



Civilscan is a DBYD Ltd Certified Locating Organisation (CLO)

The Certified Locating Organisation (CLO) program is a formal agreement between DBYD Certification Ltd (as representative of the utility) and a locating company that gives certain properly certified employees access permissions to utility networks for the purposes of locating that utility's assets

Why Certified Locating Organisation status is necessary?

WHS regulations requires that all reasonable steps must be taken to obtain current underground essential services information about a workplace where excavation work is being carried out **before directing or allowing the excavation work to commence**. (WHS Regulations 2011, 304 Excavation work—underground essential services information).

Additionally, there is a "Duty of Care" to minimise the risk to fellow workers and the public against accidents, damage to property and fatalities. Underground networks are complex and requires expert knowledge to interpret information, to identify and locate components, to pothole underground assets for validation and to safely work around assets without causing damage.



Underground Services Report (USR)

10002896

Prepared for:

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Underground Services Report

Location Activities means

- (a) reviewing and interpreting plans of underground and above ground services provided by utilities;
- (b) conducting site investigations utilizing plans, knowledge and experience;
- (c) identifying and locating utility assets using approved industry equipment and practices including EMF devices, sondes, transponders and physically exposing if applicable; and
- (d) recording and marking of sub surface information in accordance with AS5488

To be completed by the underground service locator and emailed/handed to the client

DBYD Details

| | | | | | |
|---|-----------|--|--|---|--|
| Location | | 43 Mariposa Rd Bilgola Plateau NSW 2107 | | | |
| Was the work site adversely affected to hinder normal locating procedures? (Leave blank if No) | | <input checked="" type="checkbox"/> | If Yes, please provide a comment Examples include Wet Weather, Construction activities in progress, operational production facility | | Wet weather |
| DBYD Job | - | Telstra Sequence | | - | Enquiry Date |
| Optus Sequence | | Optus Log | | | Have all plans been received <input checked="" type="checkbox"/> |
| Electrical High Voltage Transmission | Ausgrid | If Yes, refer to asset owner warning coversheet and contact Ausgrid prior to excavation Take note of Ausgrid instructions and exclusion zones. | | | |
| | Endeavour | | | | |
| | Other | | | | |
| Jemena High Pressure Gas | | If Yes, refer to Jemena High Pressure Gas Warning coversheet and contact Jemena High Pressure Gas Network representative prior to excavation. Take note of Jemena instructions and exclusion zones. | | | |
| Gas/Oil/Fuel Pipeline | | If Yes, refer to the asset owner's warning coversheet and contact the representative prior to excavation. Take note of asset owner's instructions and exclusion zones. | | | |

Services Located

- Spatial data to AS5488.1-2019 Classification of Subsurface Utility
- Measurements are in cm as per the instrument's accuracy
- ELV70B means Electricity Low Voltage (<1000V) 70cm AS5488.1-2019 QL-B below surface at the measurement point only.
- Pipes indicate diameter (⊙) and depth to Top of Pipe. Invert Level (IL) maybe indicated in diagrams.

| Service | ⊙ | Q L | Comments |
|---------|---|--------|----------|
|---------|---|--------|----------|

| Service | | ⊙ | Q L | Comments |
|----------------|--|---|--------|--|
| Comms (All) | | | | |
| | | | | <p>Additional Recommendations:</p> <p>Gas Monitor Level:</p> |

| Service | | ⊙ | Q L | Comments | |
|---------------|--|---|--------|-----------------------------|--|
| | | | | | |
| SMOF (All) | | | | | |
| | | | | Additional Recommendations: | |

| Service | | ⊖ | Q L | Comments | |
|---------|--|---|--------|-----------------------------|--|
| | | | | | |
| Optus | | | | | |
| | | | | Additional Recommendations: | |

| Service | | ⊙ | Q L | Comments | |
|---------------------------------------|--|---|--------|-----------------------------|--|
| | | | | | |
| SX (Verizon) | | | | | |
| | | | | | |
| Data (Data/ Video/ Intercom) | | | | | |
| | | | | | |
| | | | | | |
| HPGM | | | | | |
| | | | | Additional Recommendations: | |

| Service | | ⊙ | Q L | Comments | |
|---------|--|---|--------|-----------------------------|--|
| | | | | | |
| GM | | | | | |
| | | | | Additional Recommendations: | |
| | | | | | |
| GS | | | | | |
| | | | | | |

| Service | | ⊖ | Q L | Comments | |
|---------|--|---|--------|-----------------------------|--|
| | | | | Additional Recommendations: | |
| | | | | | |
| | | | | | |
| ELV | | | | | |
| | | | | Additional Recommendations: | |
| | | | | | |




