

# Certified Locator Candidate Manual

September 2024



# Contents

- 1. GENERAL INFORMATION ..... 3
- 2. THE CERTIFICATION PROCESS ..... 4
- 4. THE PRACTICAL ASSESSMENT – CANDIDATE ACKNOWLEDGEMENT ..... 8
- 5. THE PRACTICAL ASSESSMENT – TOPICS ..... 9
- 6. LIST OF REQUIRED EQUIPMENT ..... 10
- 7. LOCATE TIPS ..... 11
  - The four key minimum features of a compliant EMF Locator ..... 11
  - The four steps to a reliable EMF location ..... 11
  - AS-5488 Quality Levels ..... 11
  - Gain ..... 11
  - Peak / Null ..... 12
  - Weak or Poor Signal ..... 12
  - Signal Trace Frequencies ..... 12
  - Current ..... 12
  - Active Methods of Locating ..... 13
  - Passive Methods of Locating ..... 13
  - Work to a process ..... 13
  - Plans are not 100% accurate ..... 13
- 8. CANDIDATE INFORMATION ..... 14
  - 8.1. Candidates ..... 14
  - 8.2. Access and equity ..... 14
  - 8.3. Systems management ..... 14
  - 8.4. Cancellation and Refund policy ..... 14
  - 8.5. Managing conflict of interest ..... 14
  - 8.6. Quality Management ..... 14
  - 8.7. Complaints and Appeals Policy ..... 15
  - 8.8. Assessment Appeals ..... 15
  - 8.9. Language, Literacy and Numeracy ..... 15
- 9. COMPLAINTS AND APPEALS POLICY ..... 16
  - 9.1. Complaint or Appeal: ..... 16
  - 9.2. Grounds for Appeal ..... 16
  - 9.3. Record Keeping: ..... 17

# 1. GENERAL INFORMATION

---

## 1.1. About CERTLOC

CERTLOC Global, is a not-for-profit Certified Locator Institute pioneering world-leading solutions and certifications. Our approach is to prioritise safety, doubling down on efficacy and rising to combat injury, property damage and expensive miscalculations.

We are committed to ensuring every CERTLOC Certified Locator provides peace-of-mind when working around underground assets.

## 1.2. About the Certified Locator Program

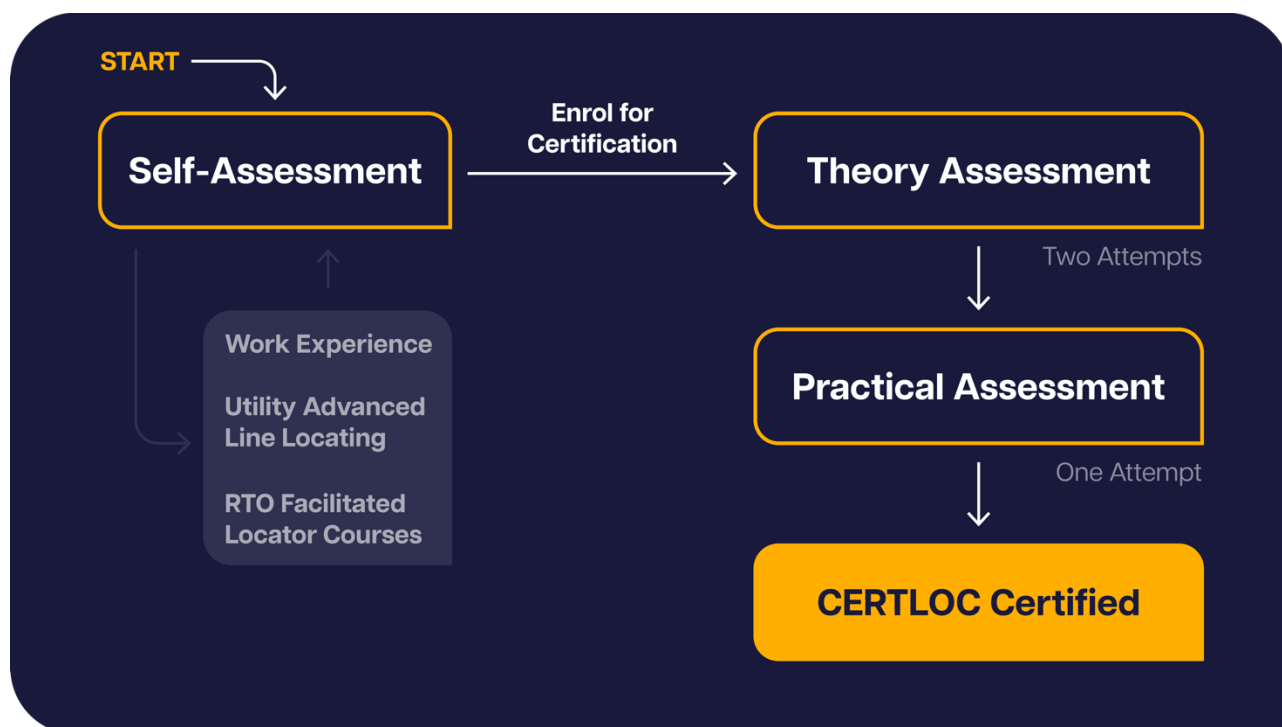
CERTLOC Certifications provides superior assessment expertise and resources for locators and the organisations they work for.

