed vibrograph readings. The vibrograph shall comply with the Specification below and shall be provided free by the Contractor.
18. The results of monitoring of the vibration and any movement of water mains and waterworks structures shall be submitted to WSD for record purpose. If the aforementioned vibration limits are exceeded or movement in excess of 5mm is detected, works shall be suspended until approved remedial works are completed. Full details of the proposed works shall be approved by WSD before any work commences.

Specification for Vibrograph

- (a) The machine shall be a direct reading type peak particle velocity vibrograph.
- (b) It shall have 3 channels, recording in 3 mutually perpendicular directions.
- (c) It must be able to record particle velocity and amplitude, although not necessarily at the same time.
- (d) It must produce a permanent trace on paper, preferably by using ultra-violet light.
- (e) The recording paper must be easily obtainable locally.
- (f) The instrument must be portable and battery operated (or else a generator must be supplied free).
- (g) Operating instructions must be in English.

Excavation near Waterworks Installations

19. Excavation shall not be permitted within lines drawn at 45° downwards from a point 6m away from the foundation lines of any waterworks structures.

20. No excavation should be carried out within 60 metres, horizontally of any tunnel and no excavation or well driving shall be carried out above any tunnel.
21. No quarrying operations shall be carried out above and/or within 150 metres horizontally from any waterworks tunnel.

Prevention of Pollution of Waterworks Catchments

22. Site formation, construction and drainage plans shall be submitted to WSD for approval prior to commencement of work.
23. Protective measures shall be taken by the Contractor to prevent pollution or siltation to the catchment area. Any bulk excavation within the catchment shall be provided with silt traps to prevent any particular matter from entering streams or intakes. The details of silt traps shall be submitted to WSD for approval. Silt traps shall be cleared out regularly and in particular after any rainstorm.
24. The storage and discharge of pesticides, toxicant, flammable or toxic solvents, petroleum oil, diesel, tar or other toxic substances are strictly prohibited within the gathering grounds.
25. No labour lines shall be allowed within waterworks catchment area.
26. Only dry-type portable toilet facility with regular desludging schedules is allowed during the construction period. The sludge must be disposed of properly outside the gathering grounds. Portable toilets shall be kerbed on all sides, located at least 30 metres away from the streams and desludged on a regularly basis.
27. The Contractor shall be responsible for cleaning frequently any waterworks roads and associated drainage works of mud and debris.
28. Should pollution be detected in future due to the development, immediate remedial actions to clear the pollution must be taken by the Contractor.

Waterworks Installations (e.g. Treatment Works) Nearby

29. The Contractor will not be permitted access to any adjacent waterworks installations.
30. An unimpeded free vehicular access shall be maintained at all times to and from the adjacent waterworks installations in the vicinity.

Special provisions

31. WSD may impose further conditions as deemed necessary for the protection of waterworks that may be adversely affected by the proposed works including but not limited to the appointment of independent checking engineer and specialists at the expense of the project.

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Flow Chart on Procedures for Safe Working near Water Mains