| Service | | ⊙ | Q L | Comments | |
|---------|--|---|--------|-----------------------------|--|
| | | | | | |
| EHV | | | | | |
| | | | | Additional Recommendations: | |
| | | | | | |
| WM | | | | | |
| | | | | | |

| Service | | ⊙ | Q L | Comments | |
|---------|--|---|--------|-----------------------------|--|
| | | | | Additional Recommendations: | |
| | | | | | |
| WS | | | | Additional Recommendations: | |

| Service | | ⊖ | Q L | Comments | |
|---------|--|---|--------|-----------------------------|--|
| | | | | | |
| FH | | | | | |
| | | | | Additional Recommendations: | |
| | | | | | |
| IR | | | | | |
| | | | | | |

| Service | | ⊙ | Q L | Comments | |
|---------|-------------------------------------|---|--------|---|--|
| | | | | Additional Recommendations: | |
| | | | | | |
| S | <input checked="" type="checkbox"/> | | D | SMHs noted only | |
| | | | | Additional Recommendations: | |
| | | | | Gas Monitor Level: <input checked="" type="checkbox"/> O2 Level=20.9 | |

| Service | ⊙ | Q L | Comments | |
|---------|-------------------------------------|--------|----------|---|
| | | | | |
| SW | <input checked="" type="checkbox"/> | 750 | B | <p>SW investigation concluded that no NBC asset is laid in an easement over the target property. The alignment detected matched the pipeline inlet and outlet locations and is laid in public land (pathway). A change in alignment is noted beyond the property boundaries towards the pipeline discharge point at a headwall into the creek. It was noted that the pipe alignment depicted in NBC SW records contains improbable information such as the number of changes in alignment and general direction which does not follow the natural topography. The detected alignment follows the topography and the pipe depth is consistently 'on grade'. The outlet is readily accessible and flows correlate well with the inlet. There was little turbidity upstream of creek indicating no major discharge is evident from any point upstream.</p> <p>Additional Recommendations:</p> <p>Gas Monitor Level: <input checked="" type="checkbox"/> O2 Level=20.9</p> |

| Service | ⊙ | Q L | Comments | | |
|---|---|--------|---|--|---|
|  | | |  | |  |
| OTHER | | | | | |
| | | | Additional Recommendations: | | |
| | | | | | |

| Task Description | Compliance | Details of non compliance (Attach separate statement if insufficient space) |
|--|-------------------------------------|--|
| SWMS or JSA Completed | <input checked="" type="checkbox"/> | |
| DBYD/ Utility information received from the client | <input checked="" type="checkbox"/> | |
| Traffic Management | | Not Applicable |

| | | |
|--|-------------------------------------|---|
| | <input checked="" type="checkbox"/> | |
| Services marked on ground as per ground marking requirements | <input checked="" type="checkbox"/> | |
| Indicative depths provided | <input checked="" type="checkbox"/> | |
| Drainage inverts provided / measured | <input checked="" type="checkbox"/> | |
| Site walk-thru completed | <input checked="" type="checkbox"/> | |
| USR- Marked up service plans for Quality Classes | <input checked="" type="checkbox"/> | |
| Different services in common trench located separately | <input checked="" type="checkbox"/> | |
| Marked up Utility plans submitted to the Client | <input checked="" type="checkbox"/> | |
| Services located not shown on DBYD/ Utility plans; | | |
| Services not located / unable to be found; | | Partial section of SW pipe due to blockage. CCTV inspection required to identify the source of the blockage but was declined by the client and deemed unnecessary as the alignment is clearly not affecting the property. |
| Utility / Asset owner locator required to discover service | | |

MARKED UP DBYD PLANS



Figure 1 Work area overview



Inlet at kerb inlet pit



Outlet at creek up to a change of alignment



Alignment down the pathway



Outlet into creek



Pink is approximately what the NBC map shows as the



| | |
|---|--|
|  |  |
| alignment. The green line is the true alignment and is clearly in public land | |
| | |
| | |

Figure 2 On-site images

| Note | Details |
|------|--|
| 1 | The investigation has proven beyond reasonable doubt that the NBC alignment is outside the target property and does not fall into the easement over the property. |
| 2 | The pipe alignment was traced until a blockage prevented the sonde from being propelled further down the pipeline and cctv is required to determine the cause of blockage - debris, buried pit, change in alignment. However sufficient evidence is available to say that debris is likely to be cause and the pipeline continues down the pathway and does not interfere with the property. |
| 3 | |
| 4 | |
| 5 | |