We empower locators to assess their competence prior to enrolling in our industry-leading certification process, which consists of theory and practical components. We require locators to have appropriate equipment prior to undertaking the practical assessment.

Certification will be granted only once our high standards have been met. These standards exist to ensure worker safety and safer worksites and communities.

Sometimes less knowledgeable locators aren't able to meet those high standards. We work closely with them so they can undertake a reassessment with the goal of achieving certification.

## 2. THE CERTIFICATION PROCESS



### Step One

A Candidate must undertake the self-assessment at <http://www.certloc.com/self-assessment/>. The Self-Assessment is used by the Candidate to identify if they are likely to be deemed adequately skilled to pass the actual Certified Locator Program. The Self-Assessment is free. The Candidate agrees to the [Terms and Conditions](#).

### Step Two

A Candidate must enrol in the Certified Locator Program. This involves the payment of a non-refundable assessment fee (refer cancellation and refund policy for details). For group enrolments or invoice payments Candidates should contact the CERTLOC Administration Team.

Nb – The assessment fee is currently \$1,295.00 + GST, though it is subject to change upon four weeks' notice on the CERTLOC website, [www.certloc.com.au](http://www.certloc.com.au) additional charges may apply for practical assessments conducted outside capital cities.

### Step Three

This theory assessment is comprised of 70 multiple choice questions. These questions are in the following sections:

- > 15 questions on Plan and Prepare for locating
- > 35 questions on Locating Techniques
- > 20 questions on Telecommunications

A Candidate is provided with two (2) attempts to obtain at least 96% on the theory component.

If the Candidate does not achieve at least 96% on the theory component, within the two (2) attempts, they are required to re-sit the theory assessment upon payment of the re-sit fee (currently \$150 +GST).

**Step Four**

If the Candidate obtains at least a score of 96% on the theory component, within the two (2) attempts, the Candidate will be contacted to organise a time for the practical assessment to be conducted by an Assessor.

**Step Five**

The Candidate is assessed by an Assessor on the Candidate's ability to correctly identify underground assets/utilities, including pipe and cable networks; and the procedures performed/conducted by the Candidate in doing same.

If the Candidate does not achieve 100% on the practical component, the Candidate may choose to book a re-assessment (re-assessment fee currently \$695 +GST).

**Step Six**

If the Candidate obtains a score of 100% on the practical assessment, a Statement of Certification will be sent to the successful Candidate.

### 3. THE PRACTICAL ASSESSMENT – ON THE DAY

---

The practical field assessment will be conducted at a location chosen by the assessor. You will receive the specific location details a few days before the assessment.

You must do a BYDA enquiry for the location and it must be done by you and in your name.

Be sure to check that you have all plans, and all required information is legible on the plans.

The plans must be on a minimum 10-inch tablet and/or printed in colour. Some plans are formatted to be printed in A3.

Make sure to arrive with all equipment as per required [Equipment List](#).

Typically, there are three assessment sessions each day, scheduled for 8 am, 11 am, and 2 pm. Three hours are allocated for each assessment.

There is time at the beginning for equipment inspection, Telstra plan reading task, safety briefing, explanation of locating scenario and marking method required.

You will then have two hours to perform the actual locating. You are not required to complete the site in the two hours. However, the assessor needs to see sufficient locating done to evaluate your competency. At a minimum, you should have used Direct Connect and Induction Clamp on at least two, and possibly three or more, asset types, depending on the site.

During this two-hour period the assessor will be entering observations into their mobile device. They will also take notes of your actions step by step and may ask occasional questions or inspect your connection points to assess connection methods and frequencies.

For most of the time, they will observe from a distance, which might include sitting in a vehicle or another location to provide you with space to perform your job.

At the end there will be time for a debriefing. The assessor will communicate the assessment outcome and feedback then proceed to complete the necessary paperwork, which will be entered into the Tutis App. You will be asked to sign off on the assessment process.

#### **Importantly remember:**

- > Feeling nervous is normal, and we understand this.
- > If you have difficulty answering some of the questions, there are alternative ways for the assessor to gather the required information.
- > Approach the assessment as if it were a typical day-to-day job.
- > We are not assessing your OH&S practices. If we have concerns, we will discuss them with you.
- > Assessors are not available to answer questions or assist you beyond what's covered in the safety briefing.
- > You don't need to explain every action you take. If the assessor is uncertain about something, they will ask for clarification.
- > Most importantly we want you to go away having passed the assessment or learnt something.

## The equipment used for the assessment.

- > Use the equipment that you use day to day.
- > Have spare batteries.
- > Be sure it is in good working condition.

The most common failure of you EMF locator is either the Direct Connect leads or the Induction Clamp. They are easy to test.

## How to test Direct Connect leads or the Induction Clamp

### Direct Connect leads.

- > Plug them into the transmitter.
- > Do not connect the Black lead to the Red lead.
- > Turn the transmitter on.
- > Depending on the manufacturer and model it will display Current and Voltage or that you have a signal.
- > You will have zero current and maximum voltage or that there is no signal.
- > Connect the Black lead to the Red lead.
- > If your transmitter displays zero milli amps or no signal the leads are fault.

### OR

- > If the transmitter displays milliamps at low voltage or that there is a signal the leads are working.

## Induction Clamp

- > Plug the clamp into the transmitter.
- > Turn the transmitter on at either 4 kHz or 8 kHz and at high signal output.
- > You will hear a ringing noise.
- > When you open the clamp the ringing noise will stop.
- > If there is no noise the clamp is faulty.
- > It may just be the contact where the clamp contacts both top and, or bottom, is dirty and not having a clean electrical contact.
- > If they are clean and contacting and there is no ringing noise the clamp is faulty.

**Note:** The lower the frequency and higher the signal output on the transmitter the louder the ringing noise will be.

## 4. THE PRACTICAL ASSESSMENT – CANDIDATE ACKNOWLEDGEMENT

---

Candidates to acknowledge the following at the start of the assessment:

You are attempting an assessment to prove competency to complete the Certified Locator Program.