EQUIPMENT LIST

| | Equipment | Description | Usage |
|-------------------------------------|---|--------------------------|--|
| <input checked="" type="checkbox"/> | RD 7100 TL Receiver RD 8000 PXL Receiver | EMF Locator Set | Active or passive service location for conductive pipes & cables |
| | RD 7100 TL Receiver RD 8000 PXL Receiver | EMF Locator Set | Active or passive service location for conductive pipes & cables + Power |
| | RD TX-3 Transmitter | EMF Locator Set | Active service location for conductive pipes & cables only |
| | RD TX-10 Transmitter | EMF Locator Set | Active service location for conductive pipes & cables only |
| | IDS Duo GPR (250/700Mhz) | Ground Penetrating Radar | Non-conductive pipes & cables |
| <input checked="" type="checkbox"/> | Vetter 7.4mm Rod (80m) | Rodding Reel | Non-conductive pipes & cable ducts |
| | Vetter 4.5mm Rod (80m) | Rodding Reel | Non-conductive pipes & cable ducts |

| | Equipment | Description | Usage |
|-------------------------------------|-----------------------------------|---------------------------------------|---|
| | CCTV Rod (60m) | Rodding Reel + camera + sonde | Conductive & non-conductive pipes & ducts |
| <input checked="" type="checkbox"/> | Sonde | Rodding Reel + sonde | Conductive & non-conductive pipes & ducts |
| | Non-metallic 1.2m probe | Non-conductive rated to 1000V | Testing depth |
| | Metal 1.0m probe | NOT FOR ELECTRICS | Testing depth |
| | GPR Concrete (min 1.6GHz) | Ground Penetrating Radar for concrete | Concrete scanning rebar, PT cables, voids |
| | Rebar detector | Concrete scanning (to 150mm) | Concrete scanning to 150mm |
| | Acoustic Locator | Geophone Acoustic Locator | Non-metallic pipes and leak detection |
| | Vacuum Excavation or Hand Digging | Non-Destructive Excavation | Potholing, under-shoring, QL-A validation |

COLOUR ALLOCATION LIST

| Asset Type | Colour | Symbol Examples |
|--------------------|--------------------------|------------------------------|
| Gas Main | Yellow | HPGM or GM |
| Gas Service | Yellow | G |
| Water Main | Blue | WM |
| Water Service | Blue | WS |
| Fire Water | Red | FW |
| Sewer | Cream (Green maybe used) | S |
| Stormwater | Green | SW |
| Telecommunications | White | C |
| Optical Fiber | White | SMOF (O/F maybe used) |
| Data/Video | White | D or V |
| Reclaimed Water | Violet | RW |
| Power | Orange (Red maybe used) | E (H/V & L/V) |
| Street Lighting | Orange (Red maybe used) | SL |
| Unidentified | Pink | As required ("?" maybe used) |

*Pink maybe used in poor contrast conditions such as green on grass

ABBREVIATIONS USED

| Acronym | Meaning | Additional information |
|---------|---------------------------|--|
| HPGM | High Pressure Gas Main | > 210kPa |
| GM | Gas Main | <210kPa |
| GS | Gas service | Typically connected to a meter |
| WM | Water Main | Typically potable mains distribution |
| WS | Water Service | Typically potable connected to a meter |
| FW | Firefighting Water | Typically connected to fire hydrants, boosters etc |
| RW | Reclaimed water | Non potable treated water |
| S | Sewer | All sewerage |
| SW | Stormwater | All stormwater |
| C | Communications | Typically copper services |
| SMOF | Single Mode Optical Fiber | Only optical fiber type for long distance. Typical of a carrier. |
| MMOF | Multi Mode Optical Fiber | An optical fiber type for short |

| Acronym | Meaning | Additional information |
|---------|--------------------------|--|
| | | distance (typically internal building runs) |
| D | Data | Includes telemetry and other remote control applications such as security |
| V | Video | Typically security cameras |
| EHV | Electricity High Voltage | > 1000V typically substation supply and transmission supply & DC (Railways) |
| ELV | Electricity Low Voltage | < 1000V including 415V & DC |
| UKN | Unknown | A located target which cannot be identified without potholing eg abandoned pipes or cabling |
| HYD | Hydrant | Typically on a water main |
| SV | Stop valve | Typically on a water main |
| AV | Air valve | Typically on a water main |
| SCOUR | Scour point | Typically on a water main |
| CPIT | Communications Pit | Pit for private, unknown or other communications carriers such as TPG, Superloop etc |
| OPIT | Optus pit | Includes Verizon (SX) |
| NPIT | Nextgen pit | Includes Vocus |
| TPIT | Telstra pit | |
| SWPIT | Stormwater pit | |
| SMH | Sewer Man Hole | Typically requires confined space access |
| SWMH | Stormwater Man Hole | Typically requires confined space access |
| TMH | Telstra Man Hole | Now classified as a footway access chamber. Typically requires confined space access |
| Pnnn | PVC conduit | nnn is the diameter 20, 35, 100 etc eg P100 |
| Annn | Asbestos conduit or duct | nnn is the diameter 20, 35, 100 etc eg A100 |
| ACnnn | Asbestos cement lined | Typically for water mains. nnn is the diameter eg AC100 |
| UPnnn | Ultra PVC | typically for water mains includes 'Blue Brute' and other PVC variants. nnn is the diameter eg UP100 |
| RC | Reinforced Concrete | Typical of stormwater pipes |
| SIS | Sewer Inspection Shaft | |
| IS | Inspection Shaft | |
| IL | Invert Level | Generally used instead of QL when tracing with sondes eg SW60IL |