- > You will be asked to locate predominantly in the peak mode for various reasons although any mode may be used at any time as long as you can determine signal quality with the various modes.
- > Your methods, experience and knowledge are a major contributor to the outcome.
- > You have completed the self-assessment and an online theory component and should be able to answer any theoretical questions asked today.
- > You will be given an area or scenario to EMF Locate and will have approximately 2 hours for this portion of the assessment. Some assets may be excluded.
- > This assessment can be extended or aborted at any time at the assessor's discretion if a result can or cannot be achieved within the appropriate time.
- > You may leave the designated area but are asked to only mark within the designated area.
- > You should be supplied with flags, markers or crayons, and are not permitted to use paint at any stage.
- > The site is considered your site and signs may be placed, providing they comply with local guidelines and a Traffic Management Plan is not required.
- > The assessor may at any time follow, watch, or ask questions on your procedure, locator settings or techniques as he/she feels required.
- > The assessor may also leave you to complete the task, then ask questions upon completion.
- > You must present all the required equipment as per the list to achieve a "pass".



## 5. THE PRACTICAL ASSESSMENT – TOPICS

---

The following topics are covered in the Certified Locator Assessment:

- > Carry out risk assessment.
- > BYDA enquiry system.
- > Ability to read all plan.
- > Scope of work and area orientation.
- > Use of all locating equipment.
- > Conductive locating. Direct Connect.
- > Inductive locating. Induction Clamp and Spill Induction.
- > Passive signals.
- > Understanding of how signal is created.
- > Identify signal distortion and how to reduce it.
- > Identify Weak or Poor signal and how to improve it.
- > Reasons for multiple signals.
- > Use of current, how it works and its effect.
- > Verifying accuracy and target
- > Locating non-conductive assets i.e. Fibre Optic, PVC etc.
- > Using sondes and traceable rods.
- > Methodical approach to locating task
- > Blind search process.
- > Housekeeping.
- > Reporting at completion of locating task.

## 6. LIST OF REQUIRED EQUIPMENT

---

To undertake the practical assessment, please present with the following equipment:

1. Complete BYDA Plans for the assessment location ordered in the candidate's name (complete A3 sized colour print outs, or loaded onto an at least 10-inch tablet)
2. Photo ID and construction white card
3. EMF locating instrument must be serviced, maintained, and calibrated as required by the manufacturer with the following minimum requirements:
  - > Multiple frequencies (Minimum of 1 Low, 1 Medium & 1 High Frequency)
  - > At least one sonde frequency
  - > Three active modes, Direct Connect, Inductive Clamp and Spill Induction
  - > Two passive modes, Radio and Power
  - > Separate Peak and Null Modes
  - > Be able to read Current Measurement
  - > Manual Gain control
4. Multiple Frequency Transponder Locator
5. 4 Gas detector with sniffer hose
  - > Combustibles (LEL)
  - > Oxygen (O)
  - > Carbon Monoxide (CO)
  - > Hydrogen Sulphide (H<sub>2</sub>S)
6. Traceable duct rodding equipment and a sonde suitable for rodding a communication duct and at a frequency to suit the EMF Locator
7. Induction Clamp Extension Handle (recommended 2m length and non-conductive handle)
8. Pair of Telstra Manhole guards
9. Telstra Manhole keys
10. Minimum of 4 X 450 mm witches hats
11. Telstra pit seal breaker tool
12. Applicable safety management signs
13. Site record document, Asset location report or similar
14. Safety documentation (Take 5, JSA, SWMS)
15. First aid kit
16. Hi Vis workwear or vest and work boots

Failure to present with the above listed equipment may lead to the assessment being discontinued and the participant will incur the cost of re-assessment (\$695 + GST).

## 7. LOCATE TIPS

---

### The four key minimum features of a compliant EMF Locator

1. Manual Gain
2. Separate Peak and Null
3. A range of Frequencies. Low, Medium and High.
4. Be able to read Current

These features are required to enable us to provide a reliable electronic location.

### The four steps to a reliable EMF location

1. **Connect**: Ideally Direct Connect or Induction Clamp.
2. **Confirm**: Sweep connection point, determine signal points, identify target by current.
3. **Trace**: Minimise gain adjustments and check Peak/Null.
4. **Sanity Check**: Trace to logical end point. If a pit, open and verify.