AS5488 Classification of Subsurface Utility Information (SUI) Quality Levels

Quality levels apply to a subsurface utility at the date that the information was obtained and at that particular measurement point.

Due to physical man-made and natural changes that may occur in the area around the subsurface utility since that date, at any future time and without further investigation the relative spatial position only indicates the best information available about the location of the subsurface utility.

Quality Levels are a classification reflecting the precision and accuracy of utility location and attribute information.

A quality level describes the amount and accuracy of information that is collected or held on a subsurface utility. There are four quality levels—D, C, B and A.

Quality level A is considered to be the highest quality level.

| Description | Nomenclature | Attributes |
|-----------------|--------------|--|
| Quality Level D | QL-D | The attribute information and metadata of a subsurface utility can be compiled from any, or a combination of, the following: (a) Existing records. (b) Cursory site inspection. (c) Anecdotal evidence. (d) Ground Penetrating Radar |
| Quality Level C | QL-C | A surface feature correlation or an interpretation of the approximate location and attributes of a subsurface utility asset using a combination of existing records (and/or anecdotal evidence) and a site survey of visible evidence. The minimum requirement for quality level C is relative spatial position. The location of surface features measured in terms of relative spatial positioning with a maximum horizontal tolerance of ± 300 mm. |
| Quality Level B | QL-B | Provides relative subsurface feature location in three dimensions. The minimum requirement for quality level B is relative spatial position. Location of surface features measured in terms of relative spatial positioning with a maximum horizontal tolerance of ± 300 mm; and Location of subsurface features measured in terms of relative spatial positioning with a maximum horizontal tolerance of ± 300 mm and maximum vertical tolerance of ± 500 mm. |
| Quality Level A | QL-A | Highest quality level and consists of the positive identification of the attribute and location of a subsurface utility at a point to an absolute spatial position in three dimensions. It is the only quality level that defines a subsurface utility as 'validated'. Where the whole line segment cannot be verified by line of sight, quality level A shall not be attributed to the line segment between validated points ie the whole line MUST be exposed. |

WARNING & DISCLAIMER

It must be noted that there are many factors beyond the control or knowledge of CIVILSCAN. There is no guarantee that all services have been located & marked. There has been no judgement made as to what is in the area to be excavated. It is purely an instrumental reading and interpretation and should be taken as such. It is highly recommended to expose the asset by potholing.


We shall not be liable in respect to any claim directly or indirectly arising from or in connection with any loss or damage when such loss or damage occurs due to works undertaken by a third party main contractor, excavator, principal or owner when such mechanical excavating activities occur within a minimum of 1 metre in diameter of the area(s) identified or the standard requirements as per the Work Cover Guidelines, Ausgrid Network Standards (NS156) and Asset Owners Requirement Guidelines for any work near powerlines. This exclusion does not apply to potholing and/or vacuum excavation within the identified area.

The party carrying out the excavation has to make the final decision and is solely responsible for the work being carried out. No liability is attached to CIVILSCAN in relation to the contents of this report or in respect of the work.

It is also important to note that the client fully understands the limitations of the available technology.

| | | | | |
|---|--|--|-----------|-------------|
| Site Representative Present | Present <input checked="" type="checkbox"/> | Not Present | Name | Kate Davies |
| Billable Hours (excluding any downtime) | 2 | Final Report <input checked="" type="checkbox"/> | | |
| Date | 9/07/2021 | | Signature | |

DBYD Certified Locator Details

| | | | | | |
|----------|---|-----------|--|-------------------------------------|-----------|
| USL | John Monty | Signature |  | Date | 9/07/2021 |
| Location | 43 Mariposa Rd Bilgola Plateau NSW 2107 | | Optus Certified | <input checked="" type="checkbox"/> | |

| | |
|-------------------|----------------------|
| DBYD CLO Locator | Certification Number |
| John Monty | L-11799 |
| Matthew Dumpleton | L-20366 |
| | |