### AS-5488 Quality Levels

1. QL-A Verified Potholed +/- 50mm
2. QL-B Reliable EMF location. 300mm Horizontal, 500mm Vertical
3. QL-C Identify buried assets by surface features but not able to achieve QL-B
4. QL-D Identify asset in the vicinity by plans but not able to achieve QL-B

QL-C and QL-D provide no special accuracy.

### Gain

- > Gain must be manual, not automatic.
- > Set to 50-60%
- > When gain changes it is telling you something.
- > Change of direction or depth.
- > A split or tee in the target.

## Peak / Null

- > Allows us to determine if we have a round signal or a distorted signal.
- > Tells us if we can give an accurate depth.
- > If Peak and Null do not align, we have a distorted signal and should not give a depth.
- > Allows us to determine true location of the target. Half the distance between the Peak and Null and transfer outside the Peak.
- > **ALWAYS check Peak and Null before placing a mark.**

## Weak or Poor Signal

- > Weak or Poor signal is different to distorted signal.
- > It is identified by the displayed signal not being steady.
- > The audible signal will also be erratic.
  
- > **Always start at the lowest frequency likely to give a good signal and at the lowest signal output.**
  
- > If the signal is weak or poor
- > Increase the signal output one level at a time
- > If this doesn't correct it go back to the lowest signal output and up to the next Frequency

## Signal Trace Frequencies

- > **Low Frequency** – Typically 8 kHz and lower - Low frequencies are generally best for Direct Connection.
- > **Medium Frequency** – Typically 33kHz - Medium frequencies are generally best for the Induction Clamp.
- > **High Frequency** – Typically 65kHz and higher - High frequencies are generally best for Spill Induction / Drop Box method of applying signal.
  
- > **Always start at the lowest frequency and signal output that is likely to provide a good signal**

## Current

- > We read it in milli amps mA
- > It is used to determine the target. Highest mA.
- > Used to identify branch line or tees.
- > We want to achieve Maximum current for best signal flow.
  
- > **To increase Current**
  1. Reduce resistance - e.g. water on earth stake, use bigger earth stake, connect bigger target (largest cable size)
  2. Increase voltage - Increase transmitter output.

## Active Methods of Locating

- > Direct Connect
- > Clamp
- > Induction

## Passive Methods of Locating

- > We use only the receiver
- > We detect naturally occurring noise.
- > We can only determine conductive assets
- > We cannot identify them.
  
- > **Caution! Power Passive does not necessarily identify power cables.**

## Work to a process

1. Where is the jobsite
2. Obtain BYDA (essential) and any other plans or anecdotal information
3. Clarify work area with client
4. Walk and inspect work area looking for signs of buried assets.
5. Check all plans and prioritise them
6. Locate everything you can to QL-B
7. Identify that which is QL-D or QL-C
8. Complete active and passive sweeps
9. Complete Asset Location Report and go over with the client

## Plans are not 100% accurate

- > Never take plans as the truth. They are a guide.
- > Always compare what the plan says to what you see and let your locator discover the truth.
- > Open every pit.

## 8. CANDIDATE INFORMATION

---

### 8.1. Candidates

Throughout this manual, locators undertaking the assessment process are termed “Candidates”.

### 8.2. Access and equity

CERTLOC actively supports and encourages people of all abilities to participate in our assessment program. All staff members and contractors are responsible for ensuring access and equity to people of all abilities for all assessments provided by CERTLOC.

### 8.3. Systems management

CERTLOC will maintain systems for recording and archiving client enrolments, examinations, assessment outcomes, complaints, statement of certification issued, et al. CERTLOC will treat all personal records of clients confidentially.

### 8.4. Cancellation and Refund policy

If a Candidate is unable to attend the practical assessment, CERTLOC reserves the right to charge a cancellation fee of \$695 + GST. This is outlined in the [Terms and Conditions](#).

### 8.5. Managing conflict of interest

It is understood that Candidates and Assessors may have potential conflicts of interest (whether actual or perceived). Such conflicts or perceived conflicts may be related (but not limited) to:

- > Competing business interests
- > Assessors have conducted training or a previous assessment for the Candidate

These are generally more perceived than real however any Assessor or Candidate who feels a possible conflict exists must immediately notify the CERTLOC at the time of arranging the assessment. Failure to do so will void grounds for appeal on the issue. Candidates will need to be aware that an alternative Assessor may not be available and could delay assessment for some time. Additional costs may also have to be borne by the Candidate.

### 8.6. Quality Management

CERTLOC operates a Quality Management System for the provision of assessment of Certified Locators and Skills Development training, the administration of the Certified Locator Program and the Certified Locating Organisation Program and the delivery of Pre-Excavation Management course.

(Refer CERLOC's [Quality Policy](#))

### **8.7. Complaints and Appeals Policy**

CERTLOC recognises the need for Candidates, staff and other clients to have confidence that the Organisation will deal with grievances in a fair and equitable manner based on procedures that are appropriate, accessible and easily understood.

### **8.8. Assessment Appeals**

Assessment appeals must be submitted in writing to [info@certloc.com.au](mailto:info@certloc.com.au)

### **8.9. Language, Literacy and Numeracy**

Language, Literacy and Numeracy (LL&N) skills are essential aspects of work performance and shall be explicitly addressed in the assessment process. The CERTLOC Certified Locator practical assessment (standard) requires the Candidate to read and interpret plans, drawings and specifications and as such:

- > The Candidate **MUST** have the reading skills to read and interpret information contained in plans/drawings and specifications
- > The Candidate **MUST** have the numeracy skills to convert numerical values and scales shown on plans, drawings and specifications

## 9. COMPLAINTS AND APPEALS POLICY

---

CERTLOC Ltd recognises the need for Candidates, staff and other clients to have confidence that the Organisation will deal with grievances in a fair and equitable manner based on procedures that are appropriate, accessible and easily understood.

CERTLOC has a duty of care in ensuring Candidates undertake assessments in an environment free of coercion, unfair treatment, or harassment.

Nothing in these procedures limits the rights of individuals to take action under Australia's Consumer Protection laws.

CERTLOC is constantly reviewing and updating policies, as a grievance helps us to fix a problem and assists with continuous improvement.

### 9.1. Complaint or Appeal:

A complaint would generally be directed at the general performance of CERTLOC or its staff in the delivery of our services.

An appeal would generally be directed at the assessment outcome and/or assessment process.

Candidates are required to submit a complaint or appeal in writing.

A complaint or appeal will be dealt with promptly. All complaints will be dealt with by the CEO and contact will be made within 10 working days to arrange a time to discuss your complaint or appeal.

Candidates will be provided with a written outcome on their case including the rationale for the decision. If a Candidate is satisfied with the resolution, agreed actions will be implemented and the complaint or appeal will be closed.

If a Candidate is not satisfied with the outcome and the above processes are not effective in resolving the issue, then a suitable person or panel (determined by the CEO) may be engaged to aid in the resolution of the issue.

### 9.2. Grounds for Appeal

An application for appeal will be considered where:

1. A Candidate claims a disadvantage because the Assessor did not provide an assessment outline
2. A Candidate claims disadvantage because the Assessor varied without consultation or in an unreasonable way the assessment requirements as specified in the subject outline
3. A Candidate claims disadvantage because assessment requirements specified by the Assessor were unreasonably or prejudicially applied to him or her
4. A Candidate is of the view that a clerical error has occurred in the documenting of the assessment outcome
5. A Candidate claims disadvantage because the Assessor did not follow the guidelines as per Assessor instructions on assessment instrument



### **9.3. Record Keeping:**

A written record of all complaints handled under this procedure and their outcomes will be maintained for a period of five years. These records will remain with the Candidates file and cannot be accessed without a written request to the CEO.

If the appeal for re-assessment is proven, CERTLOC will appoint an alternative Assessor who will make all necessary arrangements to conduct the re-assessment of the Candidate at a time that is mutually convenient for all parties concerned at no cost to the Candidate